

**CMS Bundled Payments for Care  
Improvement Advanced Model  
*Fifth Annual Evaluation Report Appendices***



*Prepared for:* **Centers for Medicare & Medicaid Services**

*Submitted by:* **The Lewin Group, Inc., with our partners Abt Associates, GDIT, and Telligen**

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## **CMS Bundled Payments for Care Improvement Advanced Model: Fifth Annual Evaluation Report Appendices**

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## Appendix A: Glossary of Terms and Acronyms List

### Exhibit A.1: Glossary of Terms

Name	Definition
90-Day Post-Discharge Period (PDP)	The 90 days following discharge from the anchor stay or procedure.
Accountable Care Organization (ACO)	A group of doctors, hospitals, and other health care providers who come together voluntarily to give coordinated high-quality care to Medicare patients they serve.
Acute Care Hospital (ACH)	A hospital that provides inpatient medical care and other related services for surgery, acute medical conditions, or injuries (usually for a short-term illness or condition).
Administrative Quality Measures Set	A set of six exclusively claims-based quality measures collected directly by the Centers for Medicare & Medicaid Services (CMS). Two measures included in the set, All-Cause Hospital Readmission and Advanced Care Plan, apply to all clinical episodes, and up to two additional measures could apply to each clinical episode. For Model Year 4 and later, participants can choose to be evaluated based on either the administrative quality measures set or the alternative quality measures set.
Advanced Alternative Payment Model (APM)	<p>Approaches to paying for health care that incentivize quality and value. Advanced Alternative Payment Models (APMs) are a subset of APMs that meet these three criteria:</p> <ul style="list-style-type: none"> <li>• Requires participants to use certified electronic health records technology</li> <li>• Provides payment for covered professional services based on quality measures comparable to those used in the Merit-based Incentive Payment System (MIPS) Quality performance category</li> <li>• Either (1) is a Medical Home Model expanded under the CMS Innovation Center authority OR (2) requires participants to bear significant financial risk</li> </ul> <p>A benefit of a model’s designation as an Advanced APM is that, under the Quality Payment Program (QPP), eligible clinicians who participate in an Advanced APM and meet certain Medicare patient/payment thresholds may qualify as a “Qualifying APM Participant” (QP) and be exempt from MIPS reporting requirements and payment adjustments and receive a bonus incentive (prior to 2024) or a higher physician fee schedule update (2024 and beyond).</p>
Alternate Quality Measures Set	A set of quality measures introduced in Model Year 4 (2021) that includes a combination of up to five claims-based, hospital-based, and registry-based measures for each clinical episode. Two measures included in the set, All-Cause Hospital Readmission and Advanced Care Plan, apply to all clinical episodes, and up to three additional measures could apply to each clinical episode. Participants can choose to be evaluated based on either the administrative quality measures set or the alternative quality measures set.
Ambulatory Surgical Center (ASC)	A facility other than a hospital that provides outpatient surgery. Ambulatory surgical centers (ASCs) also are known as outpatient surgery centers or same day surgery centers.
Anchor Procedure	The hospital outpatient procedure that triggers the start of an outpatient episode.
Anchor Stay	The hospital inpatient stay that triggers the start of an inpatient episode.
Beneficiary Assignment (Attribution Rules)	The methodology used to assign beneficiaries to a CMS payment model. Beneficiary assignment contributes to financial reconciliation, benchmark pricing, and program operations.
Bundled Payments for Care Improvement Advanced (BPCI Advanced) Model	A voluntary value-based payment model from the Center for Medicare & Medicaid Innovation (CMMI) that tests whether linking payments for a clinical episode can reduce Medicare expenditures while maintaining or improving the quality of care.
BPCI Advanced Counterfactual	What payments would have been absent the BPCI Advanced Model. Calculated as the average BPCI Advanced baseline amount plus the average change for the comparison group from baseline to intervention. Used as the denominator to present results for net savings to Medicare as a percentage.



Name	Definition
BPCI Advanced Database	A database where CMS stores secure, frequently updated data about BPCI Advanced participants and episodes, from which the evaluation team can process various reports at any time.
Clinical Episode	For Model Years 1 and 2 (2018 and 2019), there were 32 clinical episodes, and for Model Years 3 and 4 (2020 and 2021), there were 34 clinical episodes identified by a specific Healthcare Common Procedure Coding System (HCPCS) code or Medicare Severity-Diagnosis Related Group (MS-DRG). During Model Years 1 through 3, participants chose to participate in one or more clinical episodes. In Model Years 4 (2022) and later, participants were required to choose one or more clinical episode service line groups (see below).
Clinical Episode Service Line Group (CESLG)	A grouping of clinical episodes into clinically related groups. For Model Year 4 and later, participants are required to select clinical episode service line groups (CESLGs) instead of one or more clinical episodes. Participants are not required to participate in clinical episodes within a CESLG that do not meet the minimum volume threshold during the baseline period.
Clinically Integrated Network (CIN)	A legal entity comprising a group of health care providers working together to deliver efficient and coordinated care to patients and decrease the cost of care.
CMS Discount	A discount applied to the benchmark price to calculate the target price for each clinical episode for each episode initiator. The CMS discount was 3% for all episodes in Model Years 1 through 5. In Model Year 6 and later, the CMS discount is 2% for medical episodes and 3% for surgical episodes.
Composite Quality Score (CQS)	An aggregate quality score determined by calculating a score for each quality measure at the clinical episode level. Scores are scaled across the clinical episodes attributed to a specific episode initiator and weighted based on clinical episode volume. The Composite Quality Score (CQS) is used to adjust positive or negative total reconciliation amounts.
Consultant	A non-participating organization that provides strategic guidance on participation and clinical episode selection, data analytic support, or other services to help episode initiators succeed in the model.
Convener Participant	A type of participant with at least one downstream episode initiator, that facilitates coordination among downstream episode initiators and other providers and bears and apportions financial risk. A convener participant may or may not be a Medicare provider or initiate episodes.
Convener-Like Organization	Entities that are not formal participants in the BPCI Advanced Model but provide services to episode initiators that are similar to the services provided by conveners, including data analysis and care navigation services.
Downstream Episode Initiator	A hospital or physician group practice (PGP) that is associated with a convener participant and initiates episodes. Downstream episode initiators do not bear financial risk directly with CMS.
Eligible Clinician	A clinician that was the attending or operating physician for an eligible hospital discharge or an eligible outpatient discharge.
Eligible Medicare Fee-for-Service (FFS) Episodes Nationwide	The set of anchor stays and procedures, plus the 90-day post-discharge or post-procedure period, that meet model eligibility requirements and are initiated at any eligible hospital in the United States.
Eligible Hospital	An acute care hospital (ACH) that meets the criteria for participation in BPCI Advanced.
Eligible Hospital Discharge	A Medicare FFS inpatient stay that met the model eligibility requirements, including having a BPCI Advanced MS-DRG, being at a hospital that is eligible to be in BPCI Advanced, and meeting other beneficiary inclusion criteria.
Eligible Outpatient Procedure	A Medicare FFS outpatient procedure that meets the model eligibility requirements, including being in a hospital outpatient setting, having a BPCI Advanced HCPCS code, and meeting other beneficiary inclusion criteria.

Name	Definition
Episode Initiator	The Medicare-enrolled hospital or PGP participating in the model as a participant or a downstream episode initiator that can trigger episodes.
Episode	The anchor stay or procedure plus the 90-day post-discharge or post-procedure period.
Impact Analysis Baseline Period	The period of time prior to the BPCI Advanced intervention period used in the impact analyses. The baseline period for the analysis of Model Year 4 spans nearly 4 years, from January 1, 2015, to September 30, 2018.
Key Informant Interview (KII)	A focused qualitative interview with an individual or individuals with firsthand knowledge about the topic area of interest. KIIs are conducted by the evaluation team to better understand a localized topic area as it relates to the impact BPCI Advanced has on quality of care, utilization, or the reduction in expenditures.
Medical Episode	An episode with an MS-DRG or HCPCS code within one of the four medical CESLGs: <i>cardiac care, gastrointestinal care, medical and critical care, and neurological care</i> . See <b>Appendix B</b> for a complete list of MS-DRGs, HCPCS codes, and clinical episodes.
Net Payment Reconciliation Amount (NPRA)	A positive total reconciliation amount paid to a participant by CMS, which includes adjustments based on quality performance. NPRA is earned when the aggregate Medicare allowed amounts for a participant’s clinical episodes are lower than the target price for the clinical episodes and remain positive after adjustments for quality performance.
Non-Active PGP Episode Initiator	A PGP that can bill FFS claims to Medicare under the BPCI Advanced Model but does not have any episode volume over the course of the model.
Non-Convener Participant	An individual hospital or PGP that assumes financial risk for clinical episodes. Non-convener participants are also episode initiators.
Parallel Trends Test	A key assumption required for an unbiased DiD estimate is that BPCI Advanced and the comparison group have the same trend in outcomes prior to the intervention. We tested the null hypothesis that selected BPCI Advanced and comparison providers had parallel trends in outcomes during the baseline period. We rejected the null hypothesis that there were parallel trends in the baseline at the 10% level of significance, noted with the dagger symbol, “†”.
Patient Optimization	A practice in which providers identify and mitigate medical risk factors prior to surgical procedures to minimize complications and improve recovery.
Performance Period	A defined period during which episodes may be initiated and all Medicare FFS payments aggregated for a specific clinical episode are attributed to a participant. The performance periods are used to determine reconciliation for episodes. Apart from the first performance period (October 1, 2018, through December 31, 2018), performance periods will run from January 1 through June 30 and July 1 through December 31. The BPCI Advanced Model includes 14 performance periods, running through December 31, 2025.
Post-Acute Care (PAC)	All care services received by a patient after discharge from a hospital stay or procedure. Includes care from the post-acute care (PAC) provider (skilled nursing facility [SNF], inpatient rehabilitation facility [IRF], long-term care hospital [LTCH], or home health agency [HHA]) as well as any potential inpatient hospitalizations (readmissions), professional services, or outpatient care.
Reconciliation	The semi-annual process where CMS determines whether participants are eligible for a NPRA payment or are required to pay back money to CMS. To do this, CMS compares the aggregate Medicare FFS allowed amounts for all items and services included in episodes attributed to a participant against the target price for those episodes and adjusts for performance on quality. If the aggregate amounts are lower than the target price (after accounting for the CQS and stop-gain/stop-loss adjustments), the participant is eligible to receive a NPRA payment from CMS. If the aggregate amounts are higher than the target price (after accounting for the CQS and stop-gain/stop-loss adjustments), they are required to pay a repayment amount to CMS.

Name	Definition
Repayment Amount	The amount participants must pay CMS when aggregate Medicare allowed amounts for clinical episodes that the participant has selected, including an adjustment for the CQS, are higher than the target price for such clinical episodes.
Retrospective Trend Adjustment	An adjustment to the final target price that is designed to help account for discrete, unanticipated systematic shocks that are common to all hospitals (including non-participant hospitals) in the peer group during the performance period.
Risk Adjustment	Risk adjustment refers to the process of controlling for variables, such as beneficiary characteristics, that may also affect the outcome of interest. CMS uses risk adjustment to calculate what to pay a health care provider based on a patient’s health, their likely use of health care services, and the costs of those services. Risk adjustment is a way to help ensure doctors and other health care providers are paid fairly for the patients they treat. Without adequate risk adjustment, providers with a sicker or more service-intensive patient mix would likely have worse outcomes, even if nothing else differed. In this evaluation report, we also use risk adjustment to analyze outcomes. All measures used to estimate the impact of the model in this evaluation report were risk-adjusted for demographic factors, prior health conditions based on hierarchical condition category (HCC) indicators, measures of prior care use, and provider characteristics. See <b>Appendix C</b> for more details.
Surgical Episode	An episode with an MS-DRG or HCPCS code within one of the four surgical CESLGs: <i>cardiac procedures, gastrointestinal surgery, orthopedics, and spinal procedures</i> . See <b>Appendix B</b> for a complete list of MS-DRGs, HCPCS codes, and clinical episodes.
Target Price	The benchmark price with the CMS discount (2% or 3%) applied for each combination of episode initiator and clinical episode. Used to determine whether participants are eligible for NPRA or are required to pay a repayment amount to CMS.
Target Price Baseline Period	The period of time referenced for calculation of historical payments used for target prices. For Model Years 1 and 2, the baseline period spans 4 years, from January 1, 2013, through December 31, 2016. For Model Year 3, the baseline period spans 4 years, from October 1, 2014, through September 30, 2018. For Model Year 4, the baseline period spans 4 years, from October 1, 2015, to September 30, 2019.
Underserved Populations	As defined by the Department of Health and Human Services (HHS), underserved populations are populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders, and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.
Unique Participant	A unique entity that entered into one or more participation agreements with CMS.

**Exhibit A.2: Acronym List**

Acronym	Definition
ACH	Acute Care Hospital
ACO	Accountable Care Organization
ACO REACH	ACO Realizing Equity, Access, and Community Health Model
AM-PAC	Activity Measure for Post-Acute Care
APM	Alternative Payment Model
ASC	Ambulatory Surgical Center
BPCI	Bundled Payments for Care Improvement
CBSA	Core-Based Statistical Area
CCN	CMS Certification Number
CE	Clinical Episode
CEC	Comprehensive End-Stage Renal Disease (ESRD) Care Model
CESLG	Clinical Episode Service Line Group
CI	Confidence Interval
CIN	Clinically Integrated Network
CJR Model	Comprehensive Care for Joint Replacement Model
CKCC	Comprehensive Kidney Care Contracting
CMMI	Center for Medicare & Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
COPD	Chronic Obstructive Pulmonary Disease
COVID-19 PHE	Coronavirus Disease 2019 Public Health Emergency
CQS	Composite Quality Score
DiD	Difference-in-Differences
DiDiD	Difference-in-Difference-in-Differences
DSH	Disproportionate Share Hospital
ED	Emergency Department
EHR	Electronic Health Record
ESRD	End-Stage Renal Disease
FFS	Fee-for-Service
GPDC	Global and Professional Direct Contracting Model
HCC	Hierarchical Condition Category
HCPCS	Healthcare Common Procedure Coding System
HE	Hybrid Episode
HH	Home Health
HHA	Home Health Agency
HHS	Department of Health and Human Services
ICD-9	International Classification of Diseases, Ninth Revision
ICD-10	International Classification of Diseases, Tenth Revision
IP	Inpatient
IPPS	Inpatient Prospective Payment System

Acronym	Definition
IRF	Inpatient Rehabilitation Facility
ITT	Intention to Treat
KCC	Kidney Care Choices Model
KII	Key Informant Interview
LCI	Lower Confidence Interval
LOS	Length of Stay
LTCH	Long-Term Care Hospital
MBSF	Master Beneficiary Summary File
MDM	CMS Master Data Management
MIPS	Merit-based Incentive Payment System
MS-DRG	Medicare Severity-Diagnosis Related Group
MSSP	Medicare Shared Savings Program
MY	Model Year
NPI	National Provider Identifier
NPRA	Net Payment Reconciliation Amount
NQF	National Quality Forum
OP	Outpatient
PAC	Post-Acute Care
PCP	Primary Care Physician
PDP	Post-Discharge Period
PECOS	Provider Enrollment, Chain, and Ownership System
PGP	Physician Group Practice
POS	Provider of Service
pp	Percentage Point
Pre-Op	Preoperative
PT	Physical Therapy
QPP	Quality Payment Program
RAPT	Risk Assessment and Prediction Tool
RIF	Research Identifiable Files
RTI	Research Triangle Institute
SDOH	Social Determinants of Health
SNF	Skilled Nursing Facility
THA	Total Hip Arthroplasty
TKA	Total Knee Arthroplasty
TIN	Taxpayer Identification Number
UCI	Upper Confidence Interval
VTAPM	Vermont All-Payer ACO Model

**Exhibit A.3: Clinical Episode Abbreviation List**

<b>Abbreviation</b>	<b>Clinical Episode</b>
AMI	Acute Myocardial Infarction
Back & Neck	Back and Neck Except Spinal Fusion
CABG	Coronary Artery Bypass Graft
CHF	Congestive Heart Failure
COPD, Bronchitis, & Asthma	Chronic Obstructive Pulmonary Disease, Bronchitis, Asthma
Disorders of the Liver	Disorders of Liver Except Malignancy, Cirrhosis, or Alcoholic Hepatitis
DJRLE	Double Joint Replacement of the Lower Extremity
Femur & Hip/Pelvis Fractures	Fractures of the Femur and Hip or Pelvis
GI Hemorrhage	Gastrointestinal Hemorrhage
GI Obstruction	Gastrointestinal Obstruction
Hip & Femur	Hip and Femur Procedures Except Major Joint
IBD	Inflammatory Bowel Disease
Lower Extremity/Humerus	Lower Extremity and Humerus Procedures Except Hip, Foot, Femur
MJRLE	Major Joint Replacement of the Lower Extremity
MJRUE	Major Joint Replacement of the Upper Extremity
PCI	Percutaneous Coronary Intervention
SPRI	Simple Pneumonia and Respiratory Infections
TAVR	Transcatheter Aortic Valve Replacement
UTI	Urinary Tract Infection



## Appendix B: BPCI Advanced Clinical Episode and Clinical Episode Service Line Group Definitions

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**Exhibit B.1: BPCI Advanced Clinical Episode Types**

Clinical Episode Type	Clinical Episode Service Line Group (CESLG)	Clinical Episode
Medical	Cardiac Care	<ul style="list-style-type: none"> <li>• Acute Myocardial Infarction</li> <li>• Cardiac Arrhythmia</li> <li>• Congestive Heart Failure</li> </ul>
	Gastrointestinal Care	<ul style="list-style-type: none"> <li>• Disorders of Liver Except Malignancy, Cirrhosis, or Alcoholic Hepatitis</li> <li>• Gastrointestinal Hemorrhage</li> <li>• Gastrointestinal Obstruction</li> <li>• Inflammatory Bowel Disease</li> </ul>
	Medical & Critical Care	<ul style="list-style-type: none"> <li>• Cellulitis</li> <li>• Chronic Obstructive Pulmonary Disease, Bronchitis, Asthma</li> <li>• Renal Failure</li> <li>• Sepsis</li> <li>• Simple Pneumonia and Respiratory Infections</li> <li>• Urinary Tract Infection</li> </ul>
	Neurological Care	<ul style="list-style-type: none"> <li>• Seizures</li> <li>• Stroke</li> </ul>
Surgical	Cardiac Procedures	<ul style="list-style-type: none"> <li>• Cardiac Defibrillator (Inpatient)</li> <li>• Cardiac Defibrillator (Outpatient)</li> <li>• Cardiac Valve</li> <li>• Coronary Artery Bypass Graft</li> <li>• Endovascular Cardiac Valve Replacement</li> <li>• Pacemaker</li> <li>• Percutaneous Coronary Intervention (Inpatient)</li> <li>• Percutaneous Coronary Intervention (Outpatient)</li> </ul>
	Gastrointestinal Surgery	<ul style="list-style-type: none"> <li>• Bariatric Surgery</li> <li>• Major Bowel Procedure</li> </ul>
	Orthopedics	<ul style="list-style-type: none"> <li>• Double Joint Replacement of the Lower Extremity</li> <li>• Fractures of the Femur and Hip or Pelvis</li> <li>• Hip and Femur Procedures Except Major Joint</li> <li>• Lower Extremity and Humerus Procedures Except Hip, Foot, Femur</li> <li>• Major Joint Replacement of the Lower Extremity</li> <li>• Major Joint Replacement of the Upper Extremity</li> </ul>
	Spinal Procedures	<ul style="list-style-type: none"> <li>• Back and Neck Except Spinal Fusion (Inpatient)</li> <li>• Back and Neck Except Spinal Fusion (Outpatient)</li> <li>• Spinal Fusion                             <ul style="list-style-type: none"> <li>○ Cervical Spinal Fusion</li> <li>○ Combined Anterior Posterior Spinal Fusion</li> <li>○ Spinal Fusion (Non-Cervical)</li> </ul> </li> </ul>

**Note:** Bariatric surgery, endovascular cardiac valve replacement, inflammatory bowel disease, seizures, and spinal fusion clinical episodes were new for Model Year 3. The spinal fusion clinical episode combines and replaces three clinical episodes that were separate in Model Years 1 and 2: cervical spinal fusion, combined anterior posterior spinal fusion, and spinal fusion (non-cervical). Beginning in Model Year 3, major joint replacement of the lower extremity is a multi-setting clinical episode that can be triggered with either an inpatient or outpatient procedure.

**Source:** Centers for Medicare & Medicaid Services. (2023, October). BPCI Advanced. Retrieved from <https://www.cms.gov/priorities/innovation/innovation-models/bpci-advanced/participant-resources>.

**Exhibit B.2: BPCI Advanced Inpatient Clinical Episodes and Medicare Severity-Diagnosis Related Groups (MS-DRGs), Model Year 4**

Clinical Episode	MS-DRG Trigger Codes							
	1	2	3	4	5	6	7	8
Acute Myocardial Infarction	280	281	282					
Back and Neck Except Spinal Fusion	518	519	520					
Bariatric Surgery	619	620	621					
Cardiac Arrhythmia	308	309	310					
Cardiac Defibrillator (Inpatient)	222	223	224	225	226	227		
Cardiac Valve	216	217	218	219	220	221		
Cellulitis	602	603						
Chronic Obstructive Pulmonary Disease, Bronchitis, Asthma	190	191	192	202	203			
Congestive Heart Failure	291	292	293					
Coronary Artery Bypass Graft	231	232	233	234	235	236		
Disorders of Liver Except Malignancy, Cirrhosis, or Alcoholic Hepatitis	441	442	443					
Double Joint Replacement of the Lower Extremity	461	462						
Endovascular Cardiac Valve Replacement	266	267						
Fractures of the Femur and Hip or Pelvis	533	534	535	536				
Gastrointestinal Hemorrhage	377	378	379					
Gastrointestinal Obstruction	388	389	390					
Hip and Femur Procedures Except Major Joint	480	481	482					
Inflammatory Bowel Disease	385	386	387					
Lower Extremity and Humerus Procedure Except Hip, Foot, Femur	492	493	494					
Major Bowel Procedure	329	330	331					
Major Joint Replacement of the Lower Extremity	469	470	521	522				
Major Joint Replacement of the Upper Extremity	483							
Pacemaker	242	243	244					
Percutaneous Coronary Intervention (Inpatient)	246	247	248	249	250	251		
Renal Failure	682	683	684					
Seizures	100	101						
Sepsis	870	871	872					
Simple Pneumonia and Respiratory Infections	177	178	179	193	194	195		
Spinal Fusion	453	454	455	459	460	471	472	473
Stroke	061	062	063	064	065	066		
Urinary Tract Infection	689	690						

**Note:** Bariatric surgery, endovascular cardiac valve replacement, inflammatory bowel disease, seizures, and spinal fusion clinical episodes were new for Model Year 3. The spinal fusion clinical episode combines and replaces three clinical episodes that were separate clinical episodes in Model Years 1 and 2: cervical spinal fusion, combined anterior posterior spinal fusion, and spinal fusion (non-cervical). Additionally, endovascular cardiac valve replacement episodes are triggered by the corresponding MS-DRG codes and at least one procedure code from Exhibit B.4. Beginning in Model Year 3, major joint replacement of the lower extremity is a multi-setting clinical episode that can be triggered with either an inpatient or outpatient procedure. MS-DRGs 521 and 522 became active October 1, 2020. For a list of trigger HCPCS codes, see Exhibit B.3.

**Source:** Centers for Medicare & Medicaid Services. (2021, September). BPCI Advanced. Retrieved from <https://www.cms.gov/priorities/innovation/media/document/bpci-adv-qualmeas-correlationtables-my5>.

**Exhibit B.3: BPCI Advanced Outpatient Clinical Episodes and Healthcare Common Procedure Coding System (HCPCS) Codes, Model Year 4**

Clinical Episode	HCPCS Trigger Codes												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Back and Neck Except Spinal Fusion	62287	63005	63011	63012	63017	63030	63040	63042	63045	63046	63047	63056	63075
Cardiac Defibrillator (Outpatient)	33249	33262	33263	33264	33270								
Percutaneous Coronary Intervention (Outpatient)	92920	92924	92928	92933	92937	92943	C9600	C9602	C9604	C9607			
Major Joint Replacement of the Lower Extremity	27447	27130											

**Note:** Beginning in Model Year 3, *major joint replacement of the lower extremity* is a multi-setting clinical episode that can be triggered with either an inpatient or outpatient procedure. For a list of trigger MS-DRGs, see Exhibit B.2.

**Source:** Centers for Medicare & Medicaid Services. (2021, September). BPCI Advanced. Retrieved from <https://www.cms.gov/priorities/innovation/media/document/bpci-adv-qualmeas-correlationtables-my5>.

**Exhibit B.4: Procedure Codes for Endovascular Cardiac Valve Replacement, Model Year 4**

Procedure Code	ICD-9/ICD-10
35.05	ICD-9
35.06	ICD-9
02RF37H	ICD-10
02RF37Z	ICD-10
02RF38H	ICD-10
02RF38Z	ICD-10
02RF3JH	ICD-10
02RF3JZ	ICD-10
02RF3KH	ICD-10
02RF3KZ	ICD-10
X2RF332	ICD-10

*Note:* Endovascular cardiac valve replacement episodes are identified by MS-DRGs (see Exhibit B.2) and at least one of these procedure codes.

*Source:* Centers for Medicare and Medicaid Services. (2021, September). BPCI Advanced. Retrieved from <https://www.cms.gov/priorities/innovation/media/document/bpci-adv-qualmeas-correlationtables-my5>.

## Appendix C: Methods

This appendix includes the details on the data and methods used for the analyses in the Fifth Evaluation Report.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

### A. Data Sources (Primary and Secondary)

Exhibit C.1 lists the data sources and their uses for this evaluation report. We used primary data sources to describe the BPCI Advanced patient and participant experiences in the model. We used provider-level data sources to identify and describe BPCI Advanced participating providers and to select comparison providers. We used Medicare claims and enrollment data to construct episodes of care for BPCI Advanced patients and for matched comparison providers. We also used claims to create outcome measures and beneficiary risk factors associated with the outcomes.

**Exhibit C.1: Data Sources Used in the BPCI Advanced Evaluation**

	Dataset Name	Date Range	Dataset Contents	Use
Primary Data Sources	Beneficiary Survey	June and July 2021; June and July 2022	Surveys completed by Medicare beneficiaries or their proxies. Beneficiaries received surveys approximately 90 days after leaving the hospital.	Used to create patient-reported outcome measures such as patient-reported change in functional status, care experiences, and satisfaction with recovery and care received.
	Site Visits	2021–2022	Interview transcripts from virtual site visits that cover a wide range of subjects related to an episode initiator’s or convener’s experience in BPCI Advanced.	Virtual site visits included interviews with key individuals responsible for different aspects of BPCI Advanced implementation and management, including executive and financial leaders, care redesign leaders, care coordination staff, front-line nursing and physician staff who provide direct care for patients in BPCI Advanced, representatives from conveners (when applicable), and, in Model Year 5, beneficiaries treated by BPCI Advanced participants during Model Year 4. During site visits, model participants were asked about BPCI Advanced participation decisions, CESLG selection, the impact of Model Year 4 changes, the impact of the COVID-19 PHE, care transformation and care redesign activities, external provider partnerships, and general successes and challenges in the model. Site visits also provided an opportunity to learn about beneficiary, participant, or market level factors that may influence variation in the effect of the model.



	Dataset Name	Date Range	Dataset Contents	Use
<p><b>Primary Data Sources, Continued</b></p>	<p>Key Informant Interviews (KIIs)</p>	<p>2021–2023</p>	<p>Transcripts from semi-structured telephone interviews conducted with a sample of PGP and hospital episode initiators and conveners on specific topics of interest.</p>	<p>Designed with input from CMS, the first round of KIIs during Model Year 4 elicited information on entry decisions and episode selection for co-located hospital and PGP episode initiators. The second round of Model Year 4 KIIs focused on episode initiators’ and conveners’ perspectives on changes to the model that CMS introduced in Model Year 4.</p> <p>The first round of KIIs during Model Year 5 focused on identifying care redesign strategies that participants use to care for beneficiaries from populations that have been historically underserved, including low-income Medicare beneficiaries, beneficiaries who identify as belonging to one or more racial or ethnic minority group, and beneficiaries who live in rural or underserved areas, among others. The second round of Model Year 5 KIIs focused on strategies that episode initiators use to reduce hospital readmissions.</p> <p>The first round of KIIs during Model Year 6 focused on how Medicare ACO participation impacted participant experience in BPCI Advanced. The second round of Model Year 5 KIIs focused on participant strategies to coordinate with primary care providers.</p>

	Dataset Name	Date Range	Dataset Contents	Use
<b>Provider-Level Secondary Data Sources</b>	Agency for Healthcare Research and Quality (AHRQ) Compendium of U.S. Health Systems, Hospital Linkage File	2018	Data linking hospitals to health systems.	Used to identify whether a hospital is part of a health system.
	AHRQ Compendium of U.S. Health Systems, Group Practice Linkage File	2018	Data linking PGPs to health systems.	Used to identify whether a PGP is part of a health system.
	Area Health Resource File (AHRF)	2015–2018	County-level data on population, environment, geography, health care facilities, and health care professionals.	Used to create baseline hospital and PGP characteristics used in the construction of hospital comparison groups and PGP comparison groups.
	CMS BPCI Advanced Database	2018–2021	Information compiled by CMS on BPCI Advanced participants and their clinical episodes, including participant name, CCN, TIN, location, type (hospital, PGP, other), BPCI Advanced “role,” clinical episode(s), BPCI Advanced participation start and end dates, and contact information.	Used to identify participants, hospital episode initiators, and PGP episode initiators participating in BPCI Advanced and the clinical episodes in which they are participating. Also used to identify participants that retroactively withdrew or applied but did not become a participant or an episode initiator.
	CMS BPCI Advanced Hospital Target Pricing Files	2015–2019	The clinical-episode-specific Model Year 4 preliminary target prices, historical payments, and historical volume for all BPCI Advanced-eligible hospitals.	Used for the hospital efficiency measure, a component of the Model Year 4 preliminary target price, which is also used as a matching variable in hospital comparison group construction. Also used as an indicator of whether historical hospital volume meets the threshold for target price creation to determine which hospitals were eligible to participate in Model Year 4.
	CMS BPCI Advanced Reconciliation Result Files	2018–2021	NPRA and final target prices from the implementation contractor. Contains results for Model Years 1, 2, and 3 Performance Period 1, 2, 3, and 4 True-up 2 and Performance Period 5 True-up 1.	Used Model Year 4 NPRA to calculate net Medicare savings due to BPCI Advanced. Also used for analysis of representation of beneficiaries that have been historically underserved.

	Dataset Name	Date Range	Dataset Contents	Use
<b>Provider-Level Secondary Data Sources, Continued</b>	CMS BPCI Database	2013–2018	Information compiled by CMS on BPCI awardees and their clinical episodes, including awardee name, CCN, TIN, location, type, clinical episode(s), BPCI participation start and end dates, and contact information.	Used to identify hospitals and PGPs that participated in the BPCI Initiative.
	CMS CJR Database	2016–2021	List of hospitals that have ever participated in CJR, dates of participation for CJR hospitals no longer participating, and list of active participants in CJR as of 10/1/2021.	Used to identify hospitals that participated in the CJR Model and to identify PGP episodes at CJR hospitals.
	CMS IPPS Files	2013–2021	Hospital-level file containing provider characteristics such as Medicare days percent, resident-bed ratio, and Disproportionate Share Hospital (DSH) patient percent.	Used for hospital characteristics, risk adjustment, and hospital comparison group construction.
	CMS POS File	2013– 2021	Information on Medicare-approved institutional providers, including provider number, size, ownership, location, and staffing.	Used in hospital comparison group construction, risk adjustment, and for provider locations.
	CMS Research Identifiable File (RIF)	2021	Information on Medicare Shared Savings Program and Next Generation ACO (NGACO) provider-level participation data.	Used to compile Medicare ACO participation data among BPCI Advanced episode initiators.
	Medicare Data on Provider Practice and Specialty (MD-PPAS)	2017–2020	Mapping of physicians (NPI) billing to practices (TINs).	Used to identify physician practice affiliation during the baseline period.

	Dataset Name	Date Range	Dataset Contents	Use
<b>Transaction-Level Secondary Data Sources</b>	The Master Beneficiary Summary File (MBSF)	2013–2021	Beneficiary and enrollment information, including beneficiary unique identifier, address, date of birth/ death, sex, race and ethnicity, age, and Medicare enrollment status.	Used to identify eligibility for episodes of care, beneficiary demographic characteristics, and beneficiary eligibility for inclusion in the denominator for each of the outcome measures.
	Medicare FFS Claims	Jan 2013– Mar 2022	Medicare Part A and B claims.	Used to create all claims-based outcome measures, claims-based matching measures, and prior use risk adjusting covariates. We calculate the number of discharges and procedures by BPCI Advanced, BPCI and non-participating hospitals, BPCI Advanced and BPCI PGPs, and by CBSAs. Also used to identify clinicians, clinician specialties, and hospitals where PGPs had discharges or procedures associated with BPCI Advanced and BPCI PGP episode initiators. Claims also used to identify confirmed cases of COVID-19.
	Medicare Standardized Payments	2013–2021	Medicare standardized payments for 100% Part A and B claims received via the Integrated Data Repository (IDR) from the implementation contractor.	Used to create Medicare standardized payment amounts (Part A and B) and allowed standardized payment outcomes.

## B. Quantitative Analysis

### 1. Impact of BPCI Advanced on Claim-based Outcomes

The evaluation of the model relies on a non-experimental design, which uses a comparison group of non-BPCI Advanced hospitals or PGPs to infer counterfactual outcomes for hospitals or PGPs participating in BPCI Advanced. In this section, we define the outcomes, study population, methodology for creating comparison groups, methodology for related descriptive analyses, and methodology used to estimate the impact of the BPCI Advanced Model.

#### a. Outcomes

We used data from Medicare claims to create payment, utilization of health care services, and quality outcomes, as well as patient characteristics. The following exhibits define these outcomes and characteristics: Exhibit C.2 provides definitions of each patient characteristic variable used in the patient mix and beneficiary race and ethnicity analyses, and Exhibit C.3 provides details about each outcome measure used in our impact analyses and baseline differences analyses.

#### Exhibit C.2: Definition of Characteristics, Patient Mix and Beneficiary Race and Ethnicity

Variable <sup>a</sup>	Definition
Age 80+ Years	Percent of episodes where the patient was 80 years or older as reported in the Master Beneficiary Summary File.
Beneficiary Race and Ethnicity	Percent of episodes where the beneficiary's race and ethnicity were one of the following categories: Asian/Pacific Islander, Black or African American, Hispanic, American Indian/Alaska Native, Other, Non-Hispanic White. Data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.
Male	Percent of episodes where the patient sex was male as reported in the Master Beneficiary Summary File.
Count of HCC Indicators	Average number of HCC comorbidity indicators per patient from diagnostic history during the 6 months prior to the episode start date.
Disabled, No ESRD	Percent of episodes where the patient was disabled but did not have ESRD as reported in the Master Beneficiary Summary File.
HCC Score	The HCC score (or index) was constructed using beneficiary demographics and diagnostic history. Each episode was assigned an HCC score based on the beneficiary's diagnosis information during the 6 months prior to the episode start date, using v22 of CMS's 2019 Risk Score software, and 2016 (ICD-9) and 2019 (ICD-10) diagnosis to chronic condition mappings. For example, the HCC score for an episode that started on July 1, 2021 was constructed using diagnoses from January 1, 2021-June 30, 2021 claims.
Dual Eligibility	Percent of episodes where the patient was dually eligible for Medicare and Medicaid as reported in the Master Beneficiary Summary File.
Prior Home Health Use	Percent of episodes where the patient accessed home health services in the 180 days prior to the beginning of the episode.
Prior Institutional PAC Use	Percent of episodes where the patient accessed institutional PAC services in the 180 days prior to the beginning of the episode.

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

<sup>a</sup> For all variables, the eligible sample was restricted to beneficiaries who: 1) had a complete fee-for-service enrollment history six months prior to the anchor stay or procedure; and 2) had non-missing age and gender data.

**Exhibit C.3: Claims-based Outcome Definitions, Impact Analyses and Analyses of Beneficiaries From Populations That Have Been Historically Underserved**

Domain	Outcome Name	Description	Technical Definition	Eligible Sample
Payment	Total Medicare Part A & B Standardized Allowed Payment Amount	Average total Medicare Part A & B standardized allowed amount during the episode	The sum of Medicare Part A & B payments including beneficiary out-of-pocket amounts for all health care services during the anchor stay/outpatient procedure + 90-day PDP. Standardized Medicare dollars.	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period; 2) had a measurement period that ended on or before March 30,2022; 3) had non-zero anchor hospitalization payments and total Part A and Part B payments. The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.
	Total Medicare Part A & B Standardized Paid Amount	Average total Part A & B amount paid by Medicare, during the episode.	The sum of Medicare payments for all health care services during the anchor stay/ outpatient procedure + 90-day PDP, without beneficiary cost sharing.	Same as Standardized Allowed Payment Amount.
	Medicare Part A SNF Standardized Allowed Amount	Average Medicare Part A standardized allowed amount, for SNF setting.	The sum of Medicare payment and beneficiary out-of-pocket amounts for Part A health care services provided for SNF during the 90-day PDP.	Same as Standardized Allowed Payment Amount.
	Medicare Part A IRF Standardized Allowed Amount	Average Medicare Part A standardized allowed amount, for IRF setting.	The sum of Medicare payment and beneficiary out-of-pocket amounts for Part A health care services provided for IRF during the 90-day PDP.	Same as Standardized Allowed Payment Amount.
	Medicare Part A HHA Standardized Allowed Amount	Average Medicare Part A standardized allowed amount, for HHA setting.	The sum of Medicare payment and beneficiary out-of-pocket amounts for Part A health care services provided for HHA during the 90-day PDP.	Same as Standardized Allowed Payment Amount.



Domain	Outcome Name	Description	Technical Definition	Eligible Sample
Payment, Continued	Medicare Part A Readmissions Standardized Allowed Amount	Average Medicare Part A standardized allowed amount, for readmissions.	The sum of Medicare payment and beneficiary out-of-pocket amounts for Part A health care services provided for readmissions during the 90-day PDP.	Same as Standardized Allowed Payment Amount.
	Medicare Part A Hospice Standardized Allowed Amount	Average Medicare Part A standardized allowed amount, for hospice setting.	The sum of Medicare payment and beneficiary out-of-pocket amounts for Part A health care services provided for hospice during the 90-day PDP.	Same as Standardized Allowed Payment Amount.
Utilization	Discharged to Institutional PAC Setting	The proportion of episodes discharged from the hospital to an institutional PAC setting	Categorical outcome where the first PAC setting was SNF, LTCH, or IRF. Institutional PAC stays are only counted as a first PAC setting if the beneficiary was admitted to SNF, LTCH, or IRF within 5 days of discharge from the hospital.	Same as Standardized Allowed Payment Amount.
	Number of Days in a SNF	Average number of SNF days.	The total number of days of SNF care (not necessarily consecutive) during the 90-day PDP.	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period; 2) had a measurement period that ends on or before March 30, 2022; 3) had non-zero anchor hospitalization payments and total Part A and Part B payments; 4) had at least one SNF day during the 90-day PDP. The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.
	Hospice Use	The proportion of episodes with hospice use within the 90-day PDP	Binary outcome (1= at least one day in hospice during measurement period; 0= no hospice use during measurement period).	Same as Standardized Allowed Payment Amount.

Domain	Outcome Name	Description	Technical Definition	Eligible Sample
Quality	Readmission Rate	The proportion of episodes with one or more readmissions for any condition 90 days after the anchor stay or outpatient procedure	Binary outcome (1= at least one eligible readmission during measurement period; 0= no eligible readmission during measurement period). Eligible readmissions are IPPS claims with any MS-DRG, excluding those with a diagnosis of COVID-19 (indicated with ICD-10 code U071).	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period; 2) had a measurement period that ends on or before March 30, 2022; 3) were discharged from the anchor stay/ outpatient procedure in accordance with medical advice. The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.
	Unplanned Readmission Rate <sup>a</sup>	The proportion of episodes with one or more unplanned, all-cause readmissions for any condition 90 days after the anchor stay or outpatient procedure	Binary outcome (1= at least one eligible readmission during measurement period; 0= no eligible readmission during measurement period). Eligible readmissions are IPPS claims with an MS-DRG not on the list of excluded MS-DRGs for the given clinical episode and excluding those with a diagnosis of COVID-19 (indicated with ICD-10 code U071).	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period; 2) had a measurement period that ends on or before March 30, 2022; 3) were discharged from the anchor stay/ outpatient procedure in accordance with medical advice. The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.

Domain	Outcome Name	Description	Technical Definition	Eligible Sample
Quality, Continued	All-cause Mortality	The proportion of episodes with death from any cause during the anchor stay or procedure, or during the 30-day, 90-day, or 180-day PDP	Binary outcome (1= the beneficiary date of death is within 30 days, 90 days, or 180 days of the anchor end date depending on the measure; 0 if no date of death by the beneficiary within 30 days, 90 days, or 180 days of the anchor end date depending on the measure.	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period or until death; 2) had not received hospice care in the six months prior to admission; 3) had a measurement period that ends on or before March 30, 2022. <sup>b</sup>  The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.
	All-cause Mortality during the 90-day PDP	The proportion of episodes with death from any cause during the 90-day PDP	Binary outcome (1= the beneficiary date of death is within 90 days of the anchor end date; 0 if no date of death by the beneficiary within 90 days of the anchor end date.	Beneficiaries who: 1) maintained FFS Parts A and B enrollment throughout the measurement period or until death; 2) had not received hospice care in the six months prior to admission; 3) had a measurement period that ends on or before March, 30 2022; 4) survived the anchor stay or procedure. The eligible sample was restricted to beneficiaries who: 1) had a complete FFS enrollment history six months prior to the anchor stay or procedure; 2) had non-missing age and sex data; 3) had a reported age of less than 115 years at the time of the episode.

**Note:** Payment amounts adjust for Medicare payment policies to ensure that any differences across time and providers reflect real differences in resource use rather than Medicare payment policies (such as, teaching payments or differential payment updates). Measurement period refers to the period of time relative to the anchor or triggering procedure for which the episode outcome is calculated; either the entire episode period (anchor plus 90-PDP), or other periods of interest (such as, anchor plus 30-PDP, anchor plus 180-PDP, or only the 90-day PDP). Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

- <sup>a</sup> The outcome is based on specifications for the National Quality Forum (NQF) all-cause unplanned readmission measure (NQF measure 1789). Planned admissions are excluded based on the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification System Procedure and Diagnoses codes.
- <sup>b</sup> We define the mortality rate measure to include mortality during both the anchor stay or procedure and the post-discharge period. This is a comprehensive measure of mortality since it includes those who do not survive the anchor stay or procedure. Beneficiaries who do not survive the anchor stay or procedure are not eligible to become a part of the BPCI Advanced Model under the model’s reconciliation rules. Other outcomes analyzed exclude episodes in which the beneficiary did not survive the anchor stay or procedure.

## ***b. Study Samples***

In this section we define the sample used in our evaluation of the BPCI Advanced model. Decisions were made to determine various aspects of our sample, including but not limited to, the identification of the BPCI Advanced group, comparison group, and defining the episode of care.

### ***BPCI Advanced Study Population***

We defined the BPCI Advanced hospital *treatment* group as hospital episode initiators that participated in at least one clinical episode in Model Year 4 and met other necessary requirements to be included in our evaluation.<sup>1,2</sup> We limited the impact analyses to the following 26 clinical episodes we regarded as having sufficient sample size to evaluate:<sup>3</sup>

- Acute myocardial infarction (AMI)
- Back & neck except spinal fusion, outpatient
- Cardiac arrhythmia
- Cardiac defibrillator, outpatient
- Cellulitis
- Chronic obstructive pulmonary disease (COPD), bronchitis, asthma
- Congestive heart failure (CHF)
- Coronary artery bypass graft (CABG)
- Disorders of liver except malignancy, cirrhosis or alcoholic hepatitis
- Fractures of the femur and hip or pelvis
- Gastrointestinal (GI) hemorrhage
- Gastrointestinal obstruction
- Hip and femur procedures except major joint
- Lower extremity and humerus procedure except hip, foot, femur
- Major bowel procedure
- Major joint replacement of the lower extremity (MJRLE)
- Pacemaker

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<sup>1</sup> To participate in the model for a given clinical episode in Model Year 4, hospitals had to have initiated more than 40 episodes in the clinical episode during the Model Year 4 target price baseline (October 2015 to September 2019). The following entities were also excluded: IPPS-excluded hospital, IPPS-exempt cancer hospital, inpatient psychiatric hospital, critical access hospital, located in Maryland, participating in the Pennsylvania Rural Health Model or the Rural Community Health Demonstration.

<sup>2</sup> In order to be included in our evaluation sample, hospitals had to have existed during the evaluation baseline period for at least one year and initiated more than 40 episodes in the clinical episode between January 1, 2015 and September 30, 2018. Hospitals that are based in a territory of the U.S., were missing data for characteristics used in matching, or were not located in a CBSA were also excluded.

<sup>3</sup> Eligible participants selected which CESLGs to participate in; however, participants may have participated in all or some clinical episodes within a CESLG due to episode volume requirements of the model.

- Percutaneous coronary intervention (PCI), inpatient
- PCI, outpatient
- Renal failure
- Seizures
- Sepsis
- Simple pneumonia and respiratory infections (SPRI)
- Spinal fusion
- Stroke
- Urinary tract infection (UTI)

We defined the BPCI Advanced PGP *treatment* group as PGP episode initiators that participated in at least one clinical episode in Model Year 4 and met other necessary requirements to be included in our evaluation.<sup>4</sup> We limited the impact analyses to the following 18 clinical episodes we regarded as having sufficient sample size to evaluate:

- AMI
- Back & neck except spinal fusion, outpatient
- Cardiac arrhythmia
- Cellulitis
- COPD, bronchitis, asthma
- CHF
- GI hemorrhage
- GI obstruction
- Hip & femur procedures except major joint
- MJRLE
- Major joint replacement of the upper extremity (MJRUE)
- Renal failure
- Seizures
- Sepsis
- SPRI
- Spinal fusion

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<sup>4</sup> We used the CMS BPCI Advanced database to identify BPCI Advanced PGP episode initiators. We imposed a minimum episode volume threshold of 10 episodes for the average annual volume within a clinical episode across the baseline period. Additionally, we excluded a small number of PGPs that operated in a territory of the U.S. (non-state Exclusion), had more than 75% of their baseline episodes at a hospital that was ineligible to participate in the BPCI Advanced model, were missing data for characteristics used in matching, and/or were not located in a CBSA.

- Stroke
- UTI

The BPCI Advanced Model did not require participating PGPs to use TINs that existed prior to the beginning of the model or provide billing data of previous, or “legacy”, TINs they used. Some PGPs created new TINs when they started participating in the BPCI Advanced model and thus have no baseline claims data available. Historical baseline data is needed to identify a matched comparison PGP and implement the evaluation’s DiD design. To address this limitation, we assigned legacy TINs to PGPs participating under a new TIN based on NPI billing patterns during the baseline period. Specifically, we used Part B Medicare claims and MD-PPAS data to identify the NPIs billing to newly created TINs and the legacy TINs prior to the model. We re-aggregated newly formed TINs by combining the new TIN with the associated legacy TIN from the PGP that existed both in the baseline and intervention. We assigned legacy TINs to participating PGPs where there was sufficient overlap of NPIs and other practice characteristics (74 PGPs across Model Years 1-4).<sup>5</sup> For cases where we could not identify legacy TINs, we removed the PGP episode initiator from the sample (107 PGPs across Model Years 1-4).

### *Comparison Group Selection*

The DiD approach compares the change in outcomes for those *treated* by BPCI Advanced participants to those of a group of comparable providers not treated by the model. This estimation strategy relies on the comparison group serving as a counterfactual of the change in outcomes in the absence of the model.

We created a comparison group for each clinical episode and separately for hospitals and PGPs, allowing us to infer outcomes for BPCI Advanced participants had the model not existed. In Model Year 4, participants chose CESLGs to participate in, where each CESLG was a set of clinical episodes. We constructed our comparison groups at the clinical episode level for a variety of reasons. Matching by clinical episode allows us to best account for provider differences as the care provider for each clinical episode may not be encapsulated, or sensitive enough to be accounted for in a propensity score model, when aggregated to a higher-level, such as the CESLG. Furthermore, the BPCI Advanced model calculates target prices for each provider and clinical episode, signifying the importance of the clinical episode in predicting the average expenditure of an episode of care. This distinction is especially important for PGPs as some of them specialize in a small number of clinical episodes and, therefore, are not representative of all clinical episodes within a CESLG.

### *Hospital Comparison Groups*

Comparison hospitals were selected for each clinical episode. To do this, we first identified a sample of potential comparison hospitals by applying a series of exclusions to the universe of hospitals. Second, we identified hospital and market characteristics to assess balance of the matched comparison group. Lastly, each BPCI Advanced hospital was matched to an eligible comparison hospital using propensity score matching, a statistical matching technique, to minimize

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<sup>5</sup> For example, suppose PGP TIN A decided to create a new TIN that focuses on a particular clinical episode or specialty (TIN B). By reviewing the NPIs that bill through TIN B who had previously billed to TIN A along with other practice characteristics, we can identify that TIN A is the legacy TIN for TIN B, and then assign the episode occurring during the intervention from TIN B to TIN A.



the differences in the distributions of characteristics between BPCI Advanced and comparison hospitals. A detailed description of each of these steps is provided below.

***Step 1: Create pool of potential comparison hospitals for each clinical episode***

We identified a sample of eligible comparison hospitals appropriate for our potential comparison pool by applying exclusion criteria to the universe of hospitals:

- **Initial Hospital Pool.**
  - By construction, our initial comparison pool excluded hospitals that were not eligible to participate in BPCI Advanced in Model Year 4 for the given clinical episode or did not meet other necessary requirements that were needed to be evaluated.<sup>6</sup>
- **Retroactive withdrawal.** Excluded BPCI Advanced hospitals that retroactively withdrew from any clinical episode within the CESLG of the clinical episode being matched (Hospital Exclusion 1).
- **Participation in CESLG.** Excluded hospitals that participated in the BPCI Advanced Model in any clinical episode within the CESLG of the matched clinical episode in Model Years 1-6. This exclusion limits within-hospital spillover effects (Hospital Exclusion 2). In addition, we excluded hospitals that *ever* participated in CJR from the Orthopedics CESLG, regardless if the hospital was participating in CJR in Model Year 4.
- **Baseline contamination.** Excluded non-participating hospitals if their contaminated share of episodes within the clinical episode exceeds a 15% threshold during the baseline period. This exclusion limits within-hospital spillover effects (Hospital Exclusion 3).<sup>7</sup> For hospitals, we deemed an episode contaminated if:
  - The hospitalization was associated with a BPCI Advanced PGP, or
  - The beneficiary was admitted to a BPCI Advanced hospital or was associated with a BPCI Advanced PGP within 90 days before or after admission.
- **Market contamination.** Excluded non-participating hospitals that were located in markets with greater than 50% baseline market share by BPCI Advanced episode initiators across all clinical episodes participating in Model Years 1-4. This exclusion limits market spillover effects (Hospital Exclusion 4).
- **Non-US state.** Excluded hospitals that operated in a territory of the United States (Hospital Exclusion 5).

<sup>6</sup> To be eligible to participate in BPCI Advanced Model Year 4 for a given clinical episode, hospitals had to be an acute care hospital and had to have more than 40 episodes in the Model Year 4 target price baseline (October 2015 to September 2019) and could not be an IPPS-exempt cancer hospital, inpatient psychiatric hospital, critical access hospital, located in Maryland, participating in the Pennsylvania Rural Health Model or the Rural Community Health Demonstration. We also excluded hospitals not meeting other necessary requirements: having more than 40 episodes in the evaluation baseline (Jan 2015 to Sept 2018), having at least one intervention episode (Jan 2021 to Dec 2021), and located in a CBSA.

<sup>7</sup> In order to have a comprehensive measure of contamination, this and related contamination measures were calculated using 90-day episodes of care for all eligible discharges.

- **Missing data.** Excluded hospitals with missing data on matching characteristics (Hospital Exclusion 6).

For all exclusion steps and matching, we used episodes from January 2015 through September 2018 (baseline). To check if hospitals had missing data, we used intervention episodes from January 2021 to December 2021. The number of hospitals excluded in each step (sequentially) for each clinical episode is presented in Exhibit C.4.

**Exhibit C.4: Number of Hospitals Excluded From the Comparison Pool by Exclusion and Clinical Episode**

Clinical Episode	Initial Hospital Comparison Pool	Number of Hospitals Excluded						Remaining Comparison Pool
		Exclusion 1. Retroactive Withdrawal	Exclusion 2. Participation in CESLG	Exclusion 3. Baseline Contamination	Exclusion 4. Market Contamination	Exclusion 5. Non-US State	Exclusion 6. Missing Data	
AMI	1,551	122	270	216	34	2	0	907
Back & Neck	889	57	61	97	77	0	0	597
Cardiac Arrhythmia	1,914	136	290	237	60	1	0	1,190
Cardiac Defibrillator	946	108	143	38	69	1	0	587
Cellulitis	1,699	136	267	148	55	3	0	1,090
COPD, Bronchitis, & Asthma	2,114	164	286	213	55	9	0	1,387
CHF	2,250	149	301	367	45	3	0	1,385
CABG	898	109	145	54	62	1	0	527
Disorders of the Liver	417	23	43	63	13	0	0	267
Femur & Hip/Pelvis Fractures	735	58	290	56	16	0	0	303
GI Hemorrhage	1,960	84	186	350	76	1	0	1,263
GI Obstruction	1,701	78	167	212	94	1	0	1,149
Hip & Femur Procedures	1,908	135	630	315	55	1	0	772
Lower Extremity/Humerus	765	70	275	90	33	0	0	297
Major Bowel Procedure	1,693	55	61	166	154	2	0	1,255
MJRLE	1,874	121	333	399	85	4	1	931
Pacemaker	1,192	122	180	167	56	0	0	667
PCI (Inpatient)	1,506	141	203	188	91	2	0	881
PCI (Outpatient)	1,273	128	189	57	110	3	0	786
Renal Failure	1,856	154	284	218	53	1	0	1,146
Seizures	998	50	126	142	42	0	0	638
Sepsis	2,155	163	294	240	61	2	0	1,395
SPRI	2,208	171	293	210	66	9	0	1,459
Spinal Fusion	1,290	70	87	113	144	3	0	873
Stroke	1,815	79	173	244	75	2	0	1,242
UTI	1,989	158	281	190	62	4	0	1,294

**Note:** Counts of excluded hospitals are from sequentially applying the listed exclusions. For two clinical episodes, Disorders of the Liver and Femur & Hip/Pelvis Fractures, comparison hospitals were dropped from the propensity score model due to perfect prediction of a matching variable; these dropped hospitals are not listed as an exclusion in the above table but are removed from the Remaining Comparison Pool column. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays/procedures that began January 1, 2015, and ended on or before September 30, 2018 (baseline period).

## ***Step 2: Select Characteristics for Balancing***

We conducted descriptive analyses to identify hospital characteristics to be considered for balancing the BPCI Advanced and the matched hospital comparison groups. The characteristics we considered were:

- Levels and trends for key outcomes—total payments, PAC utilization, ED visits, readmissions, and mortality—for each BPCI Advanced clinical episode during the baseline (January 2015 through September 2018).<sup>8</sup>
- The hospital efficiency measure from the BPCI Advanced Model Year 4 preliminary target prices, which accounts for the clinical episode specific spending of a hospital relative to the average hospital, adjusted for patient and peer group influences on spending.
- Characteristics defined for the peer group in the BPCI Advanced pricing methodology: urban or rural location, safety net status, census division, and bed count.
- Provider-level characteristics selected from public data sources or created from claims, for example: ownership type (for profit, not for profit, government), share of patients enrolled in Medicare, relative share of dual-eligible patients, and episode volume.
- Market characteristics from the Area Health Resources Files or the American Community Survey; examples include county-level demographics (such as, population), county-level socioeconomic indicators (such as, household income), and market variables of competition (such as, Herfindahl index or primary care physicians per capita).

From this list of characteristics, we chose a subset of covariates for the matching procedure for each hospital comparison group. The measures included in the hospital matching models for all clinical episodes are listed in Exhibit C.5. Some covariates varied across clinical episodes according to inpatient and outpatient setting. We included hospitals with outpatient surgery departments as a matching variable for major joint replacement of the lower extremity, which is a multi-setting clinical episode. Additionally, because outpatient clinical episodes have such low use of PAC, we did not include any PAC use measures in the matching model for hospitals for these outpatient clinical episodes. Definitions of these measures can be found in **Appendix F**.

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<sup>8</sup> Select outcome measures were included as characteristics for matching because BPCI Advanced applicants received baseline data that was used to inform their decision to participate in the model.

**Exhibit C.5: Variables Used for Hospital Matching Models**

	Measure
<b>Hospital</b>	Average Case Weight of Discharges
	DSH Patient Percentage
	Efficiency Measure
	Episode Volume
	Hospital Market Share
	Outpatient Surgery Department*
	Ownership – Non-Profit, For-Profit, Government
	Part of Health System
	Resident-Bed Ratio
	Urban/Rural Location
<b>Market</b>	IRF in Market
	SNF Beds per 10,000 People in Market
<b>Baseline Outcomes</b>	Institutional PAC use – Average**
	Institutional PAC use – Change (Linear Trend)**
	Standardized Part A&B Payment – Average
	Standardized Part A&B Payment – Change (Linear Trend)

*Note:* Please refer to **Appendix A** for the definitions of acronyms used within this exhibit. \*Matching variable only used for multi-setting clinical episode (major joint replacement of the lower extremity). \*\*Matching variable not used for outpatient clinical episodes.

**Step 3: Apply Matching Method**

For each clinical episode, we implemented a one-to-one nearest neighbor matching procedure, without replacement, of potential comparison hospitals using a propensity score. A propensity score is defined as the predictive probability of receiving the “treatment” (BPCI Advanced participation), conditional on a set of characteristics. This probability was estimated using a logistic regression model that included the list of characteristics selected in Step 2.

To improve initial results of our parallel trends tests and the episode volume balance of BPCI Advanced and comparison groups, we added a condition to the matching model that hospitals match within discrete strata based on episode volume. To implement this, three volume groupings were created for each clinical episode that are based on the percentile ranges of baseline episode volume for all hospitals (BPCI Advanced and potential comparison pool) included in the matching model: (i) below the 75<sup>th</sup> percentile; (ii) at or above the 75<sup>th</sup> and below the 90<sup>th</sup> percentile; (iii) at or above the 90<sup>th</sup> percentile. BPCI Advanced hospitals within each volume stratum were restrained to match to a comparison provider of the same stratum. This condition increased the likelihood of each one-to-one match to consist of providers with similar episode volume, and it removed the possibility of high-volume hospitals to matching to low-volume hospitals.

Each BPCI Advanced hospital was matched with one comparison hospital with a log-odds propensity score absolute difference below a selected caliper. Calipers were based on the standard deviation of the estimated log-odds propensity score and were assessed using various thresholds to determine the trade-offs between the improved quality of our matches and the

number of BPCI Advanced hospitals removed from the sample. BPCI Advanced hospital episode initiators with no potential matches inside the selected caliper were excluded from the sample.

Each comparison group was constructed by selecting a caliper that satisfied the following criteria of match quality:

- Average standardized mean difference of all matching covariates must be below 0.1.
- The p-value of the Kolmogorov-Smirnov test must be greater than 0.1.
- No single matching covariate could have a standardized mean difference of greater than 0.25.<sup>9</sup>

We also assessed and used a variety of other criteria, including minimizing the difference in the baseline total payments (means and distributions), the distributions and differences in estimated propensity scores, and the average standardized mean difference in matching covariates between BPCI Advanced hospitals and the comparison group. Other criteria included maximizing the number of BPCI Advanced hospitals and episode volume retained and analyzing the parallel trends tests and risk-adjusted baseline trends for key outcome variables. (See **Appendix F** for standardized mean differences before and after matching. See **Appendix K** for results of parallel trends testing.)

This entire process, including using calipers and not evaluating all 34 clinical episodes, resulted in including many but not all BPCI Advanced intervention episodes in our impact analyses. For hospitals, approximately 85% of episodes in medical clinical episodes and approximately 91% of episodes in surgical clinical episodes were included in our evaluation sample (Exhibit C.6).<sup>10</sup>

#### Exhibit C.6: Percentage of BPCI Advanced Intervention Episodes Included in Evaluation

Clinical Episode Type	Total BPCI Advanced Intervention Episodes	Percentage of Total Intervention BPCI Advanced Episodes in Evaluated CEs (%)	Percentage of BPCI Advanced Intervention Episodes in Evaluated CEs Included After Matching (%)	Percentage of Total BPCI Advanced Intervention Episodes Included After Matching (%)
All CEs	502,135	98.0	85.5	83.7
Medical	402,270	99.8	86.3	86.1
Medical Hospital	318,150	100.0	85.3	85.3
Medical PGP	84,120	99.2	89.9	89.2
Surgical	99,865	90.7	81.8	74.2
Surgical Hospital	51,250	92.7	98.2	91.1
Surgical PGP	48,615	88.6	63.7	56.4
All Hospital CEs	369,400	99.0	87.0	86.1
All PGP CEs	132,735	95.3	81.0	77.2

**Note:** Episode counts were not restricted based on the availability of variables used in risk adjustment. To avoid double-counting episodes, episodes were assigned to BPCI Advanced PGPs if a given episode was included in both the

<sup>9</sup> Four clinical episodes did not meet this criteria: lower extremity and humerus procedure except hip, foot, femur; back and neck except spinal fusion – outpatient; cardiac defibrillator – outpatient; and coronary artery bypass graft surgery. Each of these clinical episodes had one matching covariate with an SMD over 0.25.

<sup>10</sup> See **Appendix L** Section B for sensitivity analyses that examine whether the hospital results from our impact analyses are generalizable to all BPCI Advanced hospital episode initiators.

samples for hospital and PGP episode initiators. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays/ procedures that began January 1, 2021 and ended on or before December 31, 2021 (intervention period) for BPCI Advanced episode initiators.

### *PGP Comparison Groups*

We selected comparison PGPs for each clinical episode in a manner that differed slightly from our approach for constructing hospital comparison groups. First, we identified a sample of eligible PGPs (using TINs as the unit of observation) from the universe of PGPs after applying exclusion criteria and constructing episodes for these PGPs. Second, we ran various propensity score matching models for each clinical episode. Third, we selected calipers for each matching model. Lastly, we compared metrics of the selected caliper of each matching model and chose the model we thought optimal for each clinical episode.

#### ***Step 1: Create Pool of Potential Comparison PGPs for Each Clinical Episode***

We identified a sample of potential comparison PGPs by applying exclusion criteria to the universe of PGPs:

- **Initial PGP Pool.**
  - By construction, our initial comparison pool excluded BPCI Advanced PGPs participating in the clinical episode in Model Year 4 and PGPs that were not eligible to participate in BPCI Advanced in the given clinical episode or did not meet other necessary requirements that were needed to be evaluated.<sup>11, 12</sup> We narrowed the pool by imposing a minimum episode volume threshold and removing PGPs that were dissimilar to the BPCI Advanced PGPs participating in Model Year 4.
- **Retroactive withdrawal.** Excluded PGPs that retroactively withdrew from the clinical episode (PGP Exclusion 1).
- **Clinical episode participation.** Excluded BPCI Advanced PGPs that participated in BPCI Advanced in any clinical episode in Model Years 1, 2, 3 and/or 4 (PGP Exclusion 2).
- **Baseline contamination.** Excluded non-participating PGPs with a contaminated share of baseline episodes within the clinical episode exceeding a 15% threshold (PGP Exclusion 3). For PGPs, we deemed an episode contaminated if:
  - The discharge itself was associated with a BPCI Advanced episode initiator, or
  - The beneficiary was admitted to a BPCI Advanced hospital or was associated with a BPCI Advanced PGP 90 days before or after admission.

<sup>11</sup> The minimum threshold we imposed was 10 episodes for the minimum average annual volume within a clinical episode across the evaluation baseline period. PGPs also had to have an episode in the baseline and intervention period to be included in the evaluation.

<sup>12</sup> We excluded PGPs that had episode volume, number of NPIs billing to the TIN, or average total episode payments that were below the 1st percentile of the BPCI Advanced PGPs or were greater than 1 standard deviation above the maximum value for the BPCI Advanced PGPs.

- **Episode contamination.** Excluded non-participating PGPs that had greater than 5% of their Model Year 1, 2, 3, and 4 episode volume where the attending or operating NPI was associated with a BPCI Advanced episode initiator (PGP Exclusion 4).<sup>13</sup>
- **Market contamination.** Excluded non-participating PGPs that were located in markets with greater than 50% or 75% market share (threshold varied by clinical episode) by BPCI Advanced episode initiators across all clinical episodes. This exclusion limits market spillover effects (PGP Exclusion 5).<sup>14</sup>
- **Ineligible hospitals.** Excluded PGPs who had more than 75% of episodes in the baseline period, within the clinical episode, at hospitals not eligible to participate in the BPCI Advanced Model (PGP Exclusion 6).
- **Non-U.S. state.** Excluded PGPs that operated in a territory of the United States (PGP Exclusion 7).
- **Missing data.** Excluded PGPs with missing information on characteristics we used for matching or not located in a core-based statistical area (CBSA) code (PGP Exclusion 8).

For all exclusion steps and matching, we used episodes from January 2015 through December 2018 (baseline). To check if PGPs had missing data, we also used episodes from the intervention period (January 2021 through December 2021). The number of PGPs excluded in each step (sequentially) for each clinical episode is presented in Exhibit C.7.

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<sup>13</sup> This additional component of PGP Exclusion 4, episode contamination, does not have an equivalent exclusion in the construction of hospital comparison groups.

<sup>14</sup> For MJRLE, we also excluded PGPs that had 100% of their volume at hospitals that had ever participated in CJR.



**Exhibit C.7: Number of PGPs Excluded From Comparison Pool by Reason and Clinical Episode**

Clinical Episode	Eligible TIN Comparison Pool	Number of PGPs (TINs) Excluded								Remaining Comparison Pool
		Exclusion 1. Retroactive Withdrawal	Exclusion 2. Clinical Episode Participation	Exclusion 3. Baseline Contamination	Exclusion 4. Episode Contamination	Exclusion 5. Market Contamination	Exclusion 6. Ineligible PGPs	Exclusion 7. Non-U.S. state	Exclusion 8. Missing Data	
AMI	1,331	19	76	479	32	26	5	2	0	692
Back & Neck	805	11	120	87	0	70	0	0	0	517
Cardiac Arrhythmia	1,926	22	91	626	45	46	0	1	1	1,094
Cellulitis	1,372	17	64	409	13	34	2	1	11	820
COPD, Bronchitis, & Asthma	2,709	22	77	1,064	11	68	1	1	0	1,465
CHF	3,442	24	100	1,534	31	60	0	1	0	1,692
GI Hemorrhage	1,928	26	84	609	63	1	1	1	20	1,123
GI Obstruction	1,161	21	74	237	13	50	2	0	2	762
Hip & Femur Procedures	1,532	40	154	292	225	50	6	0	18	746
MJRLE	2,336	35	228	305	249	346	5	4	0	1,164
MJRUE	717	14	142	68	11	47	1	0	0	434
Renal Failure	2,170	22	79	858	30	38	2	0	2	1,139
Seizures	742	9	49	188	8	20	3	0	1	464
Sepsis	4,334	23	94	1,946	101	1	1	1	50	2,117
SPRI	3,136	23	87	1,207	45	87	0	1	42	1,644
Spinal Fusion	1,257	22	164	194	27	98	0	2	0	750
Stroke	1,811	24	84	527	39	74	1	2	0	1,060
UTI	2,119	20	77	774	23	60	2	0	2	1,161

**Note:** Counts of excluded PGPs are from sequentially applying the listed exclusions. For two clinical episodes, Cellulitis and Hip & Femur Procedures, one comparison PGP was dropped from the propensity score model due to perfect prediction of a matching variable; this PGP is not listed as an exclusion in the above table but is removed from the Remaining Comparison Pool column. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays/procedures that began April 1, 2013, and ended on or before December 31, 2017 (baseline period) and episodes with anchor stays/procedures that began January 1, 2020, and ended on or before December 31, 2020 (intervention period) for BPCI Advanced episode initiators and matched comparison providers.

## ***Step 2: Exploring Matching Models***

We developed and ran several matching models for each clinical episode due to difficulty identifying balanced comparison groups for PGPs. We then selected the matching model for each clinical episode after a comprehensive review of the comparison group statistics of each model, as discussed in **Step 4**. All models ran were based on a one-to-one nearest neighbor matching procedure, without replacement, of potential comparison PGPs using a propensity score. For each clinical episode, each BPCI Advanced PGP was matched with one comparison PGP with a log-odds propensity score absolute difference below a selected caliper. The matching models ran differed by four components: matching covariate list, market contamination threshold exclusion, inclusion of conditional volume stratifications, and inclusion of conditional payment trend stratifications.

### *Matching Covariate List Selection*

We ran various models for each clinical episode that differed in the covariate list used. We considered a variety of characteristics for balancing the BPCI Advanced PGPs and the matched comparison groups. The characteristics we considered were:

- Levels and trends for key outcomes—total payments, PAC utilization, ED visits, readmissions, and mortality—for each BPCI Advanced clinical episode during the baseline (January 2015 - September 2018).
- Provider-level characteristics selected from public data sources or created from claims, for example: relative share of dual-eligible patients, episode volume, number of hospitals where a PGP is actively billing, and number of markets where PGP is actively billing.
- Market characteristics from the Area Health Resources Files or the American Community Survey; examples include population, household income, and measures of market competition. We assigned each PGP to a market based on the plurality of baseline episode volume of the clinical episode being matched.

We chose a subset of covariates from these characteristics and identified two covariate lists. Emphasis was put on keeping the matching specification parsimonious and avoiding matching covariates that appeared to be sparse or overly noisy in the data for a given clinical episode. The two lists of matching covariates included in the PGP matching models include lists with 23 and 13 characteristics. The shorter list is a subset of the larger list. Both lists are shown in Exhibit C.8.

**Exhibit C.8: Variables Used for PGP Matching Models**

	List 1 Measures	List 2 Measures
<b>PGP</b>	Operating at Three or More Hospitals	Operating at Three or More Hospitals
	Operating in Multiple Markets	Operating in Multiple Markets
	Episode Volume	Episode Volume
	Share of Dual-eligible Beneficiaries	Share of Dual-eligible Beneficiaries
	Share of Female Beneficiaries	Share of Female Beneficiaries
	Share of Black or African American Beneficiaries <sup>a</sup>	Share of Black or African American Beneficiaries <sup>a</sup>
	Share of Beneficiaries Over 80 Years Old	Share of Beneficiaries Over 80 Years Old
	Share of Disabled Beneficiaries (Excluding ESRD)	Share of Disabled Beneficiaries (Excluding ESRD)
	Average HCC Score	Average HCC Score
	Urban/Rural Location	
	Part of Health System	
	Number of NPIs	
	Share of Non-Hispanic White Beneficiaries <sup>a</sup>	
	Share of Episodes with IP Stay in 180 Days Prior	
<b>Baseline Outcomes</b>	Standardized Part A&B Payment – Average	Standardized Part A&B Payment – Average
	Standardized Part A&B Payment – Change (Linear Trend)	Standardized Part A&B Payment – Change (Linear Trend)
	Rate of Institutional PAC use – Average	Rate of Institutional PAC use – Average
	Rate of Institutional PAC use – Change (Linear Trend)	Rate of Institutional PAC use – Change (Linear Trend)
	Mortality Rate 90-Day – Average	
	Mortality Rate 90-Day – Change (Linear Trend)	
	Readmission Rate 90-Day – Average	
	Readmission Rate 90-Day – Change (Linear Trend)	
	Population	
	Mortality Rate 90-Day – Change (Linear Trend)	
<b>Market</b>	Readmission Rate 90-Day – Average	
	Readmission Rate 90-Day – Change (Linear Trend)	
	Population	

*Note:* All Share variables were calculated for the patient populations for a given clinical episode. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

<sup>a</sup> Data on race and ethnicity come from the Medicare enrollment database and uses data from the Social Security Administration

*Market Contamination Threshold Exclusion*

For all clinical episodes, we ran matching models with varying contamination threshold exclusions applied to the eligible comparison pool. As noted in Step 1, we excluded non-participating PGPs that were in markets with greater than either 50% or 75% market share by BPCI Advanced episode initiators. While being able to limit potential market spillover effects of BPCI Advanced is important, using a higher contamination threshold allowed more eligible comparison PGPs in our matching models.

### *Volume Stratification Matching*

For all clinical episodes with sufficient volume, we explored the impact of volume stratification on the matching mode. We added a condition to the matching model that PGPs match within strata based on episode volume. To implement this, three volume groupings were created for each clinical episode that are based on percentile ranges of the baseline episode volumes of all PGPs (BPCI Advanced and potential comparison pool) in the matching model: (i) below the 75<sup>th</sup> percentile; (ii) at or above the 75<sup>th</sup> and below the 90<sup>th</sup> percentile; (iii) at or above the 90<sup>th</sup> percentile. BPCI Advanced providers within each stratum were restrained to match to a comparison provider of the same volume stratum.

### *Payment Trend Stratification Matching*

For certain clinical episodes, spinal fusion and major joint replacement of the lower extremity, we had difficulty minimizing the standardized mean difference of the linear baseline trend for payments while also passing parallel trends tests. To address this we added a condition to the matching model that each match be conditional on the baseline payment trend of the PGPs in the match. To implement this, each PGP was classified as above or below the 50<sup>th</sup> percentile of the baseline payment trend of all BPCI Advanced and eligible comparison PGPs. BPCI Advanced PGPs below the 50<sup>th</sup> percentile were forced to match to a comparison PGP also below the 50<sup>th</sup> percentile and similarly for those above the 50<sup>th</sup> percentile.

In some instances, the addition of payment trend stratification and volume stratification in our matching model led to difficulties finding a match as the pool of potential comparison providers for each BPCI Advanced provider declined with the increase of stratifications. To address this, we explored applying the payment trend stratification to only certain volume strata. For example, for major joint replacement of the lower extremity, a model was run in which the payment trend stratification requirement only applied to high-volume providers (providers at or above the 90<sup>th</sup> percentile of baseline episode volume).

### ***Step 3: Caliper Selection***

Each BPCI Advanced PGP was matched with one comparison PGP with a log-odds propensity score absolute difference below a selected caliper. Calipers were based on the standard deviation of the estimated log-odds propensity score; BPCI Advanced PGPs with no potential matches inside the caliper were excluded from the sample.

Each comparison group was constructed by selecting a caliper that satisfied the following criteria of match quality:

- Average standardized mean difference of matching covariates to be below 0.1.<sup>15</sup>
- The p-value of the Kolmogorov-Smirnov test must be greater than 0.1.
- No single matching covariate could have a standardized mean difference of greater than 0.25.<sup>16</sup>

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<sup>15</sup> Four clinical episodes did not have an average SMD below 0.1: seizures, hip and femur procedures, back and neck except spinal fusion, and spinal fusion.

<sup>16</sup> Two clinical episodes, spinal fusion and gastrointestinal obstruction, did not meet this criterion. Each of these clinical episodes had two matching covariates with an SMD over 0.25.

We assessed a variety of other criteria that were also used in the hospital comparison group construction. This included minimizing the difference in the baseline total payments (means and distributions) between BPCI Advanced PGPs and the comparison group, the distributions and differences in estimated propensity scores, the average standardized mean difference in matching covariates, the parallel trends tests and risk-adjusted baseline trends for key outcome variables, and the number and episode volume of BPCI Advanced PGPs not finding a match within the selected caliper. (See **Appendix F** for standardized mean differences before and after matching. See **Appendix K** for results of parallel trends testing.)

As with hospitals, the use of calipers in our matching process and not evaluating all 34 clinical episodes resulted in excluding BPCI Advanced PGP intervention episodes from our impact analyses. For PGPs, approximately 89% of episodes in medical clinical episodes and 56% of episodes in surgical clinical episodes were included in our evaluation sample (Exhibit C.6).

#### ***Step 4: Model Selection***

As mentioned in **Step 2**, various matching models were run for each clinical episode. After optimal calipers were selected for each model, results were compared across models to identify the final model to be used for each clinical episode. The model selection process was similar to the caliper selection process, as similar metrics were assessed. This included the number of matching covariates with a standardized mean difference above 0.25, the distributions and differences in estimated propensity scores, the average standardized mean difference in matching covariates between BPCI Advanced PGPs and the comparison group, the number of PGPs and episode volume retained, and the parallel trends tests and risk-adjusted baseline trends for key outcome variables.

Unlike the comparison groups for hospitals, the model selection process for PGPs was unique for each clinical episode; therefore, various methodologies were used across the clinical episodes evaluated. The selected comparison group model methodology varied by the covariate list used in matching, market contamination threshold, volume bucket stratification, and payment trend stratification. Across all evaluated clinical episodes, 5 different methodologies were selected. The various methodologies used for each clinical episode are listed in Exhibit C.9.

**Exhibit C.9: Methodologies for PGP Matching Models**

Clinical Episode	Covariate List	Market Contamination Threshold	Volume Stratification (y/n)	Payment Trend Stratification (y/n)
Acute Myocardial Infarction	List 2	50%	y	n
Cardiac Arrhythmia				
Congestive Heart Failure				
Gastrointestinal Obstruction				
COPD, Bronchitis, & Asthma				
Renal Failure				
Urinary Tract Infection				
Seizures				
Stroke				
MJRUE				
Back & Neck (OP)	List 2	50%	y	y**
MJRLE				
Gastrointestinal Hemorrhage	List 1	75%	n	n
Sepsis				
Spinal Fusion	List 2*	50%	y	y
Cellulitis	List 1	50%	n	n
SPRI				
Hip & Femur				

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

\* For Spinal Fusion 8 additional covariates were added to list 2, for a total of 21 covariates. The 8 additional covariates are the 2018 episode shares of each Spinal Fusion MS-DRG. A medical coding change in 2018 reclassified the procedures that make up Spinal Fusion MS-DRGs, thus affecting the baseline payment trend. Accounting for DRG shares in the propensity score matching model selected a comparison group with a more similar payment trend compared to the BPCI Advanced group.

\*\*For MJRLE the payment trend stratification was only applied to high-volume providers (providers within the 90-100th percentiles of MJRLE baseline episode volume).

**Episodes of Care**

We constructed 90-day episodes of care for all eligible discharges across all clinical episodes included in the BPCI Advanced study population for this report. Episodes of care include payments for certain Part B services provided the day before an eligible anchor stay or procedure and all services provided during the anchor stay or procedure and the 90-day post-discharge period.

Episodes of care can overlap when a discharge or procedure occurs during an existing episode of care. The BPCI Advanced Model resolves overlapping episodes to identify which episode of care

becomes a “BPCI Advanced reconciliation episode.” These **reconciliation rules** in Model Years 1, 2, and 3 are as follows:

- When episodes of care from BPCI Advanced participating providers overlap, the first episode becomes the reconciliation episode.
- When episodes from a BPCI Advanced participant and non-participant overlap, the episode of care from the BPCI Advanced participant becomes the reconciliation episode, regardless of which one occurred first.<sup>17</sup>

In Model Year 4, these reconciliation rules were changed such that overlapping episodes of care were determined independently of the providers’ participation in BPCI Advanced. Generally, the first episode of care (“first admission” or procedure) takes precedent in becoming the reconciliation episode and any episode occurring for that beneficiary within the 90-day post-discharge period does not become a reconciliation episode. There are a few exceptions to this rule for certain procedures as noted above.

In this evaluation report, we followed these Model Year 4 reconciliation rules pertaining to overlapping episodes of care. Because these rules create episodes in the same manner for both participating and non-participating providers, we are able to follow the rules when creating our evaluation sample.

To evaluate the impact of BPCI Advanced PGPs, we needed to identify episodes “initiated” by non-participating PGPs. A complicating factor in doing this is that a given episode can have two different individual providers, as the episode may have an attending NPI and an operating NPI, and the two NPIs can be associated with different PGPs.<sup>18</sup> If an episode has two NPIs and one of the NPIs is associated with a BPCI Advanced participating PGP, the model will attribute the episode to the BPCI Advanced participating PGP. Because the evaluation also attributes episodes to non-participating PGPs, we must consider both the attending and operating NPI. In cases when an episode could be attributed to two different PGPs, we attributed the episode to the PGP associated with the attending NPI.

Lastly, our constructed episodes for both hospitals and PGPs differ from those created by reconciliation rules in how we account for overlap between other Innovation Center programs and the BPCI Advanced model and the inclusion of episodes with a confirmed COVID-19 diagnosis. In the construction of our episodes, we assumed BPCI Advanced episode initiators do not necessarily know which discharges or procedures within a clinical episode will become reconciled under the model. Thus, in both our BPCI Advanced and comparison samples we did not exclude episodes with beneficiaries aligned to other programs that have precedence over BPCI Advanced, including the GPDC Model, CEC Model, Next Generation ACO, and Vermont All-payer ACO. In addition, for analyses of PGP MJRLE episodes, we do not exclude episodes that occur at hospitals

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<sup>17</sup> There are three exceptions to these rules. First, in the case of multiple overlapping MJRLE episodes regardless of provider, the subsequent episode is included in reconciliation. Second, in cases where two episodes begin on the same day, which is only possible when one is inpatient and one is outpatient, the reconciliation rules are applied treating the inpatient episode as the initial clinical episode. Third, for Model Year 3, in cases of a PCI episode overlapping with a following endovascular cardiac valve replacement episode, the subsequent endovascular cardiac valve replacement episode is included in reconciliation and the preceding PCI episode is excluded.

<sup>18</sup> Note this differs from hospital episodes, because an episode can only be associated with one provider, the hospital.



actively participating in the CJR Model. This ensures that for PGPs operating at multiple hospitals their episodes are not censored or distorted for MJRLE. The model excludes episodes from reconciliation where the beneficiary is diagnosed with COVID-19 at any point during the episode, whereas the evaluation includes episodes with COVID-19 diagnoses, as the episode may still be affected by the care transformation implemented by providers.

### c. Analytic Methods

#### *Difference-in-Differences Approach*

Difference-in-differences (DiD) is a statistical technique that quantifies the impact of an intervention or policy. It achieves this by comparing changes in a *treatment* group (BPCI Advanced) to changes in a comparison group across baseline (pre-intervention) and intervention time periods. We use this analytic technique at the episode level to estimate the impact of BPCI Advanced on the key claims-based outcomes while controlling for differences between the BPCI Advanced and comparison episodes in beneficiary, market, and provider characteristics. This approach eliminates biases from time invariant differences between the BPCI Advanced and comparison episodes and controls for trends that are common between the BPCI Advanced and comparison populations.<sup>19</sup> Further, using episodes rather than hospitals and PGPs as observations allows us to directly control for potential changes in the composition of the patient mix, which may be a response to the model.

We applied the DiD technique at the episode level, including anchor hospitalizations which occurred during the baseline period from January 1, 2015 through September 1, 2018 and the Model Year four intervention period from January 1, 2021 through December 31, 2021. A small number of participants withdrew from clinical episodes prior to the end of Model Year 4. We exclude episodes from our DiD sample that occur after the BPCI Advanced hospital or PGP's withdrawal date. In the same fashion, we exclude episodes from matched comparison providers that occur after the withdrawal date of its matched provider.

To illustrate our estimation strategy, consider the stylized equation,

$$(1) \quad Y_{ikt} = \beta_0 + \beta_1 BPCIA_k + \beta_2 Post_t + \theta(BPCIA_k \cdot Post_t) + \mathbf{X}_{ikt}' \boldsymbol{\beta} + e_{ikt}$$

where  $Y_{ikt}$  is the outcome of interest for episode  $i$  from provider  $k$  during time  $t$ . The variable  $BPCIA_k$  is an indicator that takes on the value 1 if provider  $k$  participated in BPCI Advanced for the given clinical episode.  $Post_t$  is an indicator that takes the value of 1 for every episode in the intervention period, and  $\mathbf{X}_{ikt}$  is set of covariates at the beneficiary, provider, market, and temporal level for episode  $i$  with an anchor end in period  $t$  receiving care from provider  $k$ . In this linear example, the DiD estimate is the coefficient  $\theta$ , which determines the differential in outcome  $Y$  experienced by beneficiaries receiving services from BPCI Advanced episode initiators during the intervention period relative to beneficiaries receiving services from providers in the comparison group. Lastly, the error term is  $e_{ikt}$ .

<sup>19</sup> While the DiD model controls for unobserved heterogeneity that is fixed over time, there is no guarantee that this unobserved heterogeneity is, in fact, fixed. It could be the case, for example, that providers with improving outcomes are relatively more likely to sign up for the model, introducing correlation between BPCI Advanced participation and outcomes, which could bias the results.



We used multivariate regression models to control for differences in beneficiary demographics, clinical characteristics, and care use before hospitalization, along with provider characteristics that might be correlated with the outcome. Regression models were selected depending on the type and characteristics of the outcome measure. For example, ordinary least squares models were selected for continuous and count outcomes (payments, SNF days), and logistic models were estimated for the binary outcomes (institutional PAC use, mortality rate, readmission rate). In all specifications we allow standard errors to be clustered at the provider level.

To calculate a single impact on outcomes for groups of clinical episodes that are of interest (that is, all clinical episodes, medical, hospital medical, PGP medical, surgical, hospital surgical, PGP surgical, and by CESLG), we *pooled*, or rather combined, our clinical episode samples and estimated a single regression per outcome per group of clinical episodes.

**Appendix C** Section B.2. discusses how we used the pooled DiD methodology in the calculation of Medicare program savings.

### *Estimating Impacts by Beneficiary Subpopulation*

We estimate the impact of the model on key outcomes by beneficiary subpopulation. We also estimate the difference in the impacts and test if there is statistical evidence that two impacts differ between subpopulations. That is, for each subpopulation of interest, we compare the change in the outcome across the baseline and intervention time periods for BPCI Advanced and comparison episodes where the beneficiaries are in the subpopulation, resulting in the impact of the model for the beneficiary subpopulation. The *difference in impacts* is then the difference between the impacts for the two, mutually-exclusive subpopulations considered.<sup>20</sup>

To illustrate our estimation strategy, consider the stylized equation,

$$(2) \quad Y_{ikt} = \alpha_0 + \alpha_1 BPCIA_k + \alpha_2 Post_t + \delta(BPCIA_k \cdot Post_t) + \alpha_3 Population_i + \alpha_4(Population_i \cdot BPCIA_k) + \alpha_5(Population_i \cdot Post_t) + \gamma(Population_i \cdot BPCIA_k \cdot Post_t) + \mathbf{X}_{ikt}' \boldsymbol{\alpha} + e_{ikt}$$

where  $Y_{ikt}$  is the outcome of interest for episode  $i$  from provider  $k$  during time  $t$ . The variable,  $BPCIA_k$  is an indicator that takes on the value 1 if provider  $k$  participated in BPCI Advanced for the given clinical episode.  $Post_t$  is an indicator that takes the value of 1 for every episode in the intervention period.  $Population_i$  is an indicator of the beneficiary subpopulation (for example, in an analysis of dually eligible and non-dually eligible beneficiaries,  $Population_i$  would be equal to 1 if the beneficiary was part of the dually eligible subpopulation and 0 if the beneficiary was part of the non-dually eligible subpopulation), and  $\mathbf{X}_{ikt}$  is the set of covariates at the beneficiary, provider, market, and temporal level for episode  $i$  with an anchor end in period  $t$  receiving care from provider  $k$ . Covariates in the models mirror those in the main pooled analyses.

From this linear example, we can uncover the estimates of the impact for both subpopulations considered as well as the difference in impacts. The estimate of the impact of BPCI Advanced for beneficiaries in the subgroup with  $Population_i$  equal to 1 is the sum of the coefficients  $\delta$  and  $\gamma$ . The

<sup>20</sup> Mathematically, this difference in impacts is the equivalent to a difference-in-differences-in-differences estimate.

Conceptually, however, our analysis does not involve having one group being affected more or less by the intervention or policy. Our “third difference” simply compares two different impacts from different populations to study if there are differential affects across populations.

coefficient  $\delta$  is the estimate of the impact of BPCI Advanced for beneficiaries in the corresponding mutually exclusive subpopulation where  $Population_i$  is equal to 0. Therefore, the estimate of the difference in impacts is the coefficient  $\gamma$ . Lastly, the error term is  $e_{ikt}$

For Model Year 4 analyses, we defined the samples in the same manner as we did for the episode-level pooled impact analyses, described above. That is, the time periods follow the same definitions, and we use the same set of providers for our BPCI Advanced treatment and comparison groups.

We report the impacts and the difference in impacts for three pairs of beneficiary subpopulations: Black or African American beneficiaries and Non-Hispanic White beneficiaries; Hispanic beneficiaries and Non-Hispanic White beneficiaries; and dually eligible beneficiaries and beneficiaries without dual eligibility.<sup>21</sup> In the analyses of populations based on race or ethnicity, we restrict the sample to include only episodes for beneficiaries within the identified subpopulations; all other race and ethnicity groups are omitted from the analyses. For the analyses based on dual eligibility, we consider a beneficiary to be dually eligible if they have continuous full or partial dual-enrollment six months prior to the anchor through the end of the episode.

### *Matching in a Difference-in-Differences Approach*

BPCI Advanced is a national voluntary model with a large number of participating hospitals and PGPs that span a wide range of geographies and provider types. By matching on key market and provider characteristics in the baseline, including baseline outcome levels and trends, we selected a subset of the eligible non-participating hospitals and PGPs that were similar to the non-random sample of Model Year 4 BPCI Advanced participating hospitals and PGPs. See the Third Evaluation Report, **Appendix C**,<sup>22</sup> for a detailed discussion on the potential benefits and potential harm that matching on baseline outcomes may create.

### *Covariate Selection for Risk Adjustment*

The DiD model adjusts for beneficiary, hospital, market, and seasonal covariates to control for differences that are exogenous to the BPCI Advanced model. While we require a core set of covariates in all models, additional outcome-specific covariates were selected at the CESLG-level for each model using a least absolute shrinkage and selection operator (LASSO).

We required all DiD models to include a set of risk-adjustment covariates that was based on clinical knowledge and prior research (Exhibit C.10). For each CESLG, we performed a LASSO regression to select additional covariates for given outcomes.<sup>23</sup> Specifically, we estimated a ten-fold cross-validated linear LASSO procedure on baseline episodes from all eligible providers and then used the optimized lambda value to select the set of optional covariates. Each LASSO regression included the core set of required covariates and considered the full list of optional

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<sup>21</sup> Black or African American beneficiaries, Non-Hispanic White beneficiaries, and Hispanic beneficiaries are identified in the data using the RTI race codes from the Master Beneficiary Summary File.

<sup>22</sup> The BPCI Advanced Third Evaluation Report is available for download at <https://innovation.cms.gov/innovation-models/bpci-advanced>.

<sup>23</sup> For consistency, we used the same selected covariates for total allowed payments, total Medicare paid amounts, SNF payments, IRF payments, HH payments, readmissions payments, and hospice payments. We ran the LASSO procedure for each clinical episode and episode-initiator type using the total allowed payments outcome to optimize the selected covariate list for payment outcomes. Covariates for all other (non-payment) outcome models were selected from separate outcome- and CESLG-specific LASSO procedures.

covariates for selection. This data-driven approach to select optional covariates helps maximize model fit while constraining the complexity of the model.

**Exhibit C.10: Required and Optional Predictive Risk Factors Used to Risk Adjust Claims Outcomes**

Domain	Variable Type	Variables
Service Mix	Required	<ul style="list-style-type: none"> <li>Anchor MS-DRG or HCPCS code</li> <li>Knee-replacement anchor (regressions with <i>MJRLE</i> episodes only)</li> <li>Hip fracture (regressions with <i>MJRLE</i> episodes only)</li> <li>CJR Episode (regressions with PGP <i>MJRLE</i> episodes only)</li> </ul>
	Optional	[none]
Patient Demographics & Enrollment	Required	<ul style="list-style-type: none"> <li>Age</li> <li>Sex</li> <li>Race and ethnicity*</li> <li>Dual Eligibility</li> <li>Original Reason for Eligibility in Medicare: Disability (non-ESRD)</li> <li>Alignment to Medicare ACO**</li> <li>Alignment to BPCI Classic for the episode (binary indicator interacted with calendar year)</li> </ul>
	Optional	<ul style="list-style-type: none"> <li>Age squared</li> </ul>
Prior Health Conditions	Required	<ul style="list-style-type: none"> <li>HCC score</li> </ul>
	Optional	<ul style="list-style-type: none"> <li>Individual HCC flags</li> <li>Dementia diagnosis</li> <li>Hypertension diagnosis</li> </ul>
COVID-19 Diagnoses	Required	<ul style="list-style-type: none"> <li>Confirmed COVID-19 diagnosis during anchor stay/procedure</li> <li>Confirmed COVID-19 diagnosis during 90 days prior to anchor stay/procedure</li> </ul>
Utilization Measures Preceding the Start of the Anchor Stay or Qualifying Inpatient Stay	Required	<ul style="list-style-type: none"> <li>Binary indicators for care in SNF, IRF, LTCH, Hospice, HHA, IPPS and OIP in the <b>six months</b> preceding the start of the episode</li> </ul>
	Optional	<ul style="list-style-type: none"> <li>Binary indicators for ED visit and psychiatric visit in the six months preceding the start of the episode</li> </ul>
Geography/Market	Required	<ul style="list-style-type: none"> <li>Census Division indicators</li> </ul>
	Optional	<ul style="list-style-type: none"> <li>Urban indicator</li> </ul>
Seasonality	Required	<ul style="list-style-type: none"> <li>Quarter indicators</li> </ul>
	Optional	[none]
Provider Characteristics	Required	<ul style="list-style-type: none"> <li>Hospital size (trinary indicators for number of beds)</li> <li>Percent of baseline episodes attributed to PGPs (hospital regressions only)</li> </ul>
	Optional	<ul style="list-style-type: none"> <li>Hospital ownership indicators</li> <li>Resident-to-bed ratio</li> <li>Safety net Hospital</li> </ul>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

\* Data on race and ethnicity come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File (MBSF).

\*\*Medicare ACOs referred to under No ACO Episodes include the ACO Investment Model, the Advanced Payment ACO Model, the Comprehensive End-Stage Renal Disease Care Model, the Comprehensive Primary Care Initiative

Model, the Comprehensive Primary Care Initiative Plus Model, the Global and Professional Direct Contracting Model, the Independence at Home Demonstration, the Medicare and Medicaid Financial Alignment Initiative, the Medicare Shared Savings Program, the Next Generation ACO Model, the Pioneer ACO Model, the Primary Care First Model, the Vermont All-Payer ACO Model.

Covariates in our pooled and CESLG models included a set of indicators for the anchor stay or procedure MS-DRG or HCPCS code for the episode, a non-interacted set of required covariates, and a clinical-episode-specific set of required covariates (that is, a required set of covariates interacted with an indicator for the clinical episode). When determining the final list of optional covariates for each pooled grouping by clinical episode and episode initiator-type for a given outcome, we only included the covariates selected by LASSO for all CESLGs included. For example, if the HCC indicator number 8 was selected for all surgical CESLGs for total allowed payments that were evaluated for hospitals, only then would it be included in the DiD covariates list for hospital surgical clinical episodes.<sup>24</sup> For pooled models that include episodes for both episode initiator types, the optional covariate list was constructed as the union of the covariates from corresponding episode initiator-type models. That is, if HCC 8 appeared in either the surgical hospital list or the surgical PGP list, then it would be included in the list of covariates in the surgical model.

### *Parallel Trends Tests*

A fundamental assumption of the validity of our DiD design is that the BPCI Advanced group would have followed a similar trend in outcomes as the comparison group if the model had never existed. While this fundamental assumption is always untestable, we can compare the BPCI Advanced and comparison group trends during the baseline period (often referred to as the parallel trends assumption). Evidence of non-parallel trends during the baseline indicates that any estimated impacts (or lack thereof) could be explained by the pre-existing differences in the trends and not an actual impact of the model. We tested the null hypothesis that BPCI Advanced participants and comparison providers had parallel trends during the baseline. To do so, we ran a regression of the outcome on a time and BPCI Advanced dummy interaction term in addition to the full set of risk adjusters that are included in the DiD specification on baseline data for each DiD model. If there was no differential between the trends of the BPCI Advanced and comparison group prior to intervention, the interaction coefficient would be near zero and not statistically significant. We rejected the null hypothesis that there were parallel trends in the baseline at the 10% level of significance. We also visually inspected baseline trends to assess the size and direction of any potential bias.

We note outcomes for which we rejected the null hypothesis that there were parallel trends in the baseline. Results of the parallel trends tests are reported in **Appendix K**.

### *Sensitivity Analyses*

To test the robustness of our impact estimates, we conducted sensitivity analyses on key outcomes that tested the inclusion and exclusion of specific episodes in our sample. The results of these analyses are presented in **Appendix L**.

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<sup>24</sup> In cases where there were three or more CESLGs in the grouping and 1 CESLG did not have any optional covariates selected, the CESLG without selected covariates was not considered in the construction of the covariate list.

## *Descriptive Analyses Approach*

### *Participation*

The analyses assessing BPCI Advanced participation and participant characteristics used a mixed-methods approach, incorporating both quantitative and qualitative data sources. These data sources included the CMS BPCI Advanced Portal to identify participants and their clinical episodes, the CMS POS files to determine the location of participants, the CMS BPCI Advanced Reconciliation Result files to retrieve NPRA and final target prices, Site Visits conducted with BPCI Advanced Model participants, Key Informant Interviews with BPCI Advanced model participants, and Electronic Survey results fielded to model participants.

To assess participation in the BPCI Advanced model, we utilized this mixed methods approach to understand and quantify decline in model participation amid significant changes to the model design in Model Year 4. We identified the number of BPCI Advanced participants, including the number of hospitals and PGPs, the number of conveners and non-conveners participants, and the number of hospitals and PGPs that were under conveners for each model year. We also discerned the average number of clinical episodes that each hospital or PGP participated in for each model year, along with the proportion of episode initiators that selected each CESLG in Model Year 4.

Additionally, we analyzed how participant characteristics differed for Model Year 4 (2021) participants in comparison to Model Year 3 (2020) participants. These analyses also included comparing the representativeness of BPCI Advanced hospitals by hospital, population, and geographical characteristics. We examined the approach to selecting CESLGs among changes to target price methodology and the COVID-19 PHE, along with the type and characteristics of conveners that may govern the participation decisions of some hospital and PGP participants. Additionally, we assessed the performance of model participants through average NPRA for participants that chose to continue or exit the model before the sequential model year for each model year.

### *Reach*

To assess the reach of BPCI Advanced, we utilized the CMS BPCI Advanced database of participants to identify participating hospital and PGP episode initiators and the clinical episode service line groups in which they participated, the CMS POS files and IPPS files to identify all eligible hospitals, and Medicare FFS claims to identify eligible clinicians, discharges, and procedures. We used BPCI Advanced databases to identify BPCI Advanced hospitals and PGPs, which were defined by a unique TIN.

There were 3,148 hospitals eligible to initiate episodes in BPCI Advanced in Model Year 4. Eligible hospitals in this analysis included IPPS hospitals in 2021 where the minimum hospital baseline volume criterion was met for at least one clinical episode. The sample excluded hospitals that met any of the following criteria: PPS-exempt cancer hospital, inpatient psychiatric hospital, critical access hospital, located in Maryland, participating in the Pennsylvania Rural Health Model or participating in the Rural Community Health Demonstration.

We defined eligible clinicians as attending and operating NPIs who treated Medicare beneficiaries who met the BPCI Advanced inclusion criteria at a BPCI Advanced eligible hospital (the minimum hospital baseline volume criterion was not applied). We defined clinicians who participated in



BPCI Advanced as 1) any attending or operating NPI at a BPCI Advanced hospital for a clinical episode in which the hospital was participating; or 2) any attending or operating NPI on the hospital claim when the beneficiary had a corresponding Part B claim during the anchor stay or anchor procedure (including one day prior) where the BPCI Advanced PGP TIN was billing the provider and the PGP was participating in the given clinical episode service line group.

### *Analysis of the Representation of Beneficiaries From Populations That Have Been Historically Underserved*

We analyzed the change in composition in the sample based on different exclusion criteria from the model. To perform these analyses, we use the set of all inpatient Medicare discharges and outpatient Medicare discharges with a BPCI Advanced triggering HCPCS code that occurred during the intervention period of the model (October 1, 2018 – December 31, 2021). We keep only the first observation per beneficiary. This allows us to interpret the shares of different demographic groups as shares of beneficiaries rather than shares of discharges.

In the first step of the analysis, we exclude beneficiaries where this discharge does not have a BPCI Advanced triggering MSDRG. We then exclude the set of beneficiaries that are ineligible due to the model criteria. These restrictions exclude any discharge: at a non-acute care hospital or at a cancer and/or critical access hospital; at a Maryland acute care hospital; with conflicting dates (such as, discharge date prior to admission date); where the beneficiary is receiving ESRD care (such as, dialysis in the 90 days prior to the episode, a kidney transplant in the 3 years prior to the episode); where Medicare is not the primary payer in the 90-days prior through the end of the episode; where the beneficiary is not continuously enrolled in Part A & Part B FFS in the 90-days prior through the end of the episode; where the beneficiary is aligned to an ACO or the Rural Health Model; where the anchor stay lasts more than 30 days; or if the outpatient procedure has J1 status indicator and is not the highest ranked revenue line on the claim.

The final sample used includes the set of episodes included in reconciliation in the second true-ups for Model Year 4. This sample only includes episodes attributed to participants with all overlap resolved. Like the sample above, in the reconciliation sample we limit the sample to only include the first discharge for the beneficiaries.

In the analysis for each subpopulation, we reference the FFS enrollment for that population. Based on the Master Beneficiary Summary Files, we calculate the percent FFS as the weighted annual average of 2018-2021 of the percent of beneficiaries in that demographic group who had at least one month of the year where they were enrolled in Part A & B FFS.

For each referenced subpopulation, we include shares for both Model Year 4 and Model Years 1 through 3 for comparison of model representativeness between the performance periods.

### *ACO Analysis*

In this section, we define the methodology used in our ACO analysis. The section breaks down how we aligned beneficiaries to ACOs and providers to ACOs.

To assess the ACO prevalence in our data on the beneficiary level, a descriptive analysis was conducted to see current overlap of beneficiaries, using Medicare FFS claims and enrollment data to define episodes with anchor stays or procedures beginning on or after January 1, 2021 and

ending on or before December 31, 2021 (Model Year 4). To identify beneficiaries aligned to an ACO we used CMS Master Data Management (MDM). ACOs of interest included the CEC Model, Medicare Shared Savings Program, the NGACO, VTAPM and GPDC. To assign a beneficiary as aligned to an ACO, the data fields program ID field, beneficiary alignment effective data, and beneficiary end date were used in the MDM. A beneficiary would be considered aligned if their program ID matched an ACO of interest, and their episode was between alignment dates (except when a model ended, and the episode continues into the following calendar year). For example, a beneficiary would have been said to be aligned to a Medicare Shared Savings Program ACO if their Program ID took a value of eight and they were in that program during the time of January 1, 2021 through December 31, 2021. Further stratification was done on the beneficiary level by CESLG.

To assess the ACO prevalence in our data on the provider level, a descriptive analysis was conducted to see provider overlap, using Medicare FFS claims and enrollment data to define episodes with anchor stays or procedures beginning on or after January 1, 2021 and ending on or before December 31, 2021 (Model Year 4). To identify providers aligned to an ACO we used the Shared Savings Program Provider-Level and the Next Generation ACO Provider-Level Program Research Identifiable Files (RIFs). We limited the sample of BPCI Advanced hospitals and PGPs to those with at least one Model Year 4 episode (episodes whose anchor stays or procedures began on or after January 1, 2021 and ended on or before December 31, 2021). Hospitals were able to be identified in the ACO Provider-Level data via the CCN. Providers were identified in the ACO Provider-Level data via TIN. Providers and hospitals were eliminated from the analysis from the Shared Savings Provider-Level File if their ACO start date began in 2022. The Next Generation Provider-Level File only had data in 2021 and was used in our analysis.

### *Other Descriptive Analyses*

We calculate other descriptive analyses to provide additional context for the evaluation sample. These analyses include the share of episodes with a COVID-19 diagnosis, patient characteristics analysis, as well as the analysis of differences in baseline outcomes by beneficiary subpopulation. Below we describe the methods used for these analyses:

- *Share of episodes with a COVID-19 diagnosis:* We calculated the share of episodes in Model Year 4 where the beneficiary had a confirmed COVID-19 diagnosis during the anchor hospitalization or 90-day PDP for BPCI Advanced episodes and comparison group episodes, where a confirmed COVID-19 diagnosis was indicated by the presence of diagnosis code U07.1 on a claim for the beneficiary at any point in the episode. The shares were calculated by pooled grouping and by CESLG.
- *Patient characteristics:* We calculated the unadjusted mean values for the patient characteristic in the baseline period (January 1, 2015 or later and ending by September 30, 2018) and in Model Year 4 for BPCI Advanced episode and comparison group episodes. We then calculate the relative change as the difference in the mean of the characteristic for BPCI Advanced episodes in Model Year 4 compared to the baseline period, relative to the change for the comparison group.
- *Differences in baseline mean outcomes:* We calculated the unadjusted baseline mean values by beneficiary subpopulation for key outcomes. We then calculated the difference in the outcomes for beneficiaries who are Black or African American and beneficiaries

who are Non-Hispanic White, beneficiaries who are Hispanic and beneficiaries who are Non-Hispanic White, and beneficiaries who are dually eligible and beneficiaries who are not dually eligible. We tested for differences in the mean outcomes using two-sample t-tests and z-tests for proportions. The means were calculated for episodes with anchor stays or procedures beginning January 1, 2015 or later and ending by September 30, 2018. The analysis was performed for BPCI Advanced episodes in the evaluation sample, comparison group episodes in the evaluation sample, and all BPCI Advanced eligible FFS Medicare episodes nationwide at eligible hospitals.<sup>25</sup>

## 2. Medicare Program Savings

In this section, we define the outcomes and methodology used to calculate Medicare program savings.

Net savings to Medicare was defined as the difference between non-standardized paid amounts and reconciliation payments made to or received from BPCI Advanced participants following the general formula:<sup>26, 27</sup>

$$\text{Medicare savings} = \text{reduction in non-standardized payments} - \text{reconciliation payments}$$

The reduction in non-standardized payments is approximated by multiplying the estimates from the DiD model on total paid amounts, which estimates the change in per-episode standardized Medicare paid amounts during the inpatient stay and 90-day PDP, by a standardized to non-standardized conversion factor.<sup>28</sup> After converting to non-standardized dollars, we multiply each DiD estimate by the corresponding total number of BPCI Advanced episodes with anchor stays or procedures ending between January 1, 2021 to December 31, 2021 (Model Year 4). This effectively extrapolates the DiD impact estimates to all BPCI Advanced episode initiators participating in the clinical episodes we evaluated, including episode initiators that may have been excluded from our impact analyses because there was not a comparison hospital or PGP inside the selected caliper for our propensity score matching or for other reasons. Sensitivity analyses suggest that this extrapolation was reasonable (see **Appendix L**). Notably, we do not extrapolate reductions in payments or Medicare savings to clinical episodes we do not evaluate.

The number of Model Year 4 BPCI Advanced episodes we use to calculate Medicare program savings is the count of BPCI Advanced episodes in Model Year 4 that were evaluated (“evaluation count”). The evaluation count is greater than the count of BPCI Advanced episodes included by the model (“model count”) in Model Year 4 reconciliation for several reasons. The model excludes episodes from reconciliation where the beneficiary is diagnosed with COVID-19, whereas the evaluation includes episodes with COVID-19 diagnoses. Other differences between the evaluation

<sup>25</sup> The minimum hospital baseline volume criterion was not applied.

<sup>26</sup> Non-standardized paid amounts vary from the standardized allowed amounts that we use in the main DiD analyses. We use non-standardized paid amounts for this analysis, which approximate the actual payments made from Medicare to providers (without beneficiary cost sharing and incorporating geographic and other payment adjustments).

<sup>27</sup> Net savings are reported such that a positive value indicates savings to Medicare and a negative value indicates losses to Medicare. We often report reduction in non-standardized payments and reconciliation payments in this same perspective for consistency.

<sup>28</sup> Non-standardized payments were calculated by applying a ratio of non-standardized to standardized Medicare paid amounts to our DiD impact estimates on standardized Medicare paid amounts.



and model counts are due to other model exclusions. For example, the model excludes episodes where the beneficiary is aligned to certain types of ACOs. The evaluation includes these episodes because it is unlikely that hospitals and PGPs know that an episode will be excluded from the model in time to substantially change care redesign activities for that beneficiary (see **Appendix N** for our estimates of Medicare program savings using the model count of episodes).

Reconciliation payments (or NPRA) are payments made to BPCI Advanced participants from Medicare. Participants with intervention episode payments below their target prices received the difference as a reconciliation payment from CMS. Participants with Mode Year episode payments above their target prices paid the difference to CMS. We used Model Year 4 reconciliation data, regardless of which *performance period* episodes were reconciled in, and aggregated payments across participants to the clinical-episode level within each participant type. The reconciliation data used from performance periods 5 and 6 are finalized, second true-up amounts. Due to the timing of this report, the data used from performance period 7 are the first true-up amounts and are subject to slight changes in the forthcoming second true-up amounts.<sup>29</sup> Since we calculate Medicare program savings only for clinical episodes we evaluated, we used reconciliation data calculated for each clinical episode each episode initiator participated in. This reconciliation data does not account for various adjustments that occur across clinical episodes (for example, composite quality score and stop-gain/stop-loss). To account for these adjustments we calculated an adjusted reconciliation amount that approximates these adjustments at the clinical episode level for each episode initiator.<sup>30</sup>

To calculate savings for different groups of pooled clinical episodes (hospital medical clinical episodes, PGP medical clinical episodes, hospital surgical clinical episodes, PGP surgical clinical episodes, all medical clinical episodes, all surgical clinical episodes, and all clinical episodes or total model), we pooled our clinical episode samples and estimated a single DiD regression on total standardized paid amounts per group of clinical episodes. This allowed us to create ranges (based on the confidence intervals) for the corresponding total reduction in non-standardized spending and Medicare savings that accurately reflected the corresponding sample.

For each Medicare savings estimate, we calculated net savings per episode by dividing net savings by the corresponding number of BPCI Advanced episodes. We also represent net savings as a percentage of what payments would have been absent the BPCI Advanced Model. To do this, we first calculated a counterfactual of the BPCI Advanced mean standardized payments by taking the BPCI Advanced risk-adjusted baseline mean and adding the change in the comparison group (comparison group risk-adjusted intervention mean minus comparison group risk-adjusted baseline mean). This gives us an estimate of what standardized payments would have been absent BPCI Advanced. We then converted this counterfactual mean into non-standardized paid amounts by multiplying the counterfactual mean with the corresponding standardized to non-

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<sup>29</sup> Model Year 4 performance period 7 episodes are a small share of episodes, since they only include episodes that have post-discharge periods ending after December 31, 2021 and have anchor stays or procedures that end on or before December 31, 2021.

<sup>30</sup> Adjusted reconciliation amounts were calculated by applying a ratio of final reconciliation amounts to intermediate reconciliation amounts calculated at the parent BPID (convener) level to the episode initiator-level reconciliation amounts for the clinical episodes evaluated.

standardized conversion factor. This was then used as a denominator to express per-episode net savings as a percent.

Additional details about these measures and the net savings calculations can be found in Exhibit C.11.

### Exhibit C.11: Definition of Measures Used in the Analysis of Medicare Program Savings

Measure	Definition
<b>Per-episode Change (or Reduction) in Standardized Payments</b>	A per-episode estimate of the change in Medicare payments attributable to BPCI Advanced using the total payments DiD regression model(s) for a given clinical-episode and episode-initiator type or pooled group of clinical episodes. The payment outcome, total Medicare Part A & B standardized <i>paid</i> amounts, includes all Medicare paid amounts for services during the anchor stay and 90 days post-discharge, and excludes beneficiary cost sharing. We used the 90% (or 95%) confidence interval from this DiD estimate to create upper and lower bound estimates. The DiD estimate and the bounds were multiplied by (-1) so that a positive estimate indicates a reduction in payments.
<b>Standardized to Non-standardized Conversion Factor</b>	A ratio of non-standardized to standardized Medicare paid amounts based on BPCI Advanced intervention episodes; specific to the given sample (clinical episode and episode-initiator type or pooled group of clinical episodes).
<b>Per-episode Change (or Reduction) in Non-Standardized Payments</b>	The DiD estimate of per-episode change in standardized payments multiplied by the standardized to non-standardized conversion factor. Non-standardized Medicare paid amounts reflect actual payments made from Medicare to providers because they include adjustments for wages, practice expenses, and other initiatives (such as, medical education).
<b>Number of BPCI Advanced Episodes</b>	The number of episodes in BPCI Advanced with anchor stays or procedures ending between January 1, 2021 to December 31, 2021.
<b>Aggregate Change (or Reduction) in Non-standardized Payments</b>	The per-episode change in non-standardized payments multiplied by the number of episodes for a given clinical episode or clinical episode service line group and episode-initiator type or pooled group of clinical episodes.
<b>Unadjusted Reconciliation Payments</b>	Reconciliation payments are defined as total amounts paid to BPCI Advanced participants by Medicare net of repayments from participants to Medicare. Negative values indicate that more funds have been received by Medicare than paid. For a given sample (clinical-episode or clinical episode service line group and episode-initiator type or pooled group of clinical episodes), episodes from all BPCI Advanced episode initiators in Model Year 4 were included. Clinical episode reconciliation payments do not account for several model adjustments that are applied at the episode initiator and convener level (that is, the stop-loss/stop-gain provision, the Composite Quality Score adjustment, and the post-episode spending repayment amount).
<b>Adjusted Reconciliation Payments</b>	Approximated final reconciliation payments paid to BPCI Advanced participants by Medicare net of repayments from participants to Medicare. For a given sample, episodes from all BPCI Advanced episode initiators in Model Year 4 were included. The unadjusted reconciliation payments for the clinical episodes evaluated were multiplied by the adjusted to unadjusted reconciliation payments conversion factor of the episode initiator's convener participant or the non-convener participant. These clinical episode reconciliation amounts account for several model adjustments that are applied at the episode initiator and convener level.
<b>Adjusted to Unadjusted Reconciliation Payments Conversion Factor</b>	A ratio of adjusted to unadjusted reconciliation payments calculated at the episode initiator's convener participant or the non-convener participant level.

Measure	Definition
<b>Net Savings to Medicare; Net Medicare Savings; Medicare Program Savings</b>	For a given clinical-episode and episode-initiator type or pooled group of clinical episodes, the reduction in non-standardized payments less reconciliation payments. A positive value indicates savings; a negative value indicates losses. The terms “net savings”, “[net] Medicare savings”, and “[net] Medicare program savings” are used interchangeably.
<b>Per-episode Net Savings to Medicare</b>	For a given clinical-episode and episode-initiator type or pooled group of clinical episodes, the net savings to Medicare divided by the corresponding number of BPCI Advanced episodes.
<b>Net Savings as a % of BPCI Advanced Counterfactual</b>	For a given clinical-episode and episode-initiator type or pooled group of clinical episodes, net savings as a percentage of what payments would have been absent the BPCI Advanced model. This is net savings divided by the counterfactual. The counterfactual is calculated as the BPCI Advanced baseline mean payment plus the change in the comparison group mean payment (comparison group intervention mean payment minus comparison group baseline mean payment).

### 3. Patient-Reported Functional Status, Care Experience, and Overall Satisfaction With Care

The BPCI Advanced beneficiary survey explored differences in patient care experiences and functional outcomes between Medicare beneficiaries cared for by BPCI Advanced providers and similar beneficiaries whose providers did not participate in BPCI Advanced. The beneficiary survey collected information on a set of patient outcomes related to functional status, health care experience, and satisfaction with care and recovery. This section describes the instrument, sampling, administration, outcomes, and analysis of the beneficiary survey.

#### a. Beneficiary Survey Instrument

The survey instrument (**Appendix P**) was a revised version of the survey instrument used in the original BPCI evaluation,<sup>31</sup> which was based on items adapted from validated survey instruments, such as the CARE Tool,<sup>32</sup> National Health Interview Survey,<sup>33</sup> and Short Form 36 Health Survey.<sup>34</sup> Based on input from clinical experts at CMS and the evaluation team, four new questions were added to better measure care experience and satisfaction with care. New questions were adapted from the Hospital CAHPS,<sup>35</sup> Care Coordination Quality Measure for Primary Care,<sup>36</sup> and B-

<sup>31</sup> Centers for Medicare & Medicaid Services (2018). CMS Bundled Payments for Care Improvement Initiative Models 2-4: Year 5 Evaluation & Monitoring Annual Report. Prepared by The Lewin Group. <https://downloads.cms.gov/files/cmimi/bpci-models2-4-yr5evalrpt.pdf>

Trombley MJ, McClellan SR, Kahvecioglu DC, Gu Q, Hassol A, Creel AH, Joy SM, Waldersen BW, and Ogbue C (2019). Association of Medicare’s Bundled Payments for Care Improvement Initiative with Patient-Reported Outcomes. *Health Services Research*, Vol. 54(4).

<sup>32</sup> Gage et al. (2012). The Development and Testing of the Continuity Assessment Record and Evaluation (CARE) Item Set.

<sup>33</sup> Centers for Disease Control and Prevention. (2012). National Health Interview Survey.

<sup>34</sup> Brazier et al. (1992). Validating the SF-36 health survey questionnaire: new outcome measure for primary care, *BMJ*, 305(6846), 160-164.

<sup>35</sup> Agency for Healthcare Research and Quality, Rockville, MD. CAHPS Hospital Survey. Content last reviewed October 2018. <https://www.ahrq.gov/cahps/surveys-guidance/hospital/index.html>.

<sup>36</sup> Agency for Healthcare Research and Quality, Rockville, MD. Care Coordination Quality Measure for Primary Care (CCQM-PC). <https://www.ahrq.gov/ncepcr/care/coordination/quality/index.html>.

Prepared Instrument,<sup>37</sup> and replaced five original questions on discharge timing and level of post-acute care received. The revised instrument underwent cognitive testing with a convenience sample of seven Medicare beneficiaries with recent inpatient and outpatient hospital experience.

The beneficiary survey contained 29 multiple-choice, closed-ended questions and was designed to take an average of 25 minutes to complete. Survey questions covered a range of domains including functional status, health care experience, and satisfaction with care and recovery (Exhibit C.12). For each of seven functional areas, respondents were asked to recall their functional status before the anchor hospital visit (inpatient or outpatient) and also to report their current functional status at the time they were completing the survey, which was at least three months after the anchor hospital visit.

**Exhibit C.12: Domain and Survey Items for Beneficiary Survey**

Domain	Description
<b>Functional Status<sup>a</sup></b>	1) Bathing/dressing/toileting/eating 2) Planning regular tasks 3) Use of a mobility device 4) Walking by self without resting 5) Walking up or down 12 stairs 6) Physical or emotional problems that interfere with social activities 7) Pain that interferes with normal activities
<b>Health care experience</b>	1) Respondent felt prepared to leave the hospital 2) Medical staff took patient preferences into account when arranging for health care services after leaving the hospital 3) Respondent had a good understanding of how to take care of herself or himself prior to leaving the hospital 4) Medical staff clearly explained how to take medications 5) Medical staff clearly explained needed follow-up appointments 6) Respondent and caregivers’ ability to manage their health care needs 7) Medical staff discussed whether patient would have the help they needed when they got home 8) If help needed at home, medical staff arranged for services at home to help patient manage health
<b>Satisfaction</b>	1) Overall satisfaction with recovery 2) Rating of all post-hospital care from 0-10
<b>Personal characteristics</b>	1) Highest level of education 2) Permission to follow up with respondent

<sup>a</sup> For each of the seven functional areas, respondents were asked to recall their functional status before the anchor hospital visit (inpatient or outpatient) and also to report their current functional status at the time they were completing the survey, which was at least three months after the anchor hospital visit.

<sup>37</sup> Graumlich JF, Novotny NL, and Aldag JC. (2008). Brief Scale Measuring Patient Preparedness for Hospital Discharge to Home: Psychometric Properties. *J Hosp Medc.* Vol 3(6). pp-446-454.

## ***b. Beneficiary Survey Sample***

### ***Timing of Survey Wave***

Presented results are from Waves 2 and 3 of the BPCI Advanced beneficiary survey, which covered episodes with discharges or outpatient procedures in July or August 2021 and July or August 2022 (during Model Years 4 and 5). We surveyed beneficiaries with episodes initiated by acute-care hospitals and PGPs. Beneficiaries received surveys approximately 90 days after leaving the hospital.

### ***Sample Frame***

The beneficiary survey used a stratified random sampling method to obtain a representative sample of the BPCI Advanced population and a matched comparison group. We created the sampling frame using Medicare FFS claims from two “rolling” one month samples; the beneficiaries in the two rolling one month samples received their surveys one month apart.<sup>38</sup> For the first month of Waves 2 and 3 respectively, claims for July 2021 or 2022 were pulled in early August 2021 or 2022 and surveys were mailed in the first week of October 2021 or 2022. For the second month of Waves 2 and 3 respectively, claims for August 2021 or 2022 were pulled in early September 2021 and 2022 and surveys were mailed the first week of November 2021 or 2022. This rapid sampling process was employed to reduce recall bias. This process also had the effect of limiting the sample to patients whose claims were filed relatively quickly, within one month of discharge or outpatient procedure.<sup>39</sup> We stratified the sample by CESLG, separately for hospital and PGP episode initiators. This yielded 16 unique strata.

Nested within our CESLG-based strata, we also implemented an oversample of beneficiaries belonging to racial or ethnic minorities as identified by the Research Triangle Institute (RTI) race code included in beneficiary enrollment files. Our goal was to obtain 310 BPCI Advanced and comparison responses for each racial or ethnic category to power subgroup analyses. For any group that did not have sufficient available sample size to target 310 completed surveys, we took a census of available beneficiaries.

### ***Sample Construction***

The goals of sample construction were to select a representative sample of BPCI Advanced hospital discharges and outpatient procedures and to identify and select an appropriate comparison group of hospital discharges and procedures. We started with the universe of BPCI Advanced hospitals and nonparticipating comparison group hospitals. We then excluded hospitals if they were not eligible for BPCI Advanced and additionally excluded hospitals in various ways to limit exposure of the comparison group to the BPCI Advanced Model and the CJR Model. These exclusions are described in more detail, below.

Our sampling universe comprised all hospital discharges or outpatient procedures that met BPCI Advanced program rules (such as, no beneficiaries assigned to NextGen ACOs; no visits from

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<sup>38</sup> One month of claims was not adequate to reach the necessary sample size at the levels of clinical precision used to define the strata.

<sup>39</sup> Although claims submitted within one month may not represent the entire Medicare population within a stratum due to provider delays in submitting claims, this issue should affect BPCI Advanced and comparison samples equally, and not bias our estimates.

hospitals in the Maryland All-Payer model). We followed identical steps to construct the hospital and PGP samples from within the sampling universe, because the PGP comparison group was based on all eligible hospital visits, not visits attributed to comparison PGPs (that is, we did not identify comparison PGPs from which to sample beneficiaries with episodes). We constructed the hospital and PGP survey samples in four steps.

**Step 1 – Excluding hospitals:** All BPCI Advanced episode initiators active as of July Model Year 4 and July Model Year 5 were eligible for our Wave 2 and Wave 3 samples, respectively. We generated a comparison group pool specific to each clinical episode by applying five different types of exclusions by clinical episode and CESLG. Hospitals were excluded from the clinical episode comparison group pool if:

- They were BPCI Advanced participants for any clinical episode sharing the same CESLG.
- They were ineligible to participate in BPCI Advanced due to low baseline volume for a given clinical episode. For example, a comparison group hospital with low baseline volume MJRLE surgeries was excluded from the MJRLE comparison group but would be eligible for inclusion in the sepsis comparison group if this hospital had sufficient sepsis visits.
- More than 10% of their baseline episodes within the clinical episode or corresponding CESLG were touched by BPCI Advanced participants (hospital or PGP).
- They were located in a CBSA where more than 50% of baseline episodes in a given clinical episode were touched by BPCI Advanced participants (hospital or PGP).
- Finally, CJR hospitals were excluded from the comparison group pool for all clinical episodes in the orthopedic surgery CESLG. This CESLG includes MJRLE, the clinical episode corresponding to CJR.

**Step 2 – Excluding individual hospital visits:** We excluded individual discharges or outpatient procedures from the comparison group to further reduce the risk of contamination from other bundled payment episodes. Specifically, we applied the following exclusions:

- Discharges or procedures where the attending or operating physician listed on the claim belonged to a BPCI Advanced PGP, but which was not attributed to BPCI Advanced.
- Discharges or procedures where the beneficiary who made the visit was in a BPCI Advanced or CJR episode at the time of the visit (that is, the visit occurred within 90 days after the start of a BPCI Advanced or CJR episode).
- Hospital visits where the beneficiary who made the visit was treated in any hospital by a physician belonging to a BPCI Advanced PGP in the prior 90 days.
- Initial hospital discharge or procedure if a beneficiary had more than one discharge or procedure in the month of our data. This exclusion ensured that a beneficiary could only be selected into the sample one time, and that the survey we mailed to them referenced their most recent hospitalization. In that case only the most recent discharge or procedure was eligible for selection into our sample.



We applied the last two exclusions to the BPCI Advanced group as well to ensure that the characteristics of the beneficiaries would be similar between the two groups.

**Step 3 – Selecting BPCI Advanced beneficiaries:** We created sampling cells of unique combinations of clinical episodes based on age category (< 65, 65-74, 75-84, 85+) and the presence of a major complication or comorbidity (MCC) for each stratum. We selected a random proportional sample of BPCI Advanced beneficiaries within each sampling cell, subject to our oversample of racial or ethnic minorities.

**Step 4 – Selecting matched comparison hospital visits:** Lastly, each selected BPCI Advanced beneficiary was matched one-to-one with a comparison beneficiary from the same sampling cell.<sup>40</sup> Within sampling cells, comparison beneficiaries were matched to a given BPCI Advanced beneficiary using a nearest-neighbor propensity score approach. Propensity scores were estimated based on the beneficiary-, hospital-, and market-level factors described in Exhibit C.13 below.

**Exhibit C.13: Predictive Risk Factors Used to Match BPCI Advanced and Comparison Beneficiaries**

Domain	Variables
<b>Service Mix<sup>a</sup></b>	<ul style="list-style-type: none"> <li>• Clinical episode</li> <li>• Lower body fracture (MJRLE and Spine, Bone, and Joint strata only)</li> <li>• Knee procedure (MJRLE episode only)</li> <li>• Large vessel ischemic stroke (Stroke episodes only)</li> <li>• Intracerebral hemorrhage (Stroke episodes only)</li> <li>• Major complication or comorbidity</li> </ul>
<b>Patient Demographics and Enrollment</b>	<ul style="list-style-type: none"> <li>• Age (under 65, 65-74, 75-84, 85+)</li> <li>• Sex</li> <li>• Race/ethnicity<sup>b</sup></li> <li>• Dual eligibility status</li> <li>• Originally qualified for Medicare due to disability</li> </ul>
<b>Prior Utilization Measures</b>	<ul style="list-style-type: none"> <li>• Any inpatient admission in the prior 90 days</li> </ul>
<b>Discharging Hospital Characteristics</b>	<ul style="list-style-type: none"> <li>• 2017 linear HCAHPS score<sup>c</sup></li> <li>• Academic medical center</li> <li>• Bed size (≤250; 251-500; 500-850; &gt;850)</li> <li>• Safety-net status</li> <li>• Census region (Northeast, Midwest, South, West)</li> <li>• Urban</li> <li>• Ownership (for-profit, not-for-profit, government/other)</li> </ul>
<b>Neighborhood and Market Characteristics</b>	<ul style="list-style-type: none"> <li>• Area Deprivation Index<sup>d</sup></li> <li>• Mean personal income (CBSA level)</li> <li>• Percent of population older than 65 (county level)</li> <li>• Rurality<sup>e</sup></li> </ul>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

<sup>a</sup> Additional variables for MJRLE, spine, bone, and joint, and stroke episodes control for clinical heterogeneity that is not accounted for by MS-DRGs, and which is easily identifiable from ICD-9 and ICD-10 codes.

<sup>b</sup> Data on race and ethnicity come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

<sup>40</sup> Since beneficiaries in the oversample were necessarily exact-matched by race/ethnicity, these beneficiaries were only exact-matched by clinical episode and race/ethnicity, not MCC or age category.

- <sup>c</sup> The linear HCAHPS score captures patient ratings of their overall experience with a hospital from 0-100, adjusted for patient mix and HCAHPS survey mode. We use 2017 data to avoid possible contamination of HCAHPS responses attributable to BPCI Advanced. This is the only hospital-level factor we included in our propensity score model that was not used by CMS to define the hospital-level target price peer groups.
- <sup>d</sup> The Area Deprivation Index is a measure of socioeconomic status developed by researchers at the University of Wisconsin: University of Wisconsin School of Medicine and Public Health. 2015 Area Deprivation Index Version 2.0. Downloaded from <https://www.neighborhoodatlas.medicine.wisc.edu/> on 8/1/2019.
- <sup>e</sup> Rurality was added as a matching variable beginning in Wave 3. Rurality indicates that a beneficiary resided in a ZIP code designated as rural by the Federal Office of Rural Health Policy (FORHP). Eligible ZIP codes were obtained in July 2022: <https://www.hrsa.gov/rural-health/about-us/what-is-rural/data-files>.

### *c. Administration of the Beneficiary Survey*

We mailed each sampled beneficiary a paper survey, a postcard reminder, and, for beneficiaries who did not respond to the initial mailings, a second paper survey using priority mail. The first survey was mailed to beneficiaries within about 90 days after leaving the hospital. In Wave 2, beneficiaries who did not respond to the paper survey were contacted via telephone between 148 and 173 days after leaving the hospital. We discontinued telephone follow-up in Wave 3 given low telephone response rates in Wave 2.

### *d. Outcome Measures*

The BPCI Advanced beneficiary survey instrument asked about seven measures of physical function and for each, respondents were asked to recall their status before the anchor hospitalization (question 2 through question 8), and to report their current functional status at the time of the survey (question 9 through question 15). The seven functional status measures include: (1) bathing, dressing, toileting, and eating; (2) planning regular tasks; (3) moving using a mobility device; (4) walking without resting; (5) going up or down stairs; (6) the frequency with which physical or emotional health interferes with regular social activities; and (7) the frequency with which pain interferes with normal activities.

For each functional status measure, we created trinary measures for improvement, maintenance or decline in initial function. The outcome is marked as improved if a patient moved to a better functional status level after the episode (such as, from “complete help needed” before the episode to “no help needed” after the episode) or if the patient recalled having the highest functional status prior to hospitalization and remained in that high status at the time of survey response (such as, “no help needed” both before hospitalization and after the episode). The outcome is marked as maintained function if the patient did not recall the highest or lowest function prior to hospitalization and reported that their function was the same before the episode and at the time of the survey. The outcome is marked as declined if the patient moved to a worse functional status level after the episode, or if the patient recalled having the lowest functional status prior to hospitalization and remained in that low status at the time of the survey.

The BPCI Advanced survey asked eight questions regarding care experience, and two regarding satisfaction with recovery and care received. All these questions were binary except for a trinary rating of all post-hospital care. More detail on measure specifications for these two domains are shown in Exhibit C.14. All questions and possible responses to each question are available in **Appendix P**.



**Exhibit C.14: Definitions for Measures of Care Experience and Satisfaction**

	Outcome Measure	Response If Indicator=1
<b>Care Experience</b>	Felt “very” or “somewhat” prepared to leave the hospital	Yes
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Agree/strongly agree
	Good understanding of how to take care of self before going home	Agree/strongly agree
	Medical staff clearly explained how to take medications before going home	Agree/strongly agree
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Agree/strongly agree
	Able to manage your health needs since returning home	Agree/strongly agree
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes
	Medical staff arranged services for you at home to help manage your health, if you needed it	Yes
<b>Satisfaction With Care and Recovery</b>	Overall satisfaction with recovery since leaving hospital	Extremely satisfied/quite a bit satisfied
	Rating of all post-hospital care from 0-10 <sup>a</sup>	High (Rating 9-10), middle (7-8), low (0-6)

*Note:*<sup>a</sup> The rating of post-hospital care was a trinary measure

*e. Analysis of the Beneficiary Survey*

*Analytic Approach*

We separately analyzed data from respondents whose episodes were initiated by hospitals and PGPs, to obtain estimated differences between BPCI Advanced and comparison beneficiaries averaged across all 34 clinical episodes within each group. We used logistic regression to estimate risk-adjusted differences in binary survey outcomes between the BPCI Advanced and comparison respondents. We used multinomial logistic regression to estimate differences for the trinary survey outcomes and estimated the joint significance of differences across all three categories. Standard errors were clustered at the hospital level.

This report focuses on results from surveys pooled across Waves 2 and 3. Results for Wave 2 can be found in **Appendix I** and **Appendix L** from The Fourth Evaluation Report.<sup>41</sup> We report results for Wave 3 in **Appendix M** of this report.

*Analytic Groups*

*Main Analysis*

We analyzed CESLGs that had a minimum detectable difference less than 10.0 percentage points.<sup>42</sup> We report analytic sample sizes, response rates, and minimum detectable differences for the

<sup>41</sup> The BPCI Advanced Fourth Evaluation Report is available for download at <https://innovation.cms.gov/innovation-models/bpci-advanced>.

<sup>42</sup> Power analyses indicated that a combined target sample size of 620 completed surveys (310 each for the BPCI Advanced and comparison groups, per stratum per wave) would enable us to reject the hypothesis of no difference in population percentages of our outcomes of interest with power of 0.8 when there is a true underlying difference of 10.0 percentage points in a binary variable with a baseline value of 50%.

CESLGs analyzed in Exhibits C.15-18. All responses were included in the aggregate analyses, regardless of whether the corresponding CESLG was powered for individual analysis.

**Exhibit C.15: Wave 2 and 3 Combined Response Rates, Sample Size, and Minimum Detectable Difference by CESLG, Hospital Episodes**

Hospital CESLGs	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced Respondents	Minimum Detectable Difference
Cardiac Care	24.6	25.1	-0.5 [0.601]	1,419	4.6
Cardiac Procedures	40.1	42.4	-2.3 [0.205]	761	6.3
GI Care	28.0	31.4	-3.4 [0.013]	744	6.3
Medical and Critical Care	21.0	21.9	-0.9 [0.224]	1,987	3.9
Neurological Care	24.4	24.2	0.2 [0.879]	699	6.7
Orthopedics	37.7	40.8	-3.1 [0.035]	1,100	5.2
Spinal Procedures	48.4	49.9	-1.5 [0.417]	766	6.3

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021 or July or August 2022.

**Exhibit C.16: Wave 2 and 3 Combined Response Rates, Sample Size, and Minimum Detectable Difference by CESLG, PGP Episodes**

PGP CESLGs	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced Respondents	Minimum Detectable Difference
Cardiac Care	26.1	25.1	1.0 [0.466]	635	7.0
Medical and Critical Care	23.5	21.7	1.8 [0.049]	1,272	5.0
Orthopedics	42.8	41.9	0.9 [0.597]	967	5.7
Spinal Procedures	50.9	49.3	1.6 [0.511]	374	9.2

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021 or July or August 2022.

**Exhibit C.17: Wave 3 Response Rates, Sample Size, and Minimum Detectable Difference by CESLG – Hospital Episodes**

Hospital CESLGs	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced Respondents	Minimum Detectable Difference
Cardiac Care	22.9	23.7	-0.8 [0.542]	529	7.6
Cardiac Procedures	40.8	45.1	-4.3 [0.089]	410	8.5
GI Care	29.1	33.4	-4.3 [0.012]	485	7.7
Medical and Critical Care	20.3	20.5	-0.1 [0.900]	539	7.6
Neurological Care	24.4	23.9	0.4 [0.759]	436	8.5
Orthopedics	40.2	43.9	-3.8 [0.074]	523	7.5
Spinal Procedures	50.4	50.6	-0.2 [0.925]	465	8.2

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021 or July or August 2022.

**Exhibit C.18: Wave 3 Response Rates, Sample Size, and Minimum Detectable Difference by CESLG – PGP Episodes**

PGP CESLGs	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced Respondents	Minimum Detectable Difference
Medical and Critical Care	22.8	24.6	-1.8 [0.195]	428	8.0
Orthopedics	44.3	47.2	-3.0 [0.187]	510	7.7

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021 or July or August 2022.

*Underserved Populations*

We analyzed subgroups defined by race or ethnicity corresponding to our oversample, as well as beneficiaries who were dually eligible for Medicare and Medicaid. We report response rates, analytic sample sizes, and minimum detectable differences for the populations analyzed in Exhibits C.19 and C.20.

**Exhibit C.19: Wave 2 and 3 Pooled Response Rates, Sample Size, and Minimum Detectable Difference by Underserved Population**

Underserved Population	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced N	Minimum Detectable Difference
Black or African American Beneficiaries With Hospital Episodes	17.6	18.3	-0.7 [0.477]	720	6.5
Dually Eligible Beneficiaries With Hospital Episodes	12.7	14.3	-1.6 [0.006]	973	5.5
Dually Eligible Beneficiaries With PGP Episodes	14.2	13.6	0.6 [0.535]	430	8.6

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021.

**Exhibit C.20: Wave 3 Response Rates, Sample Size, and Minimum Detectable Difference by Underserved Population**

Underserved Population	BPCI Advanced Response Rate (%)	Comparison Response Rate (%)	Difference (pp) [p-value]	BPCI Advanced N	Minimum Detectable Difference
Black or African American Beneficiaries With Hospital Episodes	18.7	19.0	-0.3 [0.820]	359	9.2
Dually Eligible beneficiaries With Hospital Episodes	13.3	14.7	-1.4 [0.117]	406	8.5

**Source:** The BPCI Advanced evaluation team’s analysis of BPCI Advanced beneficiary survey responses for hospital discharges or outpatient procedures that occurred in July or August 2021.

## Weighting

For each of the strata we calculated entropy-balanced weights representative of the BPCI Advanced respondents to improve the generalizability of results. The weights account for the possibility that BPCI Advanced yields different outcomes for different types of beneficiaries. For example, if BPCI Advanced leads to improved functional status for beneficiaries who are dually eligible for Medicaid, but not for those without dual eligibility, and dually eligible beneficiaries are under-represented among respondents, then our estimates would understate the true impact of BPCI Advanced. Weighting the respondents to reflect the overall population mitigates the potential for this problem.

The purpose of weighting the comparison group to reflect the BPCI Advanced group is to obtain “doubly robust” estimates of the difference between BPCI Advanced and comparison respondents.<sup>43</sup> This means if either the regression or weights are correctly specified our estimates should still be unbiased: they do not both need to be correctly specified.

Within each CESLG, we applied weights to the analytic data in two stages. First, we calculated entropy-balancing weights<sup>44</sup> that made the BPCI Advanced respondents representative of the BPCI Advanced population (that is, the sampling frame) based on the risk-adjusting factors described in Exhibit C.21 below. Second, we calculated entropy-balancing weights that made the comparison respondents representative of the (weighted) BPCI Advanced respondents, such that both groups reflected the BPCI Advanced population after applying the survey weights.

We calculated separate entropy-balancing weights for our analysis of underserved populations. For these analyses, we separately weighted respondents from the underserved population to reflect the sampling universe of underserved beneficiaries, and weighted respondents from the reference population to reflect the sampling universe of reference beneficiaries. We then separately weighted underserved respondents from the comparison group to be balanced against underserved BPCI Advanced respondents, and reference group respondents in the comparison group to be balanced against reference BPCI Advanced respondents.

## Controlling for Differences in Patient Mix, Discharging Hospital, and Neighborhood

We performed regression-based risk adjustment to ensure comparability between the BPCI Advanced and comparison groups, which included the factors listed in Exhibit C21.

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<sup>43</sup> Robins JM, Rotnitzky A, Zhao LF. (1994) Estimation of regression coefficients when some regressors are not always observed. *Journal of the American Statistical Association*; 89(427); 846-866.4.

<sup>44</sup> Hainmuller J. (2012). Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. *Political Analysis* ; 20;25–46.

Hainmueller J, Xu Y. (2013) ebalance: A Stata Package for Entropy Balancing. *Journal of Statistical Software*; 54(7),1-18.

**Exhibit C.21: Predictive risk factors used to risk adjust survey outcomes**

Domain	Variables
<b>Service Mix<sup>a</sup></b>	<ul style="list-style-type: none"> <li>• Clinical-episode type<sup>b</sup></li> <li>• Major complication or comorbidity</li> <li>• Lower body fracture (MJRLE and Spine, Bone, and Joint strata only)</li> <li>• Knee procedure (MJRLE episode only)</li> <li>• Large vessel ischemic stroke (Stroke episodes only)</li> <li>• Intracerebral hemorrhage (Stroke episodes only)</li> </ul>
<b>Patient Demographics and Enrollment</b>	<ul style="list-style-type: none"> <li>• Age (under 65, 65-74, 75-84, 85+)</li> <li>• Sex</li> <li>• Race/ethnicity<sup>c</sup></li> <li>• Dual eligibility status</li> <li>• Respondent obtained 4-year degree or higher</li> </ul>
<b>Prior health conditions</b>	<ul style="list-style-type: none"> <li>• HCC score: index score based on the beneficiary’s diagnosis information during the 6 months prior to the episode start date, using v22 of CMS’s 2019 Risk Score software and diagnosis to chronic condition mappings</li> <li>• Squared HCC score</li> <li>• Functional status using three summary measures<sup>d</sup></li> </ul>
<b>Prior utilization measures</b>	<ul style="list-style-type: none"> <li>• Any inpatient admission in the prior 6 months</li> <li>• Any other institutional care (SNF, IRF, or LTCH, or psychiatric hospital) in prior 6 months</li> <li>• Any nursing home care in the prior 6 months</li> </ul>
<b>Discharging Hospital Characteristics</b>	<ul style="list-style-type: none"> <li>• 2017 linear HCAHPS score<sup>e</sup></li> </ul>
<b>Neighborhood Characteristics</b>	<ul style="list-style-type: none"> <li>• Area Deprivation Index<sup>f</sup></li> </ul>
<b>Survey Dimensions</b>	<ul style="list-style-type: none"> <li>• Proxy status (beneficiary had help from someone else in responding to the survey)</li> <li>• Survey mode (response obtained via mail versus telephone)</li> <li>• Days elapsed between leaving the hospital and survey response</li> </ul>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

<sup>a</sup> Additional variables for MJRLE, spine, bone, and joint, and stroke episodes control for clinical heterogeneity that is not accounted for by MS-DRGs, and which is easily identifiable from ICD-10 codes.

<sup>b</sup> Analyses of underserved populations used CESLG fixed effects instead of clinical episode fixed effects due to many clinical episodes having few or no respondents among the underserved population.

<sup>c</sup> Data on race and ethnicity come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

<sup>d</sup> Three of the functional status questions have only three possible responses, two functional status questions have four possible responses, and two have five. For each of the outcomes with less than five possible responses, the best functional status was coded as 1, the middle status (or two statuses) was coded as 2, and the worst functional status was coded as 3. We created a variable summing the number of functional measures with 2, the number with 3, and also a binary indicator for “missing functional status.” For the two measures with five possible responses we created binary indicators for “all of the time/most of the time” and created a control variable summing the number of indicators equal to 1, as well as a binary indicator for “missing activity status.” For functional status variables with four possible responses, we considered alternative cutoffs for coding responses as 1, 2, or 3; however none of these alternative cutoffs altered the results in any meaningful way.

<sup>e</sup> The linear HCAHPS score captures patient ratings of their overall experience with a hospital from 0-100, adjusted for patient mix and HCAHPS survey mode. We use 2017 data to avoid possible contamination of HCAHPS responses attributable to BPCI Advanced.

<sup>f</sup> The Area Deprivation Index (ADI) is a measure of socioeconomic status developed by researchers at the University of Wisconsin.

The risk-adjustment model accounts for certain factors that could not be incorporated into our matching algorithm applied at the time of sampling.<sup>45</sup> We also matched on six attributes of the discharging hospital, five of which were similar to those used by CMS to define target price peer groups, but were not included in our final risk-adjustment model.<sup>46</sup>

For our aggregate and CESLG-level analyses, the regression model for each outcome can be expressed as:

$$Y_{ijk} = \delta \text{BPCIAdvanced}_{ij} + \beta_k X_{ij} + CE_i + \varepsilon_{ijk}$$

$Y_{ijk}$  is the outcome of interest for individual  $i$ , at provider  $j$ , in clinical episode  $k$ .  $X$  refers to the risk-adjustment variables (listed above),  $CE$  indicates individual indicators for each clinical episode, and  $\text{BPCIAdvanced}$  is an indicator for a beneficiary who had their procedure by a BPCI Advanced participating hospital or PGP. The relationship between  $Y$  and  $\text{BPCIAdvanced}$  (indicated by  $\delta$ ) represents the difference between BPCI Advanced and comparison respondents across all clinical episodes.

Our regression equation for underserved populations can be expressed as:

$$Y_{ijk} = \delta_1 \text{UP}_i + \delta_2 \text{BPCIAdvanced}_{ij} + \delta_3 (\text{UP}_i * \text{BPCIAdvanced}_{ij}) + \beta_k X_{ij} + \text{CESLG}_i + \varepsilon_{ijk}$$

Where  $\text{UP}_i$  indicates individual  $i$  belongs to a given underserved population, and  $\text{CESLG}_i$  reflect individual indicator for each CESLG.  $\delta_1$  captures the difference in outcomes between respondents in the underserved population and their reference group (such as, dual eligible beneficiaries relative to non-dual eligible beneficiaries);  $\delta_2$  captures the difference in outcomes between BPCI Advanced and comparison respondents in the reference group; and  $\delta_3$  captures the difference between BPCI Advanced and comparison respondents who belong to an underserved population relative to the difference between BPCI Advanced and comparison respondents in the reference group. The difference between BPCI Advanced and comparison respondents among members of the underserved population equals  $\delta_2 + \delta_3$ .

### C. Primary Data Source Description, Sample, and Methods

This section describes the sample included in each of the primary qualitative data collection activities and the data collected, as well as the methods used to analyze the data in Section II BPCI Advanced Participants, Section IV BPCI Advanced Care Transformation, and Section VIII BPCI Advanced Overlap With Accountable Care Organizations.

<sup>45</sup> For example, we did not have information about education and pre-hospital functional status at the time of sampling; those data come from the survey responses. Likewise, factors such as HCC index score and recent institutional care could not be reliably identified at the time of survey sampling because additional claims runout time would be required and waiting for the data could delay the survey and increase recall bias.

<sup>46</sup> Results from the original BPCI evaluation indicated that these hospital-level factors were not strongly correlated with survey outcomes. Matching on these factors allows us to ensure the BPCI Advanced and comparison groups are reasonably similar with regards to these factors, without the loss of statistical precision (larger standard errors) that would likely result from directly controlling for such measures that only weakly predict survey outcomes.



## 1. Site Visits

To inform the evaluation in Model Years 4 and 5, the BPCI Advanced evaluation team conducted virtual site visits with 11 episode initiators in Model Year 4 and 12 episode initiators in Model Year 5. Site visits were conducted virtually due to the COVID-19 PHE using Microsoft Teams. Site visits consisted of approximately six separate one-hour interviews with representatives from each episode initiator, including executive and financial leaders, care redesign leaders, care coordination staff, front-line nursing and physician staff who provide direct care for patients in BPCI Advanced, and representatives from conveners (when applicable). During Model Year 5, the evaluation team also interviewed 11 beneficiaries treated by BPCI Advanced participants in Model Year 5 to learn about their care experience during their hospitalization or procedure, their discharge and transition to the next care setting, as well as their experience during the 90-day discharge period. During site visits, model participants were asked about BPCI Advanced participation decisions, CESLG selection, the impact of Model Year 4 changes, the impact of the COVID-19 PHE, care transformation and care redesign activities, external provider partnerships, and general successes and challenges in the model. Site visits also provided an opportunity to learn about beneficiary, participant, or market level factors that may influence variation in the effect of the model.

### a. Sampling Approach

The Model Year 4 and Model Year 5 site visit samples were purposive to ensure a diverse sample. Both Model Year 4 and Model Year 5 site visit samples included a mix of hospitals and PGPs that:

- Participated with or without a convener;
- Had positive or negative financial performance in BPCI Advanced;
- Participated in a variety of CESLGs;
- Were located in a variety of geographic markets, including rural areas;
- Were active in Model Years 1-2, as well as those who joined in Model Year 3; and
- Did or did not have experience in previous Medicare initiatives.

The characteristics of the final sample of episode initiators for Model Years 4 and 5 are shown in Exhibit C.22.

**Exhibit C.22: Virtual Site Visit Episode Initiator Characteristics, Model Years 4-5**

Episode Initiator Type	MY4 Count	MY5 Count
Hospital	6	6
PGP	5	6
<b>Total</b>	<b>11</b>	<b>12</b>

Participant Role	MY4 Count	MY5 Count
Convener	1	0
Downstream episode initiator	7	7
Non-convener participant	3	5
<b>Total</b>	<b>11</b>	<b>12</b>

Clinical Episode Type	CESLG Selection	MY4 Count	MY5 Count
Medical	Cardiac Care	3	6
	GI Care	1	4
	Medical & Critical Care	6	8
	Neurological Care	5	6
Surgical	Cardiac Procedures	0	3
	GI Surgery	0	2
	Orthopedics	6	5
	Spinal Procedures	2	4
<b>Total</b>		<b>23</b>	<b>38</b>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of the CMS BPCI Advanced Database as of January 1, 2021.

*b. Interview Protocols*

The site visit interview protocols were designed to capture information about a variety of topics, including entry decisions, CESLG selection, beneficiary and clinician awareness of the model, the patient populations served by the model, care coordination and care redesign strategies, the impact of the COVID-19 PHE and the Model Year 4 changes on participant experience in the model, and overlap of BPCI Advanced with other models. Interview protocols were tailored to each type of respondent. For example, care redesign leaders were asked targeted questions about care redesign activities, while financial and executive leaders were asked about entry decisions, financial performance, and partner selection. Topics covered in each interview are shown in Exhibit C.23.

**Exhibit C.23: Virtual Site Visit Interview Topics by Interviewee Type**

Topics	Executive and Financial Leadership	Care Redesign Leadership	Care Coordination Staff	Patient Care (Nursing)	Patient Care (Physician)	Convener
Beneficiary Awareness of BPCI Advanced		MY4	MY4	MY4	MY4	
BPCI Advanced Patient Population				MY5		
BPCI Advanced Successes & Challenges	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5
Care Coordination			MY4 MY5			
Care Redesign	MY5	MY4 MY5		MY4 MY5	MY4 MY5	
CESLG Selection	MY4 MY5					MY4
Clinician Awareness of Model		MY4	MY4	MY4	MY4	
Entry Decisions	MY4					MY4



Topics	Executive and Financial Leadership	Care Redesign Leadership	Care Coordination Staff	Patient Care (Nursing)	Patient Care (Physician)	Convener
Financial Performance	MY4 MY5					
Impact of BPCI Advanced	MY4	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5
Impact of COVID-19 PHE	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5	MY4 MY5
Impact of Model Year 4 Changes	MY4 MY5	MY4 MY5	MY4	MY4	MY4	MY4 MY5
Ongoing Convener Support of the Episode Initiator						MY4 MY5
Overlap with Other Models	MY5	MY5				
Role of Care Navigators/ Care Coordinators			MY4 MY5			

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s site visit protocols for Model Years 4-5.

## 2. Key Informant Interviews (KIIs)

While site visits sought information about how participants approached BPCI Advanced, key informant interviews (KIIs) provided the opportunity for more in-depth discussion about particular topics of interest to CMS and the evaluation team. KIIs were 30-45-minute virtual interviews conducted over Microsoft Teams with episode initiator and convener staff who were most knowledgeable about the topic of interest. Topics of interest varied in Model Year 4, Model Year 5, and Model Year 6. The BPCI Advanced evaluation team conducted 54 KIIs in Model Year 4 (25 in round 1 and 29 in round 2), 38 KIIs in Model Year 5 (24 in round 1 and 14 in round 2), and 32 KIIs in Model Year 6 (19 in round 1 and 13 in round 2). All KIIs followed semi-structured protocols to keep the interview focused while allowing flexibility in topic exploration.

### a. Model Year 4

#### Round 1

The BPCI Advanced evaluation team conducted the first round of KIIs in Model Year 4 to understand entry decisions and episode selection for co-located hospital and PGP episode initiators. When a BPCI Advanced PGP episode initiator has attributed episodes at a BPCI Advanced participating hospital during the intervention period, the PGP episode initiator and hospital episode initiator are considered to be “co-located.” The topic of co-location was of interest to the BPCI Advanced Model team because co-location can have implications on episode initiators’ entry decisions, clinical episode selection, and episode attribution. To explore the relationship between co-located episode initiators, the evaluation team conducted 19 interviews with hospital and PGP episode initiators between March and April 2021.

The evaluation team identified 25 episode initiators from a sample composed of co-located episode initiators that were:

- Participating in BPCI Advanced in Model Year 4; and
- Had at least 50 PGP episode initiator-attributed episodes during Model Years 1 and 2 at the co-located BPCI Advanced participating hospital based on Medicare Part A and B claims data.

To achieve a diverse sample, the evaluation team ensured that episode initiators had a mix of:

- Counts of overlapping clinical episodes; and
- Convener and non-convener participants (with a variety of conveners among the convener participants).

The evaluation team achieved a 100% response rate during recruitment, with all 25 identified episode initiators agreeing to participate in the KIIs. The final sample included:

- **7 pairs** of co-located hospital and PGP episode initiators (where both the hospital and PGP were asked to participate in KIIs); and
- **11 individual** co-located hospital and PGP episode initiators.
  - These individual episode initiators had co-located episode initiator pairs, but the evaluation team did not arrange interviews with their co-located episode initiators. This decision was made to reduce provider and convener burden and ensure a diverse sample of episode initiators.

The characteristics of the final sample of episode initiators are shown in Exhibit C.24.

**Exhibit C.24: Model Year 4, Round 1 Key Informant (KII) Interviewee Characteristics**

Episode Initiator Type	Number Interviewed	Number With a Convener	Number Without a Convener
Hospital	14	10	4
PGP	11	8	3
<b>Total</b>	<b>25</b>	<b>18</b>	<b>7</b>

*Source:* The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, and the CMS BPCI Advanced Database as of March 10, 2021 for the qualitative KII sample for Model Year 4 data collection.

**Round 2**

The BPCI Advanced evaluation team conducted a second round of KIIs in Model Year 4 to explore how convener participants, downstream episode initiators,<sup>47</sup> and non-convener participant episode initiators responded to changes in the BPCI Advanced Model that went into effect in Model Year 4.

<sup>47</sup> Downstream episode initiators are hospitals and PGPs that are participating in BPCI Advanced with a convener organization.

The BPCI Advanced evaluation team identified 48 Model Year 4 participants for potential interviews based on CESLG selection data. The evaluation team identified a sample of 30 for the KIIs. The selected participants included conveners, downstream episode initiators, and non-conveners episode initiators (collectively referred to as participants) participating in Model Year 4 with a mix of:

- Hospital and PGP episode initiators;
- Non-provider conveners and health system conveners;
- Episode initiators in different geographic regions (Northeast, South, Midwest, West)<sup>48</sup> and conveners participating with episode initiators across multiple geographic regions;
- Participants with 40 or more patients in at least one of the clinical episodes within their selected CESLGs, for the most recent performance period with complete data;
- Episode initiators participating in different CESLGs, including orthopedic CESLGs for the Model Year 4 change specific to MJRLE;
- Episode initiators participating in CESLGs that differ from their clinical episodes in Model Years 1-3;
- Episode initiators reporting alternate quality measures for one or more of their CESLGs; and
- Participants that began participating in Model Year 1 and in Model Year 3.

In April and May of 2021, the evaluation team conducted 29 KIIs with representatives. The evaluation team started outreach by sending an email to the designated point of contact for each BPCI Advanced participant asking for a 30-45-minute telephone interview with members of executive or financial leadership who the evaluation team anticipated would be able to discuss responses to Model Year 4 changes. The evaluation team tailored interview questions to organizational characteristics, survey responses, data on CESLG selection, and use of alternate quality measures. The characteristics of the final sample of episode initiators are shown in Exhibit C.25.

**Exhibit C.25: Model Year 4, Round 2 Key Informant Interview (KII) Interviewee Characteristics**

Key Informant (KII) Interviewee Characteristics		Count
Episode Initiator Type	Hospital	17
	PGP	4
	<b>Total</b>	<b>21</b>
Participant Role	Conveners	8
	Downstream episode initiator	12
	Non-conveners participant	9
	<b>Total</b>	<b>29</b>

<sup>48</sup> Regions are defined as [US Census regions](#): Northeast, South, Midwest, and West.

Clinical Episode Type	CESLG Selection	Count
Medical	Cardiac Care	13
	GI Care	5
	Medical & Critical Care	12
	Neurological Care	9
Surgical	Cardiac Procedures	4
	GI Surgery	3
	Orthopedics	12
	Spinal Procedures	8
<b>Total</b>		<b>66</b>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, the CMS BPCI Database, and the CMS BPCI Advanced Database as of January 13, 2021 for the qualitative KII sample for Model Year 4 data collection.

### *b. Model Year 5*

#### *Round 1*

In Model Year 5, the BPCI Advanced evaluation team conducted the first round of KIIs with model participants to identify what care redesign strategies (if any) participants use to care for patients from populations that have been historically underserved. Historically underserved populations include low-income Medicare beneficiaries, beneficiaries who identify as belonging to one or more racial or ethnic minority group, and beneficiaries who live in rural or underserved areas, among others. Understanding the health equity implications of BPCI Advanced and other value-based payment models has been a priority for the Innovation Center. In order to more fully understand how the BPCI Advanced model is impacting care for underserved patients, the evaluation team conducted 24 phone interviews with BPCI Advanced participants between April and May 2022.

To create a sample of participants to interview, the evaluation team utilized the ADI to identify episode initiators and conveners that serve a large percentage of patients from populations that have been historically underserved. The ADI is based on a measure created by the Health Resources & Services Administration (HRSA) that allows for rankings of neighborhoods by socioeconomic disadvantage in a region of interest (such as, the state or national level) using factors like income, education, employment, and housing quality. Neighborhoods are ranked from 1 to 100, with 100 being the most socioeconomically disadvantaged.

The evaluation team assigned a mean ADI value to each episode initiator active in Model Year 3 based on the zip codes of the beneficiaries with clinical episodes at each episode initiator during the first three years of the model. The team prioritized interviewing organizations with a mean ADI of 70 or higher in order to speak with participants who serve a large percentage of patients from populations that have been historically underserved.<sup>49</sup> That said, the team also included participants

<sup>49</sup> Most researchers define a high ADI as a ranking of 80 or higher but using this threshold severely limited the evaluation team’s sample, so the threshold was lowered to 70.

with low ADI scores in the sample to try and understand if all episode initiators were adopting similar care redesign strategies regardless of the socio-economic distribution of their patients.

The evaluation team identified 28 model participants, including 25 episode initiators and three conveners who work with episode initiators that had a mean ADI score of greater than 70. The sample included participants that varied by:

- Episode initiator type (hospitals and PGPs);
- Participant role (downstream episode initiators, non-convener participants, convener participants);
- Mean ADI (ADI > 70 and ADI < 70);
- Safety net hospital status (safety net hospital and non-safety net hospital);
- Urban/Rural classification; and
- Geographic location.

The evaluation team achieved an 86% response rate during recruitment, with 24 of 28 identified model participants agreeing to participate in the KIIs. The characteristics of the participants in the final sample are shown in Exhibit C.26.

**Exhibit C.26: Model Year 5, Round 1 Key Informant (KII) Interviewee Characteristics**

Key Informant (KII) Interviewee Characteristics		Count
Episode Initiator Type	Hospital	14
	PGP	8
	<b>Total</b>	<b>22</b>
Participant Role	Convener	2
	Downstream episode initiator	20
	Non-convener participant	2
	<b>Total</b>	<b>24</b>
Mean ADI for Episode Initiators	ADI>70	14
	ADI<70	8
	<b>Total</b>	<b>22</b>
Safety Net Hospital Status	Safety net hospital status <sup>a</sup>	2
	Non-safety net hospital status	20
	<b>Total</b>	<b>22</b>
Urban/Rural Classification of Episode Initiators	Urban	13
	Rural	9
	<b>Total</b>	<b>22</b>

**Note:** Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

<sup>a</sup> There are a limited amount of safety net hospitals participating in BPCI Advanced, which is why only two safety net hospitals were included in the final sample.

**Source:** The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, the CMS BPCI Database, and the CMS BPCI Advanced Database as of March 14, 2022 for the qualitative KII sample for Model Year 5 data collection.

## Round 2

The October 1, 2018-December 31, 2019 claims analyses included in the third annual BPCI Advanced Model Evaluation Report indicated a statistically significant reduction in hospital 90-day readmission rates for surgical episodes among BPCI Advanced participants relative to the comparison group. The magnitude of the reductions was similar for PGP episode initiators and hospital episode initiators, though only the PGP estimate was statistically significant. The evaluation team found no statistically significant change in readmission rates for medical episodes relative to the comparison group. This finding suggests that episode initiators have made changes to how they deliver care, particularly for surgical episodes, that may have resulted in lower readmissions and improved outcomes for beneficiaries.

To better understand these findings, in Model Year 5, the evaluation team conducted a second round of 14 KIIs with BPCI Advanced participants to explore:

- Care redesign strategies that episode initiators have implemented to reduce hospital readmissions in medical and surgical clinical episodes;
- Challenges to reducing hospital readmissions in medical clinical episodes;
- Differences in care redesign approaches to reduce hospital readmissions between hospital and PGP episode initiators;
- Differences in care redesign approaches to reduce hospital readmissions between medical and surgical clinical episodes; and
- The influence of patient demographics, market dynamics and organizational factors on whether episode initiators are successfully able to reduce hospital readmissions.

The evaluation team identified a sample of 16 participants (both episode initiators and conveners). Episode initiators in the sample met the following criteria:

- Were participating in BPCI Advanced in Model Year 5 as of early 2022;
- Had at least one clinical episode in Model Year 4 with 40 or more episodes;
- Had at least one clinical episode that both:
  - Had an estimated reduction in risk-adjusted 90-day hospital readmission rate between the baseline period and Model Year 3; and
  - Remained active for the episode initiator in Model Year 5 as of early 2022; and
- Had not participated in a prior site visit or KII with the evaluation team.

The evaluation team included conveners in the sample that were working with episode initiators that met the above criteria. Among the episode initiators and conveners that met the above criteria, the evaluation team prioritized conveners and downstream episode initiators who achieved reductions in 90-day hospital readmissions in surgical clinical episodes over medical clinical episodes to understand how these participants achieved reductions in readmissions.

To identify hospitals and PGPs that may have had some success in reducing hospital readmissions, the evaluation team calculated risk-adjusted 90-day hospital readmissions rates for the baseline period (Q2 2013 through Q4 2017) and the intervention period (2020) for each episode initiator

participating in the model during Model Year 3. The team used the difference between the two rates to identify episode initiators that have increased or decreased their 90-day hospital readmission rate between the baseline and intervention period. The evaluation team used these estimates for sampling purposes only, in order to identify episode initiators with varying success in reducing readmissions. The team did not calculate confidence intervals to determine if changes in readmission rates were statistically significant.

In July and August 2022, the evaluation team conducted 14 KIIs. The evaluation team tailored interview questions to each participant’s organizational characteristics and the evaluation team’s understanding of their success (or lack of success) in reducing hospital readmissions between the baseline period and Model Year 3. The characteristics of the final sample of episode initiators are shown in Exhibit C.27.

**Exhibit C.27: Model Year 5, Round 2 Key Informant (KII) Interviewee Characteristics**

Key Informant (KII) Interviewee Characteristics		Count
Episode Initiator Type	Hospital	4
	PGP	5
	<b>Total</b>	<b>9</b>
Participant Role	Convener	5
	Downstream episode initiator	8
	Non-convener participant	1
	<b>Total</b>	<b>14</b>

**Source:** The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, the CMS BPCI Database, and the CMS BPCI Advanced Database as of March 10, 2023 for the qualitative KII sample for Model Year 5 data collection.

*c. Model Year 6*

**Round 1**

In Model Year 6, the BPCI Advanced evaluation team conducted a first round of KIIs with current and former model participants who had concurrently participated in Medicare ACOs. The purpose of this round of interviews was to understand how participation in Medicare ACOs impacted participant experience in BPCI Advanced, including care redesign strategies and outcomes (both patient outcomes and payment/utilization outcomes). The evaluation team conducted 19 phone interviews with current and former model participants between April and May 2023.

To build a sample of potential interviewees, the evaluation team used the CMS Master Data Management (MDM) provider extract to identify Model Year 6 (2023) BPCI Advanced participants who participated in a Medicare ACO at any point between January 2020 and February 2023. Due to the small number of BPCI Advanced participants in Model Year 6 who also participated in a Medicare ACO, the team identified 19 former BPCI Advanced participants who were active in the model as of Model Year 5 (2022) and concurrently participated in a Medicare ACO at any point since 2020. The addition of the Model Year 5 participants led to a total sample of 26 participants who had concurrent participation in BPCI Advanced and a Medicare ACO between January 2020 and February 2023.



One limitation of the sampling process was that the MDM provider extract sometimes only identifies a broader health system as being part of a Medicare ACO, but not every hospital underneath the health system is flagged. As a result of this limitation, the sample comprised a majority of PGPs and only three hospitals.

The types of Medicare ACOs that active and former BPCI Advanced participants participated in included Medicare Shared Savings Program ACOs and GPDC and REACH ACOs. All interviewees in the priority sample had at least 10 preliminarily reconciled episodes in Performance Period 5 (for Model Year 5 participants) or Performance Period 7 (for Model Year 6 participants). This minimum threshold was established to remove participants with little to no episode volume who may not be able to speak to BPCI Advanced strategies, while still attempting to interview as many active Model Year 6 participants as possible.

The evaluation team achieved a 73% response rate during recruitment, with 19 of 26 model participants agreeing to participate in the KIIs. The characteristics of the interviewees are shown in Exhibit C.28.

**Exhibit C.28: Model Year 6, Round 1 Key Informant (KII) Interviewee Characteristics**

Key Informant (KII) Interviewee Characteristics		Count
Episode Initiator Type	Hospital	3
	PGP	16
	<b>Total</b>	<b>19</b>
Participant Role	Downstream episode initiator	18
	Non-convener participant	1
	<b>Total</b>	<b>19</b>
Geographic Distribution of Interviewees	Midwest	2
	Northeast	1
	South	14
	West	2
	<b>Total</b>	<b>19</b>
Model Year Distribution	Model Year 5	13
	Model Year 6	6
	<b>Total</b>	<b>19</b>
Distribution of Medicare ACO Participation	Medicare Shared Savings Program Enhanced	9
	Medicare Shared Savings Program Basic Track 1 or 2	9
	Medicare Shared Savings Program Basic Track 3	3
	GPDC Model	2
	ACO REACH	2
	<b>Total</b>	<b>25</b>
ACO Leadership	Physician-led	6
	Jointly-led	4
	Hospital-led	2
	Not asked/unsure	7
	<b>Total</b>	<b>19</b>

Clinical Episode Type	CESLG Selection	Count
Medical	Cardiac Care	9
	GI Care	7
	Medical & Critical Care	7
	Neurological Care	3
Surgical	Cardiac Procedures	4
	GI Surgery	0
	Orthopedics	10
	Spinal Procedures	5
<b>Total</b>		<b>45</b>

**Note:** While the team attempted to diversify the sample by state and geographic region, multiple episode initiators from Florida were included in the sample due to the team’s objective to interview active Model Year 6 participants. Additionally, some interviewees participated in a combination of the ACO tracks/models since January 2020. Lastly, some interviewees participated in a combination of CESLGs. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, the CMS BPCI Database, and the CMS BPCI Advanced Database as of January 1, 2020 for the qualitative KII sample for Model Year 6 data collection.

### Round 2

The evaluation team interviewed BPCI Advanced participants to better understand whether and how they coordinate with primary care physicians (PCPs), how participation in BPCI Advanced has influenced that coordination, and perceptions of how this coordination influences BPCI Advanced outcomes. The evaluation team identified a sample of 20 episode initiators (both downstream episode initiators and non-conveners participants).<sup>50</sup> Episode initiators in the sample met the following criteria:

- Were actively participating in the model in Model Year 6;
- Had at least one clinical episode type in Model Year 5 with 20 or more attributed episodes;<sup>51</sup>
- Did not participate in a prior site visit or Model Year 5 KII;
- Were not included in the Model Year 6 site visit sample;<sup>52</sup>

Many participants exited BPCI Advanced prior to Model Year 6, reducing the number of available episode initiators from which to sample. To the extent possible, the sample included a mix of downstream episode initiators and non-conveners participants, as well as a mix of acute care hospitals and PGPs participating in varying CESLGs. Unlike in prior years, the team did not sample any conveners, because the evaluation team assumed that downstream episode initiators

<sup>50</sup> 337 episode initiators were active in Model Year 6. 112 of those active episode initiators met the outlined sampling criteria: 72 hospital episode initiators and 40 PGP episode initiators.

<sup>51</sup> Wherever possible, the evaluation team selected episode initiators with at least one clinical episode type in Model Year 5 with 40 or more attributed episodes.

<sup>52</sup> Additionally, the evaluation team excluded downstream episode initiators that belonged to the same health system as a downstream episode initiator that was included in the site visit sample.

would be better able to speak to primary care coordination. When possible, the sample limited the number of episode initiators participating with the same convener.

In May and June of 2023, the evaluation team conducted 13 KIIs. The limited number of remaining PGPs in the model and their concentration among a few conveners and consultants, limited the number of unique PGP perspectives that the evaluation team was able to include in their qualitative activities. Of the PGPs identified in the sample, two did not respond to requests for an interview. The remaining three PGPs in the priority sample were all affiliated with the same consultant group. The evaluation team had one meeting with this consultant rather than conducting separate interviews with the three individual episode initiators, as the evaluation team did not expect responses to differ. This consultant specializes in forming PGPs specifically for BPCI Advanced and manages all the BPCI Advanced-related activities for their PGPs. The small number of PGPs resulted in 12 of 13 interviews being with hospital episode initiators. The characteristics of the interviewees are shown in Exhibit C.29.

**Exhibit C.29: Model Year 6, Round 2 Key Informant (KII) Interviewee Characteristics**

Key Informant (KII) Interviewee Characteristics		Count
Episode Initiator Type	Hospital	12
	PGP	3
	<b>Total</b>	<b>15</b>
Participant Role	Downstream episode initiator	6
	Non-convener participant	9
	<b>Total</b>	<b>15</b>
Clinical Episode Type	Medical only	7
	Surgical only	2
	Both medical and surgical	4
	<b>Total</b>	<b>13</b>

Clinical Episode Type	CESLG Selection	Count
Medical	Cardiac Care	5
	GI Care	3
	Medical & Critical Care	9
	Neurological Care	5
	Cardiac Procedures	2
Surgical	GI Surgery	2
	Orthopedics	1
	Spinal Procedures	2
	<b>Total</b>	<b>29</b>

**Note:** The three PGPs used the same consultant, so the evaluation team conducted a single interview with the consultant rather than conducting three separate interviews. Additionally, episode initiators may have participated in more than one CESLG. Please refer to **Appendix A** for the definitions of acronyms used within this exhibit.

**Source:** The BPCI Advanced evaluation team’s analysis of the Master Data Management (MDM) Program participation database, the CMS public model participation files, the CMS BPCI Database, and the CMS BPCI Advanced Database as of January 1, 2020 for the qualitative KII sample for Model Year 6 data collection.

### 3. Qualitative Analysis

Site visits and KIIs were recorded and transcribed, and transcriptions were analyzed using ATLAS.ti (Scientific Software Development GmbH, Berlin, Germany), a qualitative data analysis software.

The evaluation team utilized a qualitative research codebook which outlines the codes or categories used to organize and analyze data in a qualitative study. Codebooks included a list of codes with the code's definition, an example of a response that belonged to that code, inclusion criteria, exclusion criteria, and code search expressions. The evaluation team created unique codebooks for each round of KIIs. While the evaluation team used the same general site visit codebook each year, the evaluation team modified the site visit codebook each year to incorporate improvements identified as a result of the evaluation team's data collection activities and new topics explored. Additionally, the evaluation team added new codes to site visit codebooks as needed to cover emergent themes from KII rounds. All staff involved in coding or analysis were familiar with BPCI Advanced and participated in data gathering as interviewers or note-takers. Staff involved in coding or analysis were trained on the final codebook to promote a consistent approach and ensure a clear understanding of codes, and coding was reviewed to ensure inter-rater reliability.

The evaluation team ran queries on the most common codes and identified key themes within those topics. The evaluation team used organizational characteristics, such as episode initiator type and/or participant type to create sub-groups and analyze differences in responses. Data were reviewed for commonalities and differences in responses by different convener and episode initiator types and summarized to capture congruence or dissimilarity. The evaluation team used characteristics such as participation in other Medicare payment initiatives, episode initiator type, and use of a convener and ran queries to explore differences in response by interviewee characteristics. During regular meetings, team members shared initial findings and synthesized results.

## Appendix D: Participant Characteristics

The following tables display participant characteristic results assessed in this report. The number of participants and their respective characteristics, the number of participation agreements, convener types, and clinical episode participation descriptives are compiled by CMS and retrieved from the CMS BPCI Advanced Portal. To determine Model Year 4 participation, we used Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015, and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (intervention period) for BPCI Advanced Model Year 4 episode initiators. To determine Model Year 3 participation, we used Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after April 1, 2013, and ending on or before December 31, 2017 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2020, and ending on or before December 31, 2020 (intervention period) for BPCI Advanced Model Year 3 episode initiators. Additional data sources included the CMS POS files to determine the location of participants and the CMS BPCI Advanced Reconciliation Result Second True-Up Files for Performance Periods 1–5 to retrieve the NPRA and final target prices.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**Exhibit D.1: Total Participation Agreements and Episode Initiators, Model Years 3 and 4, January 1, 2020–December 31, 2021**

Participation Counts	Model Year 3	Model Year 4
Total Number of Participation Agreements	1,707	986
Total Number of Episode Initiators	2,041	1,205
Total Number of Hospitals	1,010	682
Total Number of PGPs	1,031	523

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit D.2: Characteristics of BPCI Advanced Hospitals Compared With All Eligible Hospitals, Model Years 3 and 4, January 1, 2020–December 31, 2021**

Characteristic	Model Year 3	Model Year 4	All Eligible Hospitals
Number of Hospitals	996	675	2,920
Ownership Status			
Government Ownership	5.2%	5.6%	15.4%
Nonprofit Ownership	26.1%	29.0%	22.6%
For-Profit Ownership	68.7%	65.3%	62.1%
Health System Indicator (2018)	96.9%	97.9%	82.5%
Bed Count*	326.7	329.4	256.3
Bed Count (2020)	270.3	276.4	206.0
Resident-to-Bed Ratio*	0.08	0.09	0.07
Medicare Days*	38.3%	38.1%	42.0%
Disproportionate Share Hospital (DSH) Patient*	29.5%	29.8%	29.3%
Census Region			
Midwest	24.5%	23.1%	23.7%
Northeast	14.5%	14.1%	14.9%
South	40.7%	42.4%	41.2%
West	20.4%	20.4%	19.4%
Rural/Urban (Based on CBSA)			
Urban	89.5%	90.4%	76.7%
Rural	10.5%	9.6%	23.3%
Population*	3,736,602	4,023,103	2,971,197
Per Capita Income*	\$49,993	\$50,486	\$48,076
Staffed SNF Beds per 10,000*	52.1%	50.8%	59.3%
Medicare Advantage Penetration (2017)	35.2%	35.7%	33.0%
Medicare Advantage Penetration (2020)	41.6%	42.3%	39.5%
Case Mix Index*	1.7	1.7	1.6
At Least 1 Year of BPCI Participation	20.1%	20.9%	11.0%

*Note:* The numbers of BPCI Advanced hospitals are limited to hospitals with episode volume during the baseline and intervention periods. Asterisk (\*) indicates that averages were calculated over the baseline period. See the first page of this appendix for data sources and more information.

**Exhibit D.3: Physician Group Practice Characteristics,  
Model Years 3 and 4, January 1, 2020–December 31, 2021**

Characteristic	Model Year 3	Model Year 4
Number (N) of PGPs With Model Year 3 Volume	585	320
Average Number of NPIs per PGP	23.8	24.9
Share (%) of PGPs With Discharges in:		
1 Hospital	38.3	38.4
2 Hospitals	19.5	20.9
3+ Hospitals	42.2	40.6
Share (%) of PGPs With Discharges in:		
1 State	91.5	91.6
2 States	7.0	6.9
3+ States	1.5	1.6

*Note:* PGPs were identified by their TIN. See the first page of this appendix for data sources and more information.

**Exhibit D.4: BPCI Advanced Conveners, by Convener Type,  
Model Year 3 and 4, January 1, 2020–December 31, 2021**

Convener Type	Model Year 3		Model Year 4	
	Number	Percent	Number	Percent
Health System	47	50.5	31	47.0
Value-Based Care Consultant	18	19.4	13	19.7
Accountable Care Organization	13	14.0	10	15.2
Clinically Integrated Network	8	8.6	6	9.1
PGP-Led Convener	5	5.4	5	7.6
Health Plan	2	2.2	1	1.5
Total	93	100.0	66	100.0

*Note:* See Appendix B for definitions of organizations listed above. See the first page of this appendix for data sources and more information.



**Exhibit D.5: Top 10 Conveners With the Largest Share of Downstream Episode Initiators in BPCI Advanced, Model Years 3 and 4, January 1, 2020–December 31, 2021**

Model Year 3		Model Year 4	
Converner Ranking	Percentage of Total Downstream Episode Initiators (%)	Converner Ranking	Percentage of Total Downstream Episode Initiators (%)
1. Remedy BPCI Partners, LLC <i>(Value-Based Care Consultant)</i>	25.9	1. Remedy BPCI Partners, LLC <i>(Value-Based Care Consultant)</i>	28.8
2. Fusion5, Inc* <i>(Value-Based Care Consultant)</i>	7.6	2. Advanced Bundle Converner, LLC* <i>(Value-Based Care Consultant)</i>	8.4
3. naviHealth, Inc <i>(Value-Based Care Consultant)</i>	6.3	3. United Healthcare Services, Inc* <i>(Health Plan)</i>	7.3
4. Advanced Bundle Converner, LLC <i>(Value-Based Care Consultant)</i>	5.6	4. naviHealth, Inc <i>(Value-Based Care Consultant)</i>	5.9
5. United Healthcare Services, Inc <i>(Health Plan)</i>	5.0	5. The Center for Orthopedic and Research Excellence, Inc <i>(Value-Based Care Consultant)</i>	4.0
6. Signature Medical Group, Inc <i>(PGP-Led Converner)</i>	4.5	6. CommonSpirit Health <i>(Health System)</i>	3.7
7. CommonSpirit Health <i>(Health System)</i>	3.5	7. Ascension Care Management, LLC <i>(Value-Based Care Consultant)</i>	3.5
8. The Center for Orthopedic and Research Excellence, Inc. <i>(Value-Based Care Consultant)</i>	2.8	8. Lifepoint Corporate Services, General Partnership <i>(Value-Based Care Consultant)</i>	3.5
9. Lifepoint Corporate Services, General Partnership <i>(Value-Based Care Consultant)</i>	2.4	9. Signature Medical Group, Inc. <i>(PGP-Led Converner)</i>	3.5
10. SimplyVital Health, Inc* <i>(Value-Based Care Consultant)</i>	2.2	10. Trinity Health Corporation <i>(Health System)</i>	3.1

**Note:** Asterisk (\*) indicates the final model year in which the converner participated. See the first page of this appendix for data sources and more information.

**Exhibit D.6: Clinical Episode Service Line Group Selection by Episode Initiator Type, Model Year 4, January 1, 2021–December 31, 2021**

Clinical Episode Type	CESLG	Hospitals		PGPs	
		Number	Percent	Number	Percent
Medical	Cardiac Care	369	54.1	191	49.5
	GI Care	225	33.0	135	35.0
	Medical & Critical Care	499	73.2	217	56.2
	Neurological Care	298	43.7	155	40.2
Surgical	Cardiac Procedures	82	12.0	79	20.5
	GI Surgery	71	10.4	71	18.4
	Orthopedics	167	24.5	160	41.5
	Spinal Procedures	125	18.3	106	27.5

**Note:** PGP CESLG selection is shown for PGPs that have billed at least one discharge or procedure from 2013-2021 . See the first page of this appendix for data sources and more information.

**Exhibit D.7: Hospital Participation by Clinical Episode, BPCI Advanced, Model Years 3 and 4, January 1, 2020–December 31, 2021**

CESLG	Clinical Episode	Model Year 3				Model Year 4			
		BPCI Advanced Hospitals Selecting Clinical Episode (N=1,010)		BPCI Advanced Hospitals With Discharges in Clinical Episode		BPCI Advanced Hospitals Selecting Clinical Episode (N=682)		BPCI Advanced Hospitals With Discharges in Clinical Episode	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cardiac Care	AMI	299	29.6	299	100.0	326	47.8	326	100.0
	Cardiac Arrhythmia	337	33.4	337	100.0	358	52.5	357	99.7
	CHF	251	24.9	251	100.0	369	54.1	369	100.0
Cardiac Procedures	Cardiac Defibrillator	19	1.9	19	100.0	16	2.3	16	100.0
	Cardiac Valve	51	5.0	51	100.0	32	4.7	32	100.0
	CABG	85	8.4	85	100.0	46	6.7	46	100.0
	Pacemaker	87	8.6	87	100.0	71	10.4	71	100.0
	PCI	76	7.5	76	100.0	80	11.7	80	100.0
	Cardiac Defibrillator (OP)	29	2.9	29	100.0	47	6.9	47	100.0
	PCI (OP)	115	11.4	115	100.0	65	9.5	65	100.0
	TAVR	7	0.7	7	100.0	19	2.8	19	100.0
GI Care	Disorders of the Liver	59	5.8	59	100.0	67	9.8	67	100.0
	GI Hemorrhage	195	19.3	195	100.0	225	33.0	225	100.0
	GI Obstruction	169	16.7	169	100.0	209	30.6	209	100.0
	IBD	11	1.1	11	100.0	14	2.1	14	100.0
GI Surgery	Major Bowel Procedure	70	6.9	69	98.6	71	10.4	71	100.0
	Bariatric Surgery	11	1.1	11	100.0	18	2.6	18	100.0
Medical & Critical Care	Cellulitis	140	13.9	140	100.0	467	68.5	466	99.8
	COPD, Bronchitis, and Asthma	359	35.5	359	100.0	494	72.4	491	99.4
	Renal Failure	285	28.2	284	99.6	488	71.6	486	99.6
	Sepsis	587	58.1	586	99.8	499	73.2	497	99.6
	SPRI	328	32.5	327	99.7	498	73.0	497	99.8
	UTI	243	24.1	242	99.6	488	71.6	487	99.8
Neurological Care	Stroke	273	27.0	272	99.6	298	43.7	297	99.7
	Seizures	163	16.1	163	100.0	224	32.8	224	100.0

CESLG	Clinical Episode	Model Year 3				Model Year 4			
		BPCI Advanced Hospitals Selecting Clinical Episode (N=1,010)		BPCI Advanced Hospitals With Discharges in Clinical Episode		BPCI Advanced Hospitals Selecting Clinical Episode (N=682)		BPCI Advanced Hospitals With Discharges in Clinical Episode	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Orthopedics	DJRLE	5	0.5	4	80.0	10	1.5	10	100.0
	Femur & Hip/Pelvis Fractures	65	6.4	64	98.5	82	12.0	82	100.0
	Hip & Femur	118	11.7	117	99.2	155	22.7	154	99.4
	Lower Extremity/Humerus	66	6.5	66	100.0	78	11.4	78	100.0
	MJRLE	84	8.3	83	98.8	134	19.6	133	99.3
	MJRUE	72	7.1	72	100.0	84	12.3	80	95.2
Spinal Procedures	Back & Neck	67	6.6	67	100.0	56	8.2	56	100.0
	Back & Neck (OP)	33	3.3	33	100.0	85	12.5	85	100.0
	Spinal Fusion	137	13.6	136	99.3	124	18.2	122	98.4

**Note:** Hospital clinical episode selection differs by CESLG due to the baseline minimum volume exclusion. The total number of hospitals participating in the BPCI Advanced model was 1,010 in Model Year 3 (2020) and 682 in Model Year 4 (2021). See the first page of this appendix for data sources and more information.

**Exhibit D.8: Physician Group Practice Participation by Clinical Episode, BPCI Advanced Model, Model Years 3 and 4, January 1, 2020–December 31, 2021**

CESLG	Clinical Episode	Model Year 3				Model Year 4			
		BPCI Advanced PGP <sup>s</sup> Selecting Clinical Episode (N=1,031)		BPCI Advanced PGP <sup>s</sup> With Discharges in Clinical Episode		BPCI Advanced PGP <sup>s</sup> Selecting Clinical Episode (N=523)		BPCI Advanced PGP <sup>s</sup> With Discharges in Clinical Episode	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Cardiac Care	AMI	324	31.4	124	38.3	327	62.5	131	40.1
	Cardiac Arrhythmia	351	34.0	111	31.6	327	62.5	126	38.5
	CHF	277	26.9	122	44.0	327	62.5	129	39.4
Cardiac Procedures	Cardiac Defibrillator	214	20.8	11	5.1	215	41.1	16	7.4
	Cardiac Valve	198	19.2	15	7.6	215	41.1	12	5.6
	CABG	206	20.0	26	12.6	215	41.1	19	8.8
	Pacemaker	246	23.9	40	16.3	215	41.1	20	9.3
	PCI	249	24.2	36	14.5	215	41.1	24	11.2
	Cardiac Defibrillator (OP)	219	21.2	14	6.4	215	41.1	7	3.3
	PCI (OP)	237	23.0	37	15.6	215	41.1	22	10.2
	TAVR	118	11.4	4	3.4	215	41.1	14	6.5
GI Care	Disorders of the Liver	169	16.4	43	25.4	270	51.6	75	27.8
	GI Hemorrhage	238	23.1	96	40.3	270	51.6	78	28.9
	GI Obstruction	224	21.7	88	39.3	270	51.6	76	28.1
	IBD	125	12.1	12	9.6	270	51.6	61	22.6
GI Surgery	Major Bowel Procedure	130	12.6	22	16.9	206	39.4	10	4.9
	Bariatric Surgery	127	12.3	17	13.4	206	39.4	13	6.3
	Cellulitis	210	20.4	82	39.0	352	67.3	134	38.1
Medical & Critical Care	COPD, Bronchitis, Asthma	286	27.7	125	43.7	352	67.3	130	36.9
	Renal Failure	260	25.2	119	45.8	352	67.3	135	38.4
	Sepsis	311	30.2	147	47.3	352	67.3	140	39.8
	SPRI	294	28.5	127	43.2	352	67.3	141	40.1
	UTI	237	23.0	100	42.2	352	67.3	134	38.1
Neurological Care	Stroke	231	22.4	96	41.6	290	55.4	98	33.8
	Seizures	212	20.6	76	35.8	290	55.4	92	31.7

CESLG	Clinical Episode	Model Year 3				Model Year 4			
		BPCI Advanced PGP's Selecting Clinical Episode (N=1,031)		BPCI Advanced PGP's With Discharges in Clinical Episode		BPCI Advanced PGP's Selecting Clinical Episode (N=523)		BPCI Advanced PGP's With Discharges in Clinical Episode	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Orthopedics	DJRLE	224	21.7	12	5.4	296	56.6	39	13.2
	Femur & Hip/Pelvis Fractures	59	5.7	19	32.2	296	56.6	29	9.8
	Hip & Femur	164	15.9	117	71.3	296	56.6	110	37.2
	Lower Extremity/Humerus	87	8.4	47	54.0	296	56.6	91	30.7
	MJRLE	425	41.2	204	48.0	296	56.6	134	45.3
	MJRUE	321	31.1	100	31.2	296	56.6	90	30.4
Spinal Procedures	Back & Neck	243	23.6	39	16.0	242	46.3	53	21.9
	Back & Neck (OP)	311	30.2	50	16.1	242	46.3	59	24.4
	Spinal Fusion	294	28.5	98	33.3	242	46.3	70	28.9

**Note:** The total number of PGP's participating in the BPCI Advanced model was 1,031 in Model Year 3 (2020) and 523 in Model Year 4 (2021). See the first page of this appendix for data sources and more information.

**Exhibit D.9: Average NPRA by Participants That Left During the Model Year Versus Participants That Remained in the Model for the Following Model Year, BPCI Advanced, Model Years 1–2, Model Year 3, and Model Year 4, October 1, 2018–December 31, 2021**

Participant Status	Model Year 1–2		Model Year 3		Model Year 4	
	Number of Episode Initiators	Average NPRA	Number of Episode Initiators	Average NPRA	Number of Episode Initiators	Average NPRA
Remained in the Model Until the Following Model Year	950	\$1,275	974	\$1,971	709	\$537
Left the Model During the Model Year	263	\$479	528	\$1,340	315	-\$357

*Note:* See the first page of this appendix for data sources and more information.



## Appendix E: BPCI Advanced Reach

The following tables display the number and proportions of BPCI Advanced hospitals, clinicians, and discharges with eligible episodes by CESLG and clinical episode.

The data source is the BPCI Advanced evaluation team’s analysis of (1) Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021, for BPCI Advanced hospitals and (2) the CMS BPCI Advanced Database.

Eligible hospitals were limited to those that were eligible for BPCI Advanced in Model Year 4 and met the baseline volume criterion. For example, this analysis excludes IPPS-exempt cancer hospitals and hospitals located in Maryland. Clinicians are identified as either attending or operating NPIs at a BPCI Advanced hospital or the attending or operating NPI on the hospital claim when the episode was attributed to a BPCI Advanced PGP. The number of clinicians is a unique count of clinicians who treated Medicare beneficiaries who met the BPCI Advanced beneficiary inclusion criteria at a BPCI Advanced eligible hospital. Eligible discharges and procedures include hospital discharges and outpatient procedures that met the model eligibility requirements, including having a BPCI Advanced MS-DRGs or HCPCS code, being at a hospital that was eligible to be in BPCI Advanced, and meeting other beneficiary inclusion criteria. The minimum hospital baseline volume criterion was not applied to eligible discharges and procedures. For more detail on the methods, see **Appendix C**.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**Exhibit E.1: Number and Proportion of Eligible United States Hospitals That Participated in BPCI Advanced, by Clinical Episode Service Line Group, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Unique Number of Hospitals With Eligible Episodes	Unique Hospitals With BPCI Advanced Discharges	
			Number	Percent
Medical	Cardiac Care	2,781	369	13.3
	GI Care	2,314	225	9.7
	Medical & Critical Care	2,978	499	16.8
	Neurological Care	2,212	298	13.5
Surgical	Cardiac Procedures	1,753	82	4.7
	GI Surgery	1,883	71	3.8
	Orthopedics	2,612	167	6.4
	Spinal Procedures	1,546	125	8.1

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit E.2: Number and Proportion of Clinicians With Eligible Discharges or Procedures Who Participated in BPCI Advanced, by Clinical Episode Service Line Group, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Unique Number of Clinicians With Eligible Episodes	Unique Clinicians With BPCI Advanced Discharges	
			Number	Percent
Medical	Cardiac Care	114,837	25,759	22.4
	GI Care	89,124	12,622	14.2
	Medical & Critical Care	172,792	49,459	28.6
	Neurological Care	77,399	16,447	21.2
Surgical	Cardiac Procedures	63,117	4,102	6.5
	GI Surgery	31,154	1,411	4.5
	Orthopedics	68,189	10,700	15.7
	Spinal Procedures	17,514	2,485	14.2

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit E.3: Number and Proportion of Eligible Discharges and Procedures in BPCI Advanced, by Clinical Episode Service Line Group, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Number of Eligible Discharges	BPCI Advanced Discharges	
			Number	Percent
Medical	Cardiac Care	498,113	102,257	20.5
	GI Care	220,423	28,418	12.9
	Medical & Critical Care	1,270,094	340,938	26.8
	Neurological Care	185,774	36,062	19.4
Surgical	Cardiac Procedures	386,427	18,571	4.8
	GI Surgery	84,300	3,339	4.0
	Orthopedics	476,329	66,617	14.0
	Spinal Procedures	136,003	19,179	14.1

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit E.4: Number and Proportion of Eligible Hospitals That Participated in BPCI Advanced, by Clinical Episode, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Unique Number of Hospitals With Eligible Episodes	Unique Hospitals With BPCI Advanced Discharges	
			Number	Percent
Cardiac Care	AMI	1,982	326	16.4
	Cardiac Arrhythmia	2,385	358	15.0
	CHF	2,773	369	13.3
Cardiac Procedures	Cardiac Defibrillator	256	16	6.3
	Cardiac Valve	720	32	4.4
	CABG	984	46	4.7
	Pacemaker	1,311	71	5.4
	PCI	1,664	80	4.8
	Cardiac Defibrillator (OP)	1,034	47	4.5
	PCI (OP)	1,430	65	4.5
	TAVR	497	19	3.8
GI Care	Disorders of the Liver	518	67	12.9
	GI Hemorrhage	2,287	225	9.8
	GI Obstruction	1,985	209	10.5
	IBD	117	14	12.0
GI Surgery	Major Bowel Procedure	1,849	71	3.8
	Bariatric Surgery	413	18	4.4
Medical & Critical Care	Cellulitis	2,258	467	20.7
	COPD, Bronchitis, Asthma	2,786	494	17.7
	Renal Failure	2,458	488	19.9
	Sepsis	2,813	499	17.7
	SPRI	2,891	498	17.2
	UTI	2,610	488	18.7
Neurological Care	Stroke	2,201	298	13.5
	Seizures	1,280	224	17.5
Orthopedics	DJRLE	125	10	8.0
	Femur & Hip/Pelvis Fractures	876	82	9.4
	Hip & Femur	2,155	155	7.2
	Lower Extremity/Humerus	875	78	8.9
	MJRLE	2,270	134	5.9
	MJRUE	1,209	84	6.9
Spinal Procedures	Back & Neck	487	56	11.5
	Back & Neck (OP)	1,055	85	8.1
	Spinal Fusion	1,497	124	8.3

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit E.5: Number and Proportion of Clinicians With Eligible Discharges or Procedures Who Participated in BPCI Advanced, by Clinical Episode, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Unique Number of Clinicians With Eligible Episodes	Unique Clinicians With BPCI Advanced Discharges	
			Number	Percent
Cardiac Care	AMI	54,910	11,853	21.6
	Cardiac Arrhythmia	60,045	12,999	21.6
	CHF	88,905	19,473	21.9
Cardiac Procedures	Cardiac Defibrillator	10,741	348	3.2
	Cardiac Valve	8,021	380	4.7
	CABG	13,153	750	5.7
	Pacemaker	28,083	1,718	6.1
	PCI	40,136	2,586	6.4
	Cardiac Defibrillator (OP)	5,259	343	6.5
	PCI (OP)	16,674	1,087	6.5
	TAVR	8,132	330	4.1
	GI Care	Disorders of the Liver	22,781	2,046
GI Hemorrhage		65,732	9,960	15.2
GI Obstruction		41,700	5,663	13.6
IBD		10,988	559	5.1
GI Surgery	Major Bowel Procedure	30,320	1,359	4.5
	Bariatric Surgery	2,076	96	4.6
	Cellulitis	42,315	10,968	25.9
Medical & Critical Care	COPD, Bronchitis, Asthma	46,755	12,509	26.8
	Renal Failure	62,830	17,590	28.0
	Sepsis	126,082	36,236	28.7
	SPRI	98,577	27,648	28.0
	UTI	56,399	15,502	27.5
Neurological Care	Stroke	67,342	14,271	21.2
	Seizures	31,807	6,248	19.6
Orthopedics	DJRLE	1,189	98	8.2
	Femur & Hip/Pelvis Fractures	18,078	1,291	7.1
	Hip & Femur	45,964	7,283	15.8
	Lower Extremity/Humerus	21,499	2,583	12.0
	MJRLE	41,404	6,201	15.0
	MJRUE	6,652	869	13.1
Spinal Procedures	Back & Neck	6,953	726	10.4
	Back & Neck (OP)	5,979	807	13.5
	Spinal Fusion	14,091	2,112	15.0

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit E.6: Number and Proportion of Eligible Discharges and Procedures in BPCI Advanced, by Clinical Episode, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Number of Eligible Discharges	BPCI Advanced Discharges	
			Number	Percent
Cardiac Care	AMI	96,202	19,753	20.5
	Cardiac Arrhythmia	123,499	24,807	20.1
	CHF	278,412	57,697	20.7
Cardiac Procedures	Cardiac Defibrillator	9,575	286	3.0
	Cardiac Valve	24,664	1,070	4.3
	CABG	36,797	1,441	3.9
	Pacemaker	39,625	2,206	5.6
	PCI	89,575	4,899	5.5
	Cardiac Defibrillator (OP)	36,181	1,626	4.5
	PCI (OP)	109,598	5,721	5.2
	TAVR	40,412	1,322	3.3
GI Care	Disorders of the Liver	21,362	1,855	8.7
	GI Hemorrhage	127,029	17,983	14.2
	GI Obstruction	62,646	8,113	13.0
	IBD	9,386	467	5.0
GI Surgery	Major Bowel Procedure	76,038	2,902	3.8
	Bariatric Surgery	8,262	437	5.3
Medical & Critical Care	Cellulitis	65,265	16,621	25.5
	COPD, Bronchitis, Asthma	90,511	23,149	25.6
	Renal Failure	134,465	37,359	27.8
	Sepsis	454,836	126,686	27.9
	SPRI	390,891	101,084	25.9
	UTI	134,126	36,039	26.9
Neurological Care	Stroke	145,147	28,327	19.5
	Seizures	40,627	7,735	19.0
Orthopedics	DJRLE	2,328	221	9.5
	Femur & Hip/Pelvis Fractures	21,962	1,607	7.3
	Hip & Femur	96,688	14,514	15.0
	Lower Extremity/Humerus	25,010	3,040	12.2
	MJRLE	310,740	44,718	14.4
	MJRUE	19,601	2,517	12.8
Spinal Procedures	Back & Neck	10,915	1,159	10.6
	Back & Neck (OP)	43,888	5,350	12.2
	Spinal Fusion	81,200	12,670	15.6

**Note:** See the first page of this appendix for data sources and more information.

## Appendix F: Supplemental Statistics on Comparison Groups

The exhibits in this appendix display supplemental statistics on matching for each clinical episode, separately for hospital and PGP episode initiators. Section A displays the total number of BPCI Advanced episode initiators that met inclusion criteria to be matched and the total number that were matched, for hospital and PGP episode initiators, by clinical episode. Section B provides descriptions of the variables used for matching. Section C displays the standardized differences before and after matching for each variable used for matching, for each clinical episode, for hospitals, and section D displays the same information for PGPs. The standardized mean difference before matching refers to the standardized mean difference between eventually-matched participant providers and all non-participant providers in the comparison pool, while the standardized mean difference after matching refers to the standardized mean difference between matched participant providers and the non-participant providers to which they were matched.

In total, comparison groups were constructed for 26 clinical episodes for hospitals, and 18 clinical episodes for PGPs. Other clinical episodes were excluded from the impact analysis due to small sample size or difficulty finding a balanced comparison group. For additional details on data sources and matching methodology, see **Appendix C**.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**A. Number of BPCI Advanced Participants Before and After Matching**

**Exhibit F.1: Matched BPCI Advanced Hospital Episode Initiators Included in the BPCI Advanced Impact Estimates, by Clinical Episode, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Clinical Episode	BPCI Advanced Participating Hospitals Eligible for Matching	Matched BPCI Advanced Hospitals
Medical Clinical Episodes	AMI	318	291
	Cardiac Arrhythmia	350	343
	Cellulitis	459	389
	CHF	365	339
	COPD, Bronchitis, & Asthma	487	441
	Disorders of the Liver	62	59
	GI Hemorrhage	222	213
	GI Obstruction	205	200
	Renal Failure	482	410
	Seizures	217	197
	Sepsis	494	448
	SPRI	494	459
	Stroke	295	222
	UTI	483	336
Surgical Clinical Episodes	Back & Neck	84	83
	CABG	45	45
	Cardiac Defibrillator	47	47
	Femur & Hip/Pelvis Fractures	79	76
	Hip & Femur	152	140
	Lower Extremity/Humerus	75	75
	Major Bowel Procedure	69	69
	MJRLE	126	125
	Pacemaker	69	67
	PCI (IP)	79	78
	PCI (OP)	63	62
	Spinal Fusion	120	117

*Note:* See the first page of this appendix for data sources and more information about hospitals included.



**Exhibit F.2: Matched BPCI Advanced PGP Episode Initiators Included in the BPCI Advanced Impact Estimates, by Clinical Episode, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Clinical Episode	BPCI Advanced Participating PGPs Eligible for Matching	Matched BPCI Advanced PGPs
Medical Clinical Episodes	AMI	59	59
	Cardiac Arrhythmia	66	66
	Cellulitis	62	61
	CHF	77	77
	COPD, Bronchitis, & Asthma	73	73
	GI Hemorrhage	55	55
	GI Obstruction	45	45
	Renal Failure	72	72
	Seizures	26	24
	Sepsis	83	75
	SPRI	81	79
	Stroke	59	59
UTI	72	72	
Surgical Clinical Episodes	Back & Neck	30	30
	Hip & Femur	32	32
	MJRLE	71	71
	MJRUE	54	49
	Spinal Fusion	33	31

*Note:* See the first page of this appendix for data sources and more information about PGPs included.

## B. Descriptions of Matching Variables

**Exhibit F.3: Descriptions of Variables Used for Hospital Matching Models**

Domain	Variable	Description
Hospital Characteristics	Average Case Weight of Discharges	Average MS-DRG weight of a discharge at the hospital during the baseline period. MS-DRG weights represent the amount of resources required to care for a typical patient in a given MS-DRG.
	DSH Patient Percentage	Percentage of Medicare inpatient days during the baseline attributable to patients eligible for SSI and Medicare Part A plus percentage of total inpatient days attributable to patients eligible for Medicaid but not Medicare Part A.
	Efficiency Measure	Average ratio of observed to predicted spending for the hospital within a given clinical episode based on preliminary Model Year 4 target prices.
	Episode Volume	Number of discharges for the hospital in a given clinical episode during the baseline.
	Hospital Market Share	Proportion of total BPCI-A eligible discharges in a hospital’s CBSA which occur at that hospital, averaged over the baseline period.
	OP Surgery Department	Binary indicator for if the hospital has an outpatient surgery department.
	Ownership – Government	Binary indicator for if the hospital is government owned.
	Part of Health System	Binary indicator for if the hospital is part of a health system.
	Resident-Bed Ratio	Average number of residents assigned per bed.
	Urban	Binary indicator for if the hospital is in an urban area.
Hospital Baseline Outcomes	Institutional PAC - Average	Average percentage of patients discharged to institutional PAC settings over the baseline period.
	Institutional PAC - Change	Slope of percentage of patients discharged to institutional PAC settings over the baseline period.
	Standardized Part A&B Payment - Average	Average winsorized Medicare Part A & B payments over the baseline period.
	Standardized Part A&B Payment – Change	Slope of winsorized Medicare Part A & B payments over the baseline period.
Market Characteristics	IRF in Market	Binary indicator for if there is a short- or long-term rehab hospital in the hospital’s CBSA in 2018.
	SNF Beds per 10,000 in Market	SNF beds per 10,000 inhabitants in the hospital’s CBSA.

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.4: Descriptions of Variables Used for PGP Matching Models**

Domain	Variable	Description
PGP Characteristics	Episode Volume	Average volume of discharges in the clinical episode during the baseline.
	HCC Score	Average HCC score during baseline.
	Number of Hospitals – 3+	Binary indicator for if the PGP operates, on average, in more than 2.5 hospitals during the baseline period.
	Number of NPIs – Large	Binary indicator for if the PGP is at or above the 75 <sup>th</sup> percentile within the clinical episode for number of associated NPIs.
	Number of NPIs – Small	Binary indicator for if the PGP is at or below the 25 <sup>th</sup> percentile within the clinical episode for number of associated NPIs.
	Part of Health System	Binary indicator for if the PGP is part of a health system.
	Percent Black or African American	Average percentage of patients per year during the baseline period who were Black or African American.
	Percent Disabled, No ESRD	Average percentage of patients per year during the baseline period who were disabled but didn’t have ESRD.
	Percent Dual Eligible	Average percentage of patients per year during the baseline period who were dually eligible.
	Percent Episodes with IP Stay in 180 Days Prior	Average percentage of patients per year during the baseline period who had any inpatient stay in the 180 days before the episode.
	Percent Female	Average percentage of patients per year during the baseline period who were female.
	Percent Over 80 Years Old	Average percentage of patients per year during the baseline period who were over 80 years old.
	Percent White	Average percentage of patients per year during the baseline period who were White.
	PGP in Multiple CBSAs	Binary indicator for if the PGP operates, on average, in more than 1.5 CBSAs.
	Share in MS-DRG 453	Episodes with MS-DRG 453 (denoting combined anterior/posterior spinal fusion with major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Share in MS-DRG 454	Episodes with MS-DRG 454 (denoting combined anterior/posterior spinal fusion with non-major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Share in MS-DRG 455	Episodes with MS-DRG 455 (denoting combined anterior/posterior spinal fusion without complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Share in MS-DRG 459	Episodes with MS-DRG 459 (denoting spinal fusion, except cervical, with major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
Share in MS-DRG 460	Episodes with MS-DRG 460 (denoting spinal fusion, except cervical, without major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.	

Domain	Variable	Description
<b>PGP Characteristics, Continued</b>	Share in MS-DRG 471	Episodes with MS-DRG 471 (denoting cervical spinal fusion with major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Share in MS-DRG 472	Episodes with MS-DRG 472 (denoting cervical spinal fusion with non-major complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Share in MS-DRG 473	Episodes with MS-DRG 473 (denoting cervical spinal fusion without complications or comorbidities), as a share of spinal fusion episodes with operating or attending physician part of the PGP.
	Urban	Binary indicator for if the hospital where the PGP provided the plurality of its care is based in an urban area.
<b>PGP Baseline Outcomes</b>	Institutional PAC – Average	Percentage of discharges to institutional PAC settings during baseline.
	Institutional PAC – Change	Quarterly linear slope of percentage of discharges to institutional PAC settings during baseline.
	Mortality Rate 90-Day – Average	Mortality rate during the 90-day PDP during baseline.
	Mortality Rate 90-Day – Change	Quarterly slope of mortality rate during the 90-day PDP during baseline.
	Readmission Rate 90-Day – Average	90-day readmission rate during baseline.
	Readmission Rate 90-Day – Change	Quarterly slope of 90-day readmission rate during baseline.
	Standardized Part A&B Payment – Average	Average winsorized Medicare Part A & B payments over the baseline period.
	Standardized Part A&B Payment – Change	Quarterly slope of winsorized Medicare Part A & B payments over the baseline period.
<b>Market Characteristics</b>	Population - Continuous	Population of the CBSA where the PGP provided a plurality of its care.

**Note:** See the first page of this appendix for data sources and more information. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Medicare Beneficiary Summary File.

### C. Standardized Mean Differences – Hospitals

**Exhibit F.5: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Acute Myocardial Infarction**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.01	-0.08
DSH Patient %	-0.01	0.01
Efficiency Measure	0.22	0.01
Episode Volume	0.01	-0.06
Hospital Market Share	-0.32	-0.09
Institutional PAC - Average	0.18	-0.02
Institutional PAC – Change	-0.02	0.09
IRF in Market	0.52	0.06
Ownership – Government	-0.15	-0.06
Part of Health System	0.40	0.03
Resident-Bed Ratio	0.03	-0.01
SNF Beds per 10,000 in Market	-0.28	-0.04
Standardized Part A&B Payment - Average	0.41	0.00
Standardized Part A&B Payment – Change	-0.07	0.08
Urban	0.34	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.6: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Cardiac Arrhythmia**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.17	-0.04
DSH Patient %	0.02	0.05
Efficiency Measure	0.19	0.07
Episode Volume	0.20	-0.01
Hospital Market Share	-0.20	-0.06
Institutional PAC - Average	0.16	0.04
Institutional PAC - Change	-0.07	-0.02
IRF in Market	0.55	0.01
Ownership - Government	-0.26	-0.02
Part of Health System	0.51	0.00
Resident-Bed Ratio	0.05	0.09
SNF Beds per 10,000 in Market	-0.42	-0.03
Standardized Part A&B Payment - Average	0.38	0.06
Standardized Part A&B Payment – Change	-0.10	0.01
Urban	0.45	0.01

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.7: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Cellulitis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.31	-0.05
DSH Patient %	-0.08	-0.03
Efficiency Measure	0.21	-0.09
Episode Volume	0.28	0.01
Hospital Market Share	-0.14	-0.01
Institutional PAC - Average	0.13	-0.05
Institutional PAC - Change	0.02	-0.03
IRF in Market	0.52	0.01
Ownership – Government	-0.28	0.02
Part of Health System	0.47	0.09
Resident-Bed Ratio	0.06	-0.03
SNF Beds per 10,000 in Market	-0.32	-0.01
Standardized Part A&B Payment - Average	0.35	-0.05
Standardized Part A&B Payment – Change	-0.02	-0.01
Urban	0.47	-0.02

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.8: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Chronic Obstructive Pulmonary Disease, Bronchitis, Asthma**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.50	-0.09
DSH Patient %	-0.07	0.06
Efficiency Measure	0.30	0.10
Episode Volume	0.41	-0.03
Hospital Market Share	-0.02	-0.08
Institutional PAC – Average	0.16	0.06
Institutional PAC – Change	0.00	0.02
IRF in Market	0.60	0.02
Ownership – Government	-0.40	0.03
Part of Health System	0.62	-0.02
Resident-Bed Ratio	0.11	-0.01
SNF Beds per 10,000 in Market	-0.43	-0.01
Standardized Part A&B Payment – Average	0.55	0.10
Standardized Part A&B Payment – Change	-0.01	0.03
Urban	0.59	-0.02

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.9: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Congestive Heart Failure**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.37	-0.04
DSH Patient %	0.02	0.03
Efficiency Measure	0.38	0.08
Episode Volume	0.39	-0.03
Hospital Market Share	-0.09	0.02
Institutional PAC - Average	0.18	0.06
Institutional PAC - Change	0.02	-0.01
IRF in Market	0.59	-0.01
Ownership - Government	-0.30	-0.04
Part of Health System	0.61	0.00
Resident-Bed Ratio	0.10	-0.05
SNF Beds per 10,000 in Market	-0.46	-0.05
Standardized Part A&B Payment - Average	0.75	0.07
Standardized Part A&B Payment – Change	-0.05	0.02
Urban	0.55	0.03

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.10: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Coronary Artery Bypass Graft**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.20	0.02
DSH Patient %	-0.02	0.29
Efficiency Measure	0.27	0.02
Episode Volume	-0.10	-0.03
Hospital Market Share	-0.51	0.01
Institutional PAC - Average	0.39	-0.09
Institutional PAC - Change	-0.15	-0.01
IRF in Market	0.50	0.11
Ownership - Government	0.08	0.07
Part of Health System	0.15	0.00
Resident-Bed Ratio	0.04	-0.05
SNF Beds per 10,000 in Market	-0.34	-0.18
Standardized Part A&B Payment - Average	0.50	0.00
Standardized Part A&B Payment – Change	-0.33	-0.05
Urban	0.22	0.22

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit F.11: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Disorders of Liver Except Malignancy, Cirrhosis, or Alcoholic Hepatitis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.14	0.01
DSH Patient %	0.02	0.01
Efficiency Measure	0.26	-0.04
Episode Volume	-0.12	0.00
Hospital Market Share	-0.51	-0.19
Institutional PAC - Average	0.24	0.08
Institutional PAC - Change	-0.29	0.04
IRF in Market	0.53	-0.14
Ownership - Government	-0.09	-0.21
Part of Health System	0.00	0.00
Resident-Bed Ratio	-0.07	0.12
SNF Beds per 10,000 in Market	0.04	0.06
Standardized Part A&B Payment - Average	0.26	0.09
Standardized Part A&B Payment – Change	-0.29	0.01
Urban	-0.01	-0.08

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.12: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Fractures of the Femur and Hip or Pelvis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.13	-0.12
DSH Patient %	-0.05	-0.09
Efficiency Measure	0.30	0.07
Episode Volume	0.16	0.12
Hospital Market Share	-0.34	-0.05
Institutional PAC – Average	0.05	0.02
Institutional PAC – Change	0.01	0.06
IRF in Market	0.39	0.12
Ownership – Government	0.08	0.04
Part of Health System	0.00	0.00
Resident-Bed Ratio	0.06	-0.14
SNF Beds per 10,000 in Market	-0.02	0.03
Standardized Part A&B Payment – Average	0.49	0.01
Standardized Part A&B Payment – Change	-0.08	0.15
Urban	0.14	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.13: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Gastrointestinal Hemorrhage**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.10	0.04
DSH Patient %	0.10	0.06
Efficiency Measure	0.38	0.00
Episode Volume	0.22	0.00
Hospital Market Share	-0.25	-0.01
Institutional PAC - Average	0.37	0.07
Institutional PAC - Change	-0.09	-0.10
IRF in Market	0.40	0.03
Ownership - Government	-0.29	-0.02
Part of Health System	0.42	-0.04
Resident-Bed Ratio	0.09	0.02
SNF Beds per 10,000 in Market	-0.27	0.03
Standardized Part A&B Payment - Average	0.53	0.06
Standardized Part A&B Payment – Change	-0.10	0.03
Urban	0.26	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.14: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Gastrointestinal Obstruction**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.07	-0.01
DSH Patient %	0.14	-0.03
Efficiency Measure	0.32	-0.01
Episode Volume	0.14	-0.04
Hospital Market Share	-0.29	-0.05
Institutional PAC - Average	0.29	0.04
Institutional PAC - Change	-0.06	-0.02
IRF in Market	0.42	0.00
Ownership - Government	-0.23	-0.06
Part of Health System	0.32	0.03
Resident-Bed Ratio	0.12	0.04
SNF Beds per 10,000 in Market	-0.27	0.08
Standardized Part A&B Payment - Average	0.49	0.05
Standardized Part A&B Payment – Change	-0.06	0.01
Urban	0.23	0.04

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.15: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Hip & Femur Procedures except Major Joint**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.22	-0.08
DSH Patient %	0.05	0.05
Efficiency Measure	0.32	0.00
Episode Volume	0.32	0.01
Hospital Market Share	-0.13	-0.06
Institutional PAC - Average	0.37	-0.01
Institutional PAC - Change	-0.06	0.10
IRF in Market	0.67	0.05
Ownership - Government	-0.15	0.00
Part of Health System	0.40	0.08
Resident-Bed Ratio	0.19	0.05
SNF Beds per 10,000 in Market	-0.35	0.01
Standardized Part A&B Payment - Average	0.52	-0.01
Standardized Part A&B Payment – Change	-0.24	-0.07
Urban	0.54	-0.05

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.16: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Lower Extremity and Humerus Procedure Except Hip, Foot, Femur**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.04	-0.10
DSH Patient %	-0.15	-0.06
Efficiency Measure	0.28	-0.27
Episode Volume	0.12	-0.03
Hospital Market Share	-0.42	-0.20
Institutional PAC - Average	0.48	0.01
Institutional PAC - Change	-0.05	-0.06
IRF in Market	0.68	0.06
Ownership - Government	-0.05	-0.05
Part of Health System	0.12	-0.10
Resident-Bed Ratio	0.12	0.06
SNF Beds per 10,000 in Market	-0.11	-0.12
Standardized Part A&B Payment - Average	0.56	-0.16
Standardized Part A&B Payment – Change	-0.06	0.01
Urban	0.36	-0.07

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.17: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Major Bowel Procedure**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.05	0.05
DSH Patient %	0.11	-0.07
Efficiency Measure	0.63	-0.01
Episode Volume	0.06	0.03
Hospital Market Share	-0.12	-0.04
Institutional PAC - Average	0.65	-0.06
Institutional PAC - Change	-0.15	0.10
IRF in Market	0.40	-0.03
Ownership - Government	-0.14	0.12
Part of Health System	0.24	0.14
Resident-Bed Ratio	0.12	-0.11
SNF Beds per 10,000 in Market	-0.27	-0.23
Standardized Part A&B Payment - Average	0.62	-0.08
Standardized Part A&B Payment – Change	-0.02	0.21
Urban	0.36	-0.07

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.18: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Major Joint Replacement of the Lower Extremity**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.36	-0.05
DSH Patient %	0.07	0.10
Efficiency Measure	0.48	0.02
Episode Volume	0.20	-0.12
Hospital Market Share	0.01	-0.05
Institutional PAC - Average	0.40	0.14
Institutional PAC - Change	-0.15	-0.07
IRF in Market	0.68	-0.16
OP Surgery Department	0.03	0.00
Ownership - Government	-0.20	-0.03
Part of Health System	0.53	0.08
Resident-Bed Ratio	0.23	-0.07
SNF Beds per 10,000 in Market	-0.35	0.06
Standardized Part A&B Payment - Average	0.51	0.10
Standardized Part A&B Payment – Change	-0.05	0.07
Urban	0.59	-0.13

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.19: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Pacemaker**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.26	0.11
DSH Patient %	0.01	0.14
Efficiency Measure	0.55	0.02
Episode Volume	0.10	0.10
Hospital Market Share	-0.59	0.05
Institutional PAC - Average	0.62	0.17
Institutional PAC - Change	-0.11	0.13
IRF in Market	0.68	-0.18
Ownership - Government	0.07	0.00
Part of Health System	0.15	0.00
Resident-Bed Ratio	0.01	0.24
SNF Beds per 10,000 in Market	-0.31	0.01
Standardized Part A&B Payment - Average	0.78	0.07
Standardized Part A&B Payment – Change	-0.05	-0.02
Urban	0.42	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.20: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Percutaneous Coronary Intervention**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.15	-0.12
DSH Patient %	0.01	-0.09
Efficiency Measure	0.51	0.10
Episode Volume	0.04	-0.12
Hospital Market Share	-0.46	-0.05
Institutional PAC - Average	0.36	0.05
Institutional PAC - Change	0.02	0.02
IRF in Market	0.57	-0.07
Ownership - Government	-0.02	-0.08
Part of Health System	0.16	0.06
Resident-Bed Ratio	0.02	0.01
SNF Beds per 10,000 in Market	-0.34	0.04
Standardized Part A&B Payment - Average	0.54	0.05
Standardized Part A&B Payment – Change	-0.07	0.08
Urban	0.31	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.21: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Renal Failure**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.29	-0.07
DSH Patient %	-0.04	0.01
Efficiency Measure	0.19	0.00
Episode Volume	0.34	0.03
Hospital Market Share	-0.10	0.00
Institutional PAC - Average	0.19	0.07
Institutional PAC - Change	-0.01	-0.03
IRF in Market	0.52	0.01
Ownership - Government	-0.29	-0.02
Part of Health System	0.47	0.03
Resident-Bed Ratio	0.07	0.06
SNF Beds per 10,000 in Market	-0.33	0.02
Standardized Part A&B Payment - Average	0.44	0.04
Standardized Part A&B Payment – Change	-0.03	-0.05
Urban	0.47	0.01

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.22: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Sepsis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.41	-0.06
DSH Patient %	-0.06	0.09
Efficiency Measure	0.33	0.03
Episode Volume	0.40	0.03
Hospital Market Share	0.00	0.01
Institutional PAC - Average	0.32	0.06
Institutional PAC - Change	-0.03	0.00
IRF in Market	0.60	-0.02
Ownership - Government	-0.37	0.05
Part of Health System	0.57	0.03
Resident-Bed Ratio	0.08	0.04
SNF Beds per 10,000 in Market	-0.38	-0.01
Standardized Part A&B Payment - Average	0.59	0.09
Standardized Part A&B Payment – Change	-0.11	0.01
Urban	0.56	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.23: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Simple Pneumonia and Respiratory Infections**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.51	-0.10
DSH Patient %	-0.06	0.03
Efficiency Measure	0.28	0.03
Episode Volume	0.36	-0.03
Hospital Market Share	-0.01	-0.13
Institutional PAC - Average	0.18	0.07
Institutional PAC - Change	0.01	0.09
IRF in Market	0.62	0.00
Ownership - Government	-0.39	0.00
Part of Health System	0.66	0.05
Resident-Bed Ratio	0.14	-0.02
SNF Beds per 10,000 in Market	-0.43	0.02
Standardized Part A&B Payment - Average	0.60	0.01
Standardized Part A&B Payment – Change	-0.13	0.02
Urban	0.61	-0.05

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.24: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Stroke**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.17	0.00
DSH Patient %	0.01	0.03
Efficiency Measure	0.09	-0.05
Episode Volume	0.08	-0.04
Hospital Market Share	-0.18	-0.04
Institutional PAC - Average	0.15	0.00
Institutional PAC - Change	0.06	0.04
IRF in Market	0.40	0.00
Ownership - Government	-0.19	-0.08
Part of Health System	0.34	0.03
Resident-Bed Ratio	0.07	0.02
SNF Beds per 10,000 in Market	-0.38	0.03
Standardized Part A&B Payment - Average	0.30	-0.02
Standardized Part A&B Payment – Change	0.00	0.08
Urban	0.43	0.00

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit F.25: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Urinary Tract Infection**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.41	0.03
DSH Patient %	-0.05	0.11
Efficiency Measure	0.28	0.04
Episode Volume	0.30	-0.03
Hospital Market Share	-0.06	-0.03
Institutional PAC - Average	0.16	-0.05
Institutional PAC - Change	-0.04	0.01
IRF in Market	0.48	0.02
Ownership - Government	-0.34	0.02
Part of Health System	0.64	0.06
Resident-Bed Ratio	0.10	0.09
SNF Beds per 10,000 in Market	-0.37	-0.01
Standardized Part A&B Payment - Average	0.46	0.01
Standardized Part A&B Payment – Change	0.04	0.03
Urban	0.50	0.01

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.26: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Back & Neck Except Spinal Fusion (OP)**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.07	0.01
DSH Patient %	0.15	-0.05
Efficiency Measure	0.37	-0.09
Episode Volume	0.01	0.06
Hospital Market Share	-0.30	0.01
IRF in Market	0.54	0.03
Ownership - Government	-0.25	0.11
Part of Health System	0.22	-0.07
Resident-Bed Ratio	0.34	-0.08
SNF Beds per 10,000 in Market	-0.35	-0.36
Standardized Part A&B Payment - Average	0.39	-0.08
Standardized Part A&B Payment – Change	-0.11	0.20
Urban	0.36	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.27: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Cardiac Defibrillator**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.21	-0.12
DSH Patient %	-0.05	0.01
Efficiency Measure	0.37	-0.04
Episode Volume	-0.06	0.15
Hospital Market Share	-0.47	0.02
IRF in Market	0.55	0.10
Ownership - Government	0.02	-0.06
Part of Health System	0.10	0.24
Resident-Bed Ratio	-0.01	0.09
SNF Beds per 10,000 in Market	-0.31	0.27
Standardized Part A&B Payment - Average	0.19	-0.12
Standardized Part A&B Payment – Change	-0.11	0.02
Urban	0.30	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.28: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Percutaneous Coronary Intervention (OP)**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.10	-0.13
DSH Patient %	0.08	0.10
Efficiency Measure	0.22	0.13
Episode Volume	-0.01	-0.14
Hospital Market Share	-0.48	-0.10
IRF in Market	0.56	0.00
Ownership - Government	0.04	0.00
Part of Health System	0.15	-0.18
Resident-Bed Ratio	0.08	0.08
SNF Beds per 10,000 in Market	-0.39	0.05
Standardized Part A&B Payment - Average	0.39	0.06
Standardized Part A&B Payment – Change	-0.08	-0.10
Urban	0.25	-0.07

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.29: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Seizures**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	0.01	0.10
DSH Patient %	-0.04	0.01
Efficiency Measure	0.14	0.08
Episode Volume	-0.05	-0.02
Hospital Market Share	-0.41	0.14
Institutional PAC - Average	0.20	0.04
Institutional PAC - Change	-0.14	-0.06
IRF in Market	0.34	-0.08
Ownership - Government	-0.20	0.02
Part of Health System	0.19	0.10
Resident-Bed Ratio	-0.08	0.00
SNF Beds per 10,000 in Market	-0.35	-0.04
Standardized Part A&B Payment - Average	0.27	0.11
Standardized Part A&B Payment – Change	-0.11	-0.03
Urban	0.25	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.30: Standardized Differences of Matching Variables Before and After Matching, Hospitals, Spinal Fusion**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Average Case Weight of Discharges	-0.02	0.11
DSH Patient %	0.04	-0.04
Efficiency Measure	0.32	0.00
Episode Volume	0.17	0.12
Hospital Market Share	-0.25	-0.09
Institutional PAC - Average	0.48	-0.03
Institutional PAC - Change	-0.13	-0.06
IRF in Market	0.56	-0.02
Ownership - Government	-0.23	0.04
Part of Health System	0.25	-0.05
Resident-Bed Ratio	0.20	-0.02
SNF Beds per 10,000 in Market	-0.26	-0.06
Standardized Part A&B Payment - Average	0.43	-0.04
Standardized Part A&B Payment – Change	-0.04	0.04
Urban	0.29	0.00

*Note:* See the first page of this appendix for data sources and more information.

## D. Standardized Mean Differences – Physician Group Practices

**Exhibit F.31: Standardized Differences of Matching Variables Before and After Matching, PGPs, Acute Myocardial Infarction**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.37	0.10
HCC Score	-0.13	0.20
Institutional PAC - Average	0.08	-0.04
Institutional PAC - Change	-0.04	-0.10
Number of Hospitals - 3+	0.80	0.03
Percent Black or African American	-0.05	0.03
Percent Disabled, No ESRD	-0.11	0.12
Percent Dual Eligible	-0.10	0.00
Percent Female	0.11	-0.02
Percent Over 80 Years Old	0.07	-0.09
PGP in Multiple CBSAs	0.78	0.00
Standardized Part A&B Payment - Average	0.24	0.07
Standardized Part A&B Payment – Change	-0.18	-0.16

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.32: Standardized Differences of Matching Variables Before and After Matching, PGPs, Cardiac Arrhythmia**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.44	0.01
HCC Score	-0.15	0.04
Institutional PAC - Average	0.34	0.09
Institutional PAC - Change	0.04	0.09
Number of Hospitals - 3+	0.67	0.03
Percent Black or African American	-0.06	0.15
Percent Disabled, No ESRD	0.03	-0.21
Percent Dual Eligible	0.09	-0.05
Percent Female	0.11	-0.02
Percent Over 80 Years Old	0.21	0.21
PGP in Multiple CBSAs	0.79	0.00
Standardized Part A&B Payment - Average	0.36	0.06
Standardized Part A&B Payment – Change	0.03	-0.05

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.33: Standardized Differences of Matching Variables Before and After Matching,  
PGPs, Congestive Heart Failure**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.56	-0.07
HCC Score	-0.22	-0.03
Institutional PAC - Average	-0.11	-0.25
Institutional PAC - Change	-0.09	-0.11
Number of Hospitals - 3+	0.65	0.05
Percent Black or African American	-0.07	0.15
Percent Disabled, No ESRD	0.00	0.00
Percent Dual Eligible	-0.01	0.15
Percent Female	-0.09	-0.01
Percent Over 80 Years Old	-0.05	-0.12
PGP in Multiple CBSAs	0.73	0.00
Standardized Part A&B Payment - Average	0.00	0.06
Standardized Part A&B Payment – Change	-0.12	0.04

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit F.34: Standardized Differences of Matching Variables Before and After Matching, PGP, Gastrointestinal Hemorrhage**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.44	0.15
HCC Score	-0.04	0.01
Institutional PAC - Average	0.16	0.12
Institutional PAC - Change	-0.15	0.03
Mortality Rate 90-Day - Average	0.27	0.08
Mortality Rate 90-Day - Change	0.12	-0.07
Number of Hospitals - 3+	0.87	0.07
Number of NPIs - Large	0.52	0.15
Number of NPIs - Small	-0.28	-0.05
Part of Health System	0.00	0.00
Percent Black or African American	-0.16	0.19
Percent Disabled, No ESRD	-0.09	0.09
Percent Dual Eligible	-0.09	-0.15
Percent Episodes with IP Stay in 180 Days Before	-0.06	0.11
Percent Female	-0.03	-0.12
Percent Over 80 Years Old	-0.16	-0.15
Percent White	0.04	0.15
PGP in Multiple CBSAs	0.87	0.04
Population - Continuous	-0.07	-0.04
Readmission Rate 90-Day – Average	0.08	-0.09
Readmission Rate 90-Day – Change	0.03	-0.11
Standardized Part A&B Payment - Average	0.32	-0.05
Standardized Part A&B Payment – Change	-0.20	-0.01
Urban	-0.15	0.04

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.35: Standardized Differences of Matching Variables Before and After Matching, PGP, Gastrointestinal Obstruction**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.39	0.03
HCC Score	-0.24	-0.26
Institutional PAC - Average	0.13	-0.15
Institutional PAC - Change	0.09	-0.09
Number of Hospitals - 3+	0.81	0.00
Percent Black or African American	0.06	0.06
Percent Disabled, No ESRD	-0.25	-0.02
Percent Dual Eligible	-0.08	0.08
Percent Female	0.10	-0.04
Percent Over 80 Years Old	0.18	-0.07
PGP in Multiple CBSAs	0.91	0.00
Standardized Part A&B Payment - Average	0.17	-0.27
Standardized Part A&B Payment – Change	-0.13	0.09

**Note:** See the first page of this appendix for data sources and more information.



**Exhibit F.36: Standardized Differences of Matching Variables Before and After Matching, PGP, Cellulitis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.47	0.04
HCC Score	-0.33	-0.03
Institutional PAC - Average	0.01	-0.13
Institutional PAC - Change	0.05	0.21
Mortality Rate 90-Day - Average	0.18	0.06
Mortality Rate 90-Day - Change	-0.04	-0.04
Number of Hospitals - 3+	0.78	-0.03
Number of NPIs - Large	0.38	-0.03
Number of NPIs - Small	-0.46	0.15
Part of Health System	0.00	0.00
Percent Black or African American	-0.11	0.02
Percent Disabled, No ESRD	-0.26	-0.04
Percent Dual Eligible	-0.14	-0.12
Percent Episodes with IP Stay in 180 Days Before	-0.33	-0.18
Percent Female	-0.02	0.07
Percent Over 80 Years Old	0.23	0.09
Percent White	0.04	-0.07
PGP in Multiple CBSAs	0.90	0.03
Population - Continuous	0.07	-0.16
Readmission Rate 90-Day – Average	-0.15	-0.01
Readmission Rate 90-Day – Change	-0.20	-0.11
Standardized Part A&B Payment - Average	0.11	-0.14
Standardized Part A&B Payment – Change	-0.02	0.05
Urban	0.26	-0.12

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.37: Standardized Differences of Matching Variables Before and After Matching, PGPs, Chronic Obstructive Pulmonary Disease, Bronchitis, Asthma**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.68	-0.04
HCC Score	-0.02	-0.14
Institutional PAC - Average	-0.12	0.03
Institutional PAC - Change	0.08	-0.13
Number of Hospitals - 3+	0.80	-0.08
Percent Black or African American	-0.24	-0.02
Percent Disabled, No ESRD	-0.13	-0.09
Percent Dual Eligible	-0.16	-0.16
Percent Female	-0.19	-0.13
Percent Over 80 Years Old	-0.07	0.00
PGP in Multiple CBSAs	0.94	0.00
Standardized Part A&B Payment - Average	0.13	0.03
Standardized Part A&B Payment – Change	0.10	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.38: Standardized Differences of Matching Variables Before and After Matching, PGPs, Renal Failure**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.48	-0.03
HCC Score	-0.43	0.08
Institutional PAC - Average	0.18	0.08
Institutional PAC - Change	0.11	-0.08
Number of Hospitals - 3+	0.74	-0.03
Percent Black or African American	-0.17	0.03
Percent Disabled, No ESRD	-0.15	0.04
Percent Dual Eligible	-0.07	0.12
Percent Female	-0.01	-0.12
Percent Over 80 Years Old	0.21	0.04
PGP in Multiple CBSAs	0.85	0.00
Standardized Part A&B Payment - Average	0.09	0.10
Standardized Part A&B Payment – Change	-0.11	-0.18

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.39: Standardized Differences of Matching Variables Before and After Matching, PGP, Sepsis**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.63	0.04
HCC Score	-0.37	-0.05
Institutional PAC - Average	-0.23	-0.03
Institutional PAC - Change	-0.07	0.01
Mortality Rate 90-Day - Average	-0.14	0.20
Mortality Rate 90-Day - Change	0.14	0.08
Number of Hospitals - 3+	0.74	-0.16
Number of NPIs - Large	0.80	-0.03
Number of NPIs - Small	-0.60	-0.06
Part of Health System	0.00	0.00
Percent Black or African American	-0.20	0.11
Percent Disabled, No ESRD	0.04	-0.10
Percent Dual Eligible	-0.22	-0.05
Percent Episodes with IP Stay in 180 Days Before	-0.35	-0.16
Percent Female	0.01	0.00
Percent Over 80 Years Old	-0.15	0.06
Percent White	0.26	-0.10
PGP in Multiple CBSAs	0.76	-0.13
Population - Continuous	-0.23	-0.03
Readmission Rate 90-Day – Average	-0.39	-0.12
Readmission Rate 90-Day – Change	-0.09	0.03
Standardized Part A&B Payment - Average	-0.26	0.07
Standardized Part A&B Payment – Change	-0.14	-0.07
Urban	-0.12	0.00

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.40: Standardized Differences of Matching Variables Before and After Matching, PGP, Simple Pneumonia and Respiratory Infections**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.59	0.03
HCC Score	-0.29	0.01
Institutional PAC - Average	-0.26	-0.18
Institutional PAC - Change	0.13	0.04
Mortality Rate 90-Day - Average	0.03	-0.06
Mortality Rate 90-Day - Change	0.06	0.13
Number of Hospitals - 3+	0.68	-0.08
Number of NPIs - Large	0.60	0.13
Number of NPIs - Small	-0.68	0.00
Part of Health System	0.00	0.00
Percent Black or African American	-0.21	0.09
Percent Disabled, No ESRD	-0.12	0.10
Percent Dual Eligible	-0.24	0.04
Percent Episodes with IP Stay in 180 Days Before	-0.52	-0.03
Percent Female	-0.21	-0.03
Percent Over 80 Years Old	0.02	-0.19
Percent White	0.18	0.01
PGP in Multiple CBSAs	0.79	-0.18
Population - Continuous	-0.16	-0.06
Readmission Rate 90-Day – Average	-0.19	-0.05
Readmission Rate 90-Day – Change	0.10	0.06
Standardized Part A&B Payment - Average	-0.08	-0.04
Standardized Part A&B Payment – Change	0.03	-0.04
Urban	0.08	-0.06

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.41: Standardized Differences of Matching Variables Before and After Matching, PGP, Urinary Tract Infection**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.54	0.06
HCC Score	-0.29	0.14
Institutional PAC - Average	0.13	-0.08
Institutional PAC - Change	-0.28	-0.03
Number of Hospitals - 3+	0.75	0.14
Percent Black or African American	-0.14	-0.01
Percent Disabled, No ESRD	-0.31	-0.09
Percent Dual Eligible	-0.25	-0.11
Percent Female	0.15	-0.02
Percent Over 80 Years Old	0.24	0.03
PGP in Multiple CBSAs	0.85	0.03
Standardized Part A&B Payment - Average	0.18	-0.07
Standardized Part A&B Payment – Change	-0.26	0.21

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.42: Standardized Differences of Matching Variables Before and After Matching, PGP, Seizures**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.34	0.12
HCC Score	0.09	-0.19
Institutional PAC - Average	0.44	-0.16
Institutional PAC - Change	0.09	-0.10
Number of Hospitals - 3+	0.90	0.09
Percent Black or African American	0.03	0.18
Percent Disabled, No ESRD	-0.55	-0.18
Percent Dual Eligible	-0.43	0.03
Percent Female	0.12	0.15
Percent Over 80 Years Old	0.57	0.08
PGP in Multiple CBSAs	1.10	0.00
Standardized Part A&B Payment - Average	0.15	0.05
Standardized Part A&B Payment – Change	-0.04	-0.09

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.43: Standardized Differences of Matching Variables Before and After Matching, PGP, Stroke**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.38	0.13
HCC Score	-0.21	0.03
Institutional PAC - Average	0.18	-0.01
Institutional PAC - Change	-0.03	-0.11
Number of Hospitals - 3+	0.72	0.07
Percent Black or African American	-0.04	0.10
Percent Disabled, No ESRD	0.08	-0.21
Percent Dual Eligible	-0.11	-0.24
Percent Female	-0.06	-0.01
Percent Over 80 Years Old	-0.09	0.24
PGP in Multiple CBSAs	0.85	0.00
Standardized Part A&B Payment - Average	0.13	-0.04
Standardized Part A&B Payment – Change	-0.01	-0.07

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit F.44: Standardized Differences of Matching Variables Before and After Matching, PGPs, Hip & Femur Procedures Except Major Joint**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.23	-0.06
HCC Score	-0.04	0.03
Institutional PAC - Average	0.13	-0.22
Institutional PAC - Change	-0.07	0.25
Mortality Rate 90-Day - Average	-0.03	-0.09
Mortality Rate 90-Day - Change	0.10	-0.20
Number of Hospitals - 3+	0.87	0.06
Number of NPIs - Large	-0.11	-0.15
Number of NPIs - Small	0.29	0.00
Part of Health System	0.00	0.00
Percent Black or African American	-0.12	0.02
Percent Disabled, No ESRD	0.00	-0.08
Percent Dual Eligible	-0.29	0.02
Percent Episodes with IP Stay in 180 Days Before	0.20	-0.10
Percent Female	0.48	-0.10
Percent Over 80 Years Old	-0.51	-0.10
Percent White	0.24	0.09
PGP in Multiple CBSAs	0.40	-0.07
Population - Continuous	-0.16	-0.10
Readmission Rate 90-Day – Average	0.18	0.10
Readmission Rate 90-Day – Change	-0.04	-0.24
Standardized Part A&B Payment - Average	-0.26	-0.15
Standardized Part A&B Payment – Change	0.04	-0.04
Urban	0.12	0.08

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.45: Standardized Differences of Matching Variables Before and After Matching, PGP, Major Joint Replacement of the Lower Extremity**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.71	0.12
HCC Score	-0.19	0.02
Institutional PAC - Average	-0.09	0.03
Institutional PAC - Change	-0.46	-0.11
Number of Hospitals - 3+	0.70	0.03
Percent Black or African American	0.10	-0.10
Percent Disabled, No ESRD	-0.21	-0.04
Percent Dual Eligible	-0.23	0.00
Percent Female	-0.07	0.02
Percent Over 80 Years Old	-0.20	-0.01
PGP in Multiple CBSAs	0.42	0.06
Standardized Part A&B Payment - Average	-0.19	0.00
Standardized Part A&B Payment – Change	-0.27	-0.06

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit F.46: Standardized Differences of Matching Variables Before and After Matching, PGP, Major Joint Replacement of the Upper Extremity**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.49	-0.19
HCC Score	-0.34	0.02
Institutional PAC - Average	0.05	0.00
Institutional PAC - Change	-0.06	0.00
Number of Hospitals - 3+	0.55	0.08
Percent Black or African American	-0.06	0.09
Percent Disabled, No ESRD	-0.48	-0.01
Percent Dual Eligible	-0.41	0.00
Percent Female	0.06	0.16
Percent Over 80 Years Old	0.09	-0.02
PGP in Multiple CBSAs	0.17	0.00
Standardized Part A&B Payment - Average	0.09	0.11
Standardized Part A&B Payment – Change	-0.06	0.09

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit F.47: Standardized Differences of Matching Variables Before and After Matching, PGP, Back and Neck Except Spinal Fusion**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.49	0.05
HCC Score	-0.07	-0.22
Number of Hospitals - 3+	0.68	0.07
Percent Black or African American	-0.04	0.08
Percent Disabled, No ESRD	-0.80	0.08
Percent Dual Eligible	-0.91	-0.01
Percent Female	-0.31	-0.04
Percent Over 80 Years Old	0.12	-0.01
PGP in Multiple CBSAs	0.22	-0.22
Standardized Part A&B Payment - Average	0.24	-0.18
Standardized Part A&B Payment – Change	0.18	0.18

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit F.48: Standardized Differences of Matching Variables Before and After Matching, PGP, Spinal Fusion (OP)**

Variable	Standardized Difference Before Matching	Standardized Difference After Matching
Episode Volume	0.80	-0.09
HCC Score	-0.50	0.38
Institutional PAC - Average	-0.13	0.18
Institutional PAC - Change	-0.39	0.08
Number of Hospitals - 3+	0.78	-0.13
Percent Black or African American	-0.05	0.15
Percent Disabled, No ESRD	-0.79	0.09
Percent Dual Eligible	-0.78	-0.01
Percent Female	-0.07	-0.25
Percent Over 80 Years Old	0.11	-0.14
PGP in Multiple CBSAs	0.28	0.08
Share in MS-DRG 453	-0.16	0.09
Share in MS-DRG 454	0.00	0.03
Share in MS-DRG 455	0.31	0.04
Share in MS-DRG 459	-0.36	0.17
Share in MS-DRG 460	0.41	-0.07
Share in MS-DRG 471	-0.75	-0.24
Share in MS-DRG 472	-0.69	-0.02
Share in MS-DRG 473	-0.38	0.05
Standardized Part A&B Payment – Average	-0.18	0.19
Standardized Part A&B Payment – Change	-0.04	0.24

**Note:** See the first page of this appendix for data sources and more information.

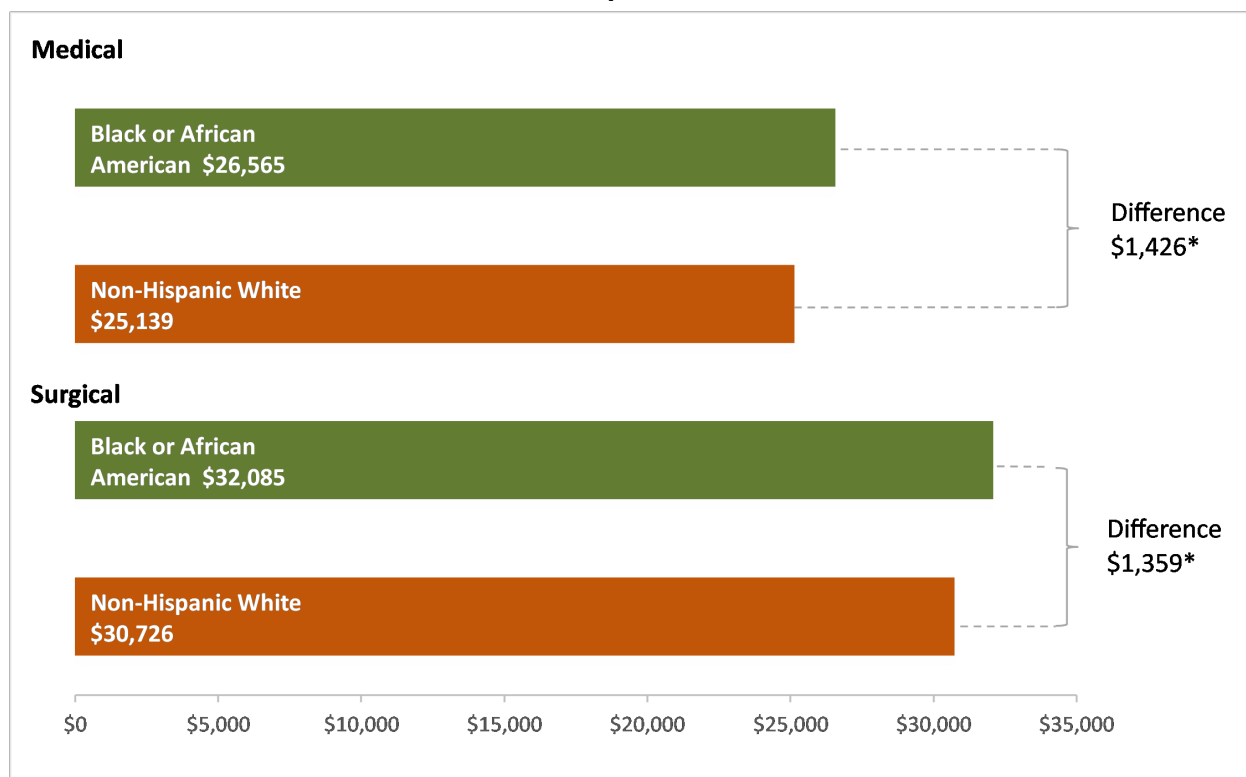
## Appendix G: Analysis of Differences in Baseline Outcomes

In this appendix we report results from our assessment of the presence of unadjusted baseline differences in outcomes for beneficiary subpopulations. This analysis allows us to better understand the landscape in which the BPCI Advanced Model was introduced, and if there were pre-existing differences that may influence the impact of the model on beneficiary subpopulations. We analyzed differences in total episode payments, which included Medicare Parts A and B payments including beneficiary cost sharing during the anchor stay and the 90-days PDP and had been standardized to remove geographic and other payment adjustments, the readmission rate during the 90-day PDP, and the mortality rate during the anchor stay and 90-day PDP on the BPCI Advanced evaluation sample for the following subpopulations of beneficiaries: Black or African American beneficiaries and Non-Hispanic White beneficiaries; Hispanic beneficiaries and Non-Hispanic White beneficiaries; and beneficiaries with dual eligibility and beneficiaries without dual eligibility. The race and ethnicity data come from the RTI race codes from the MBSF. All results are based on the BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs. Results were not risk adjusted for differences in patient case mix. While results presented below are for the BPCI Advanced evaluation sample only, the results for the comparison group and for all eligible Medicare FFS episodes nationwide are presented in **Appendix H**, and the minimum hospital baseline volume criterion was not applied.

### A. Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White

We calculated the baseline difference between total episode payments for Black or African American beneficiaries and for Non-Hispanic White beneficiaries. We found that Black or African American beneficiaries had a higher total episode payment compared to Non-Hispanic White beneficiaries in both medical and surgical episodes with differences of \$1,426 and \$1,359, respectively (Exhibit G.1).

**Exhibit G.1: Baseline Differences in Total Allowed Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White**



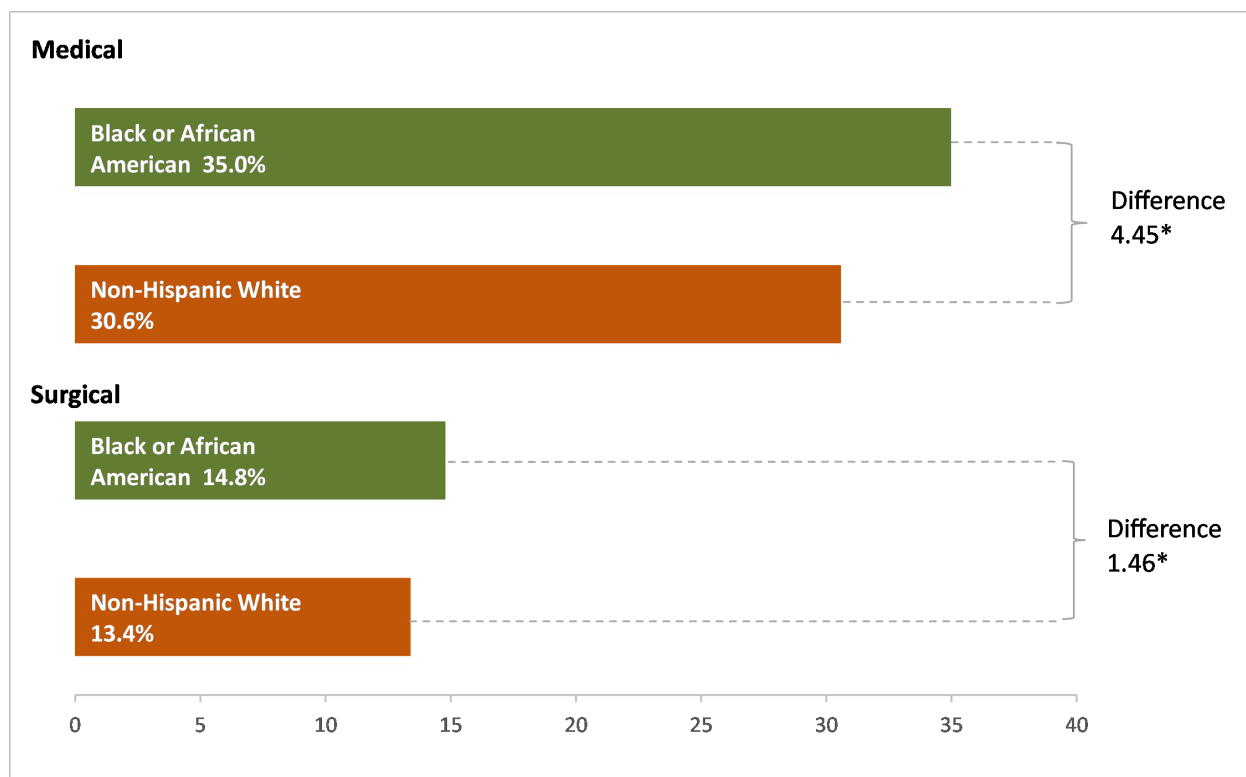
**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

Black or African American beneficiaries had a higher readmission rate compared to Non-Hispanic White beneficiaries in both medical and surgical episodes. The readmission rate in episodes where the beneficiary was Black or African American relative to episodes where the beneficiary was Non-Hispanic White was 4.45 pp higher in the for medical episodes and 1.46 pp higher in surgical episodes (Exhibit G.2).

**Exhibit G.2: Baseline Differences in Readmission Rate Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White**



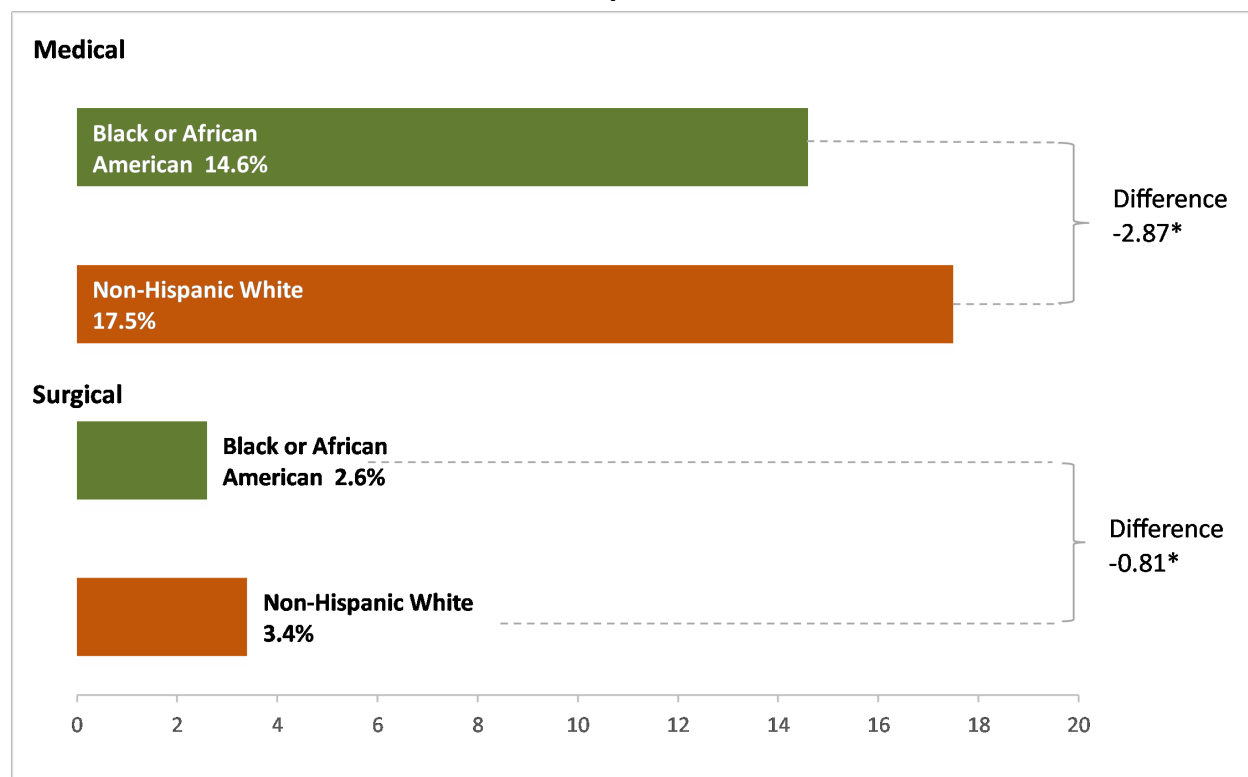
**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

The baseline difference in the unadjusted mortality rate for episodes where the beneficiary was Black or African American beneficiaries and where the beneficiary was Non-Hispanic White indicated a lower mortality rate for Black or African American beneficiaries in both medical and surgical episodes. The mortality rate for medical episodes where the beneficiary was Black or African American was 2.87 pp lower than the mortality rate for Non-Hispanic White beneficiaries in medical episodes (Exhibit G.3). This difference was 0.81 pp in surgical episodes.

**Exhibit G.3: Baseline Differences in Mortality Rate During the Anchor Stay and 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White**



*Note:* These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

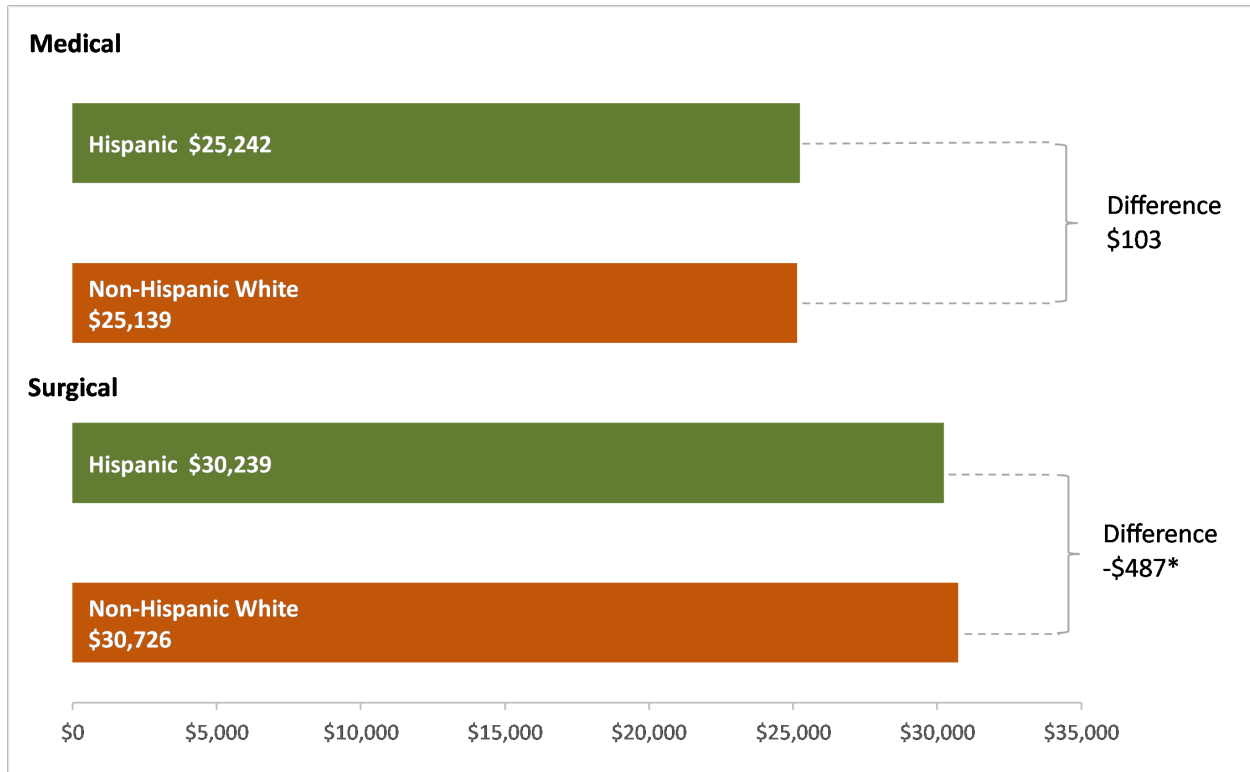
\* Denotes statistically significant difference between groups at  $p < 0.1$

*Source:* The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

**B. Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White**

In our analysis of the unadjusted differences in baseline outcomes for Hispanic beneficiaries and Non-Hispanic White beneficiaries, we found that the direction of the baseline differences varied by outcome and clinical episode type. Average total episode payments were higher by \$103 for medical episodes where the beneficiary was Hispanic compared to episodes where the beneficiary was Non-Hispanic White. For surgical episodes, episodes where the beneficiary was Hispanic had on average total episode payments that were \$487 lower than episode payments for Non-Hispanic White beneficiaries (Exhibit G.4). For the readmission rate, the pattern was reversed: The readmission rate was higher by 0.93pp for Hispanic beneficiaries in medical episodes, and slightly lower by 0.13 pp in surgical episodes, compared to episodes where the beneficiary was Non-Hispanic White (Exhibit G.5).

**Exhibit G.4: Baseline Differences in Total Allowed Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White**

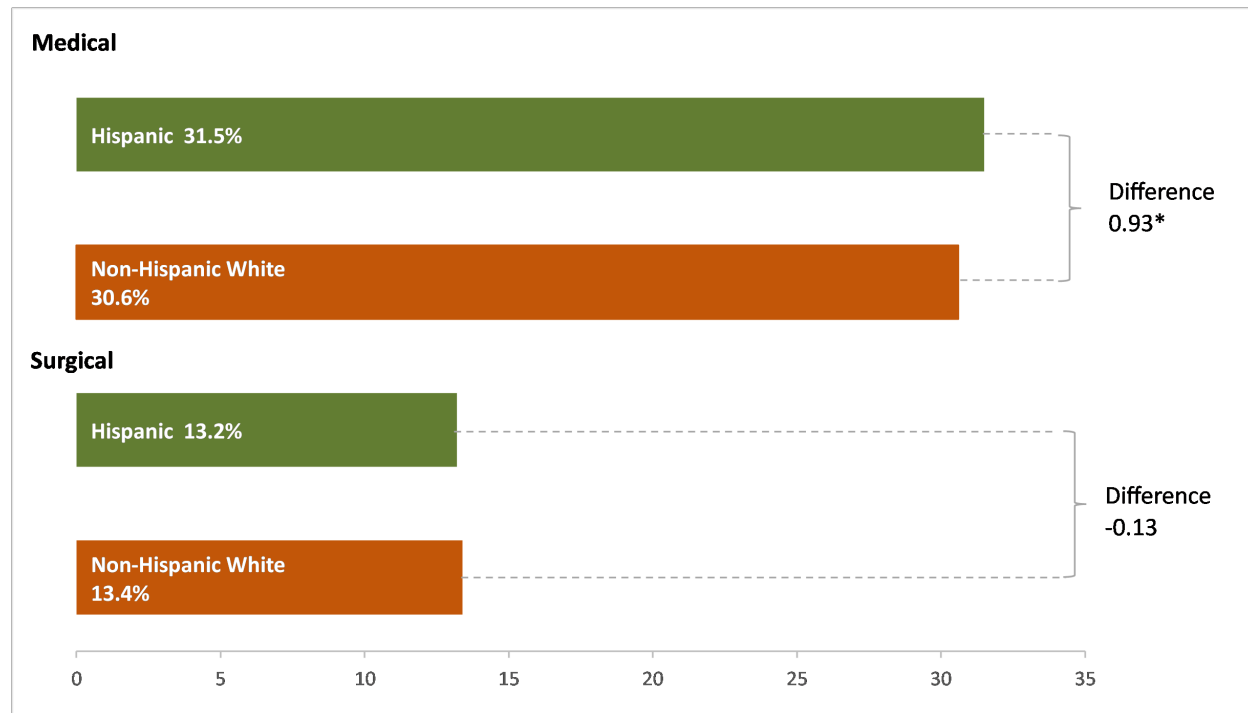


**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

**Exhibit G.5: Baseline Differences in Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White**



**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

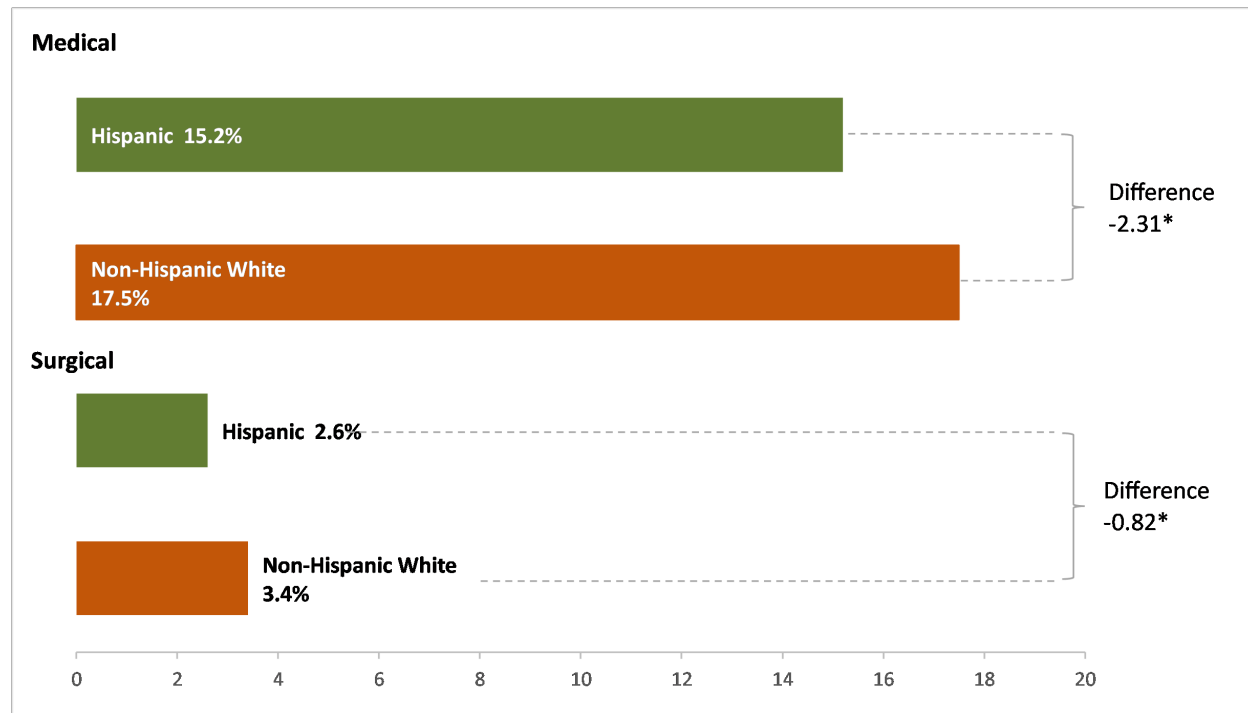
\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

The baseline difference in the unadjusted mortality rate between Hispanic beneficiaries and Non-Hispanic White beneficiaries indicated a lower mortality rate for Hispanic beneficiaries in both medical and surgical episodes. The mortality rate was 2.31 pp lower in medical episodes and 0.82 pp lower in surgical episodes where beneficiary was Hispanic compared to those where the beneficiary was Non-Hispanic White (Exhibit G.6).



**Exhibit G.6: Baseline Differences in Mortality Rate During the Anchor Stay and 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White**



*Note:* These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

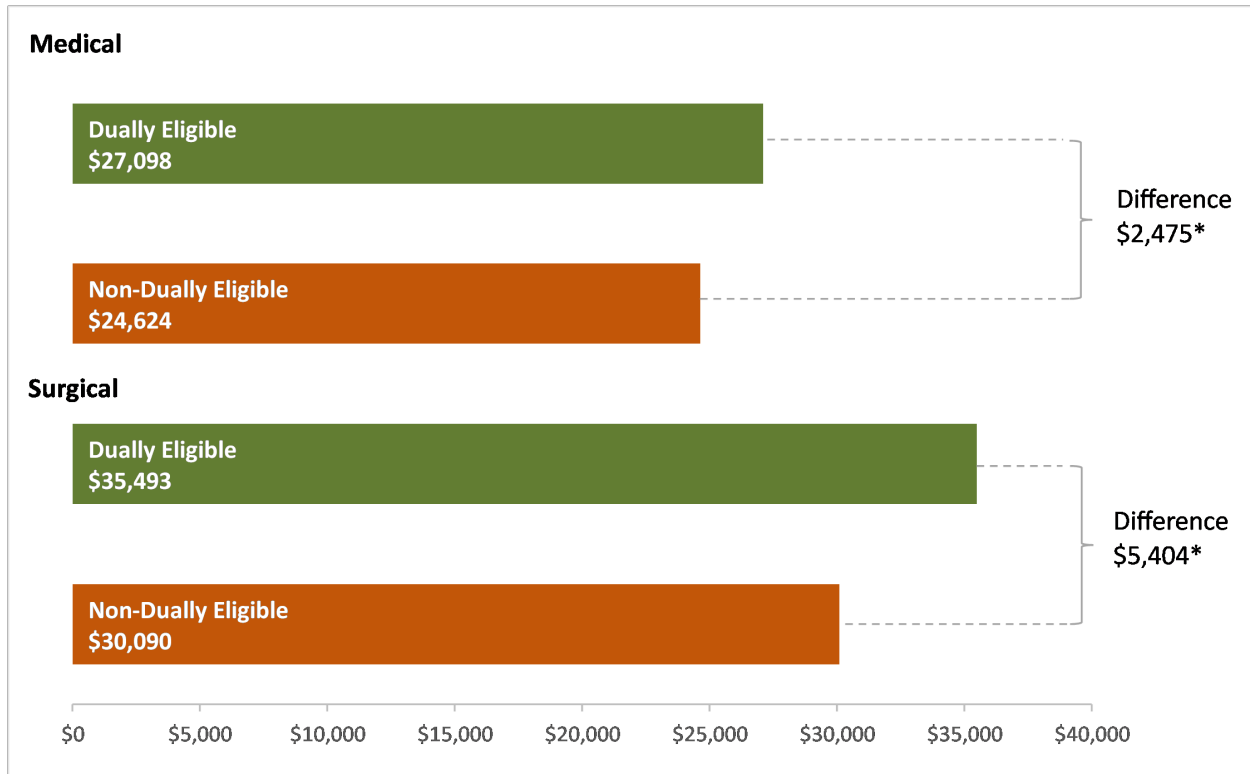
\* Denotes statistically significant difference between groups at  $p < 0.1$

*Source:* The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

**C. Beneficiaries who are Dually Eligible for Medicare and Medicaid and Beneficiaries who are Non-Dually Eligible**

We calculated the baseline difference in the unadjusted total episode payments for beneficiaries dually eligible for Medicare and Medicaid and beneficiaries without dual eligibility. We found that dually eligible beneficiaries had a higher total episode payment on average compared non-dually eligible beneficiaries in both medical and surgical episodes with differences of \$2,475 and \$5,404, respectively (Exhibit G.7).

**Exhibit G.7: Baseline Differences in Total Allowed Payments Through the 90-day PDP, Beneficiaries who are Dually Eligible and Beneficiaries who are Non-dually Eligible**



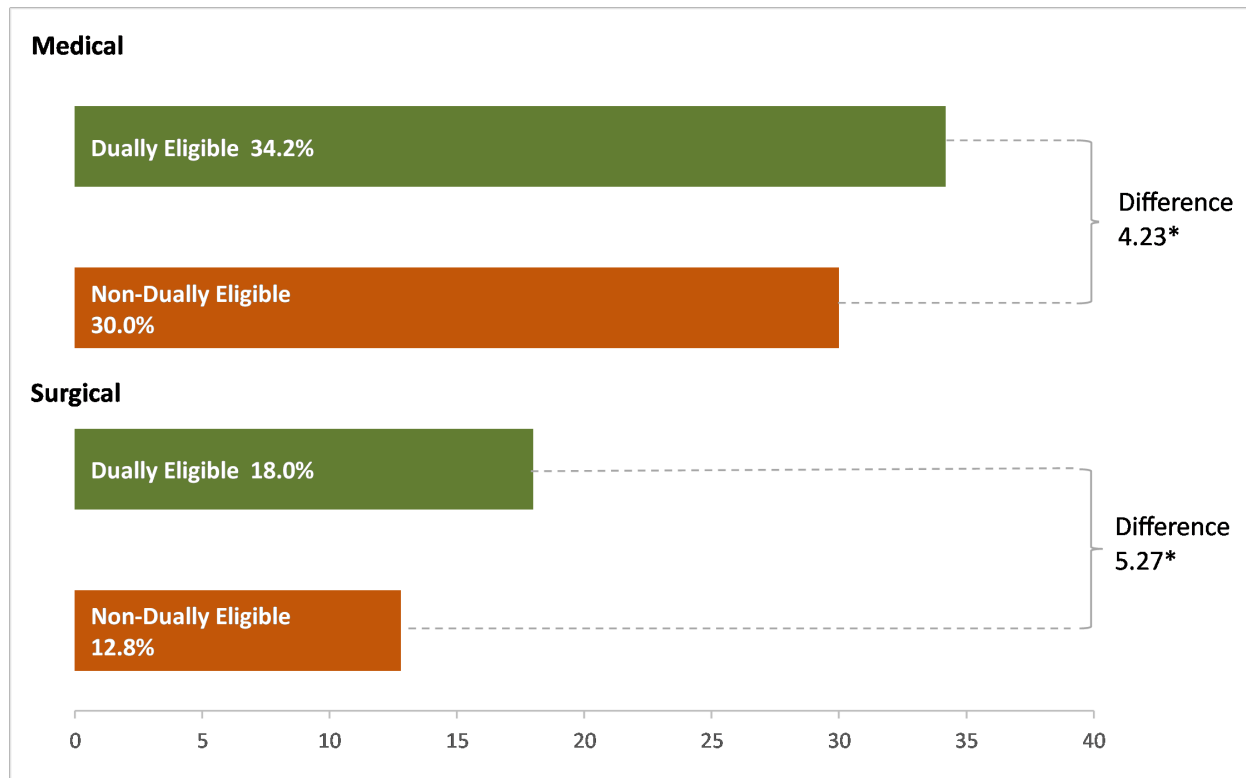
**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

Dually eligible beneficiaries had a higher readmission rate in medical and surgical episodes compared to non-dually eligible beneficiaries. The readmission rate where the beneficiary was dually eligible relative to episodes where the beneficiary was not dually eligible was 4.23 pp higher in the medical clinical episode grouping and 5.27 pp higher in the surgical episode grouping (Exhibit G.8).

**Exhibit G.8: Baseline Differences in Readmission Rate Through the 90-day PDP, Beneficiaries who are Dually Eligible and Beneficiaries who are Non-dually Eligible**



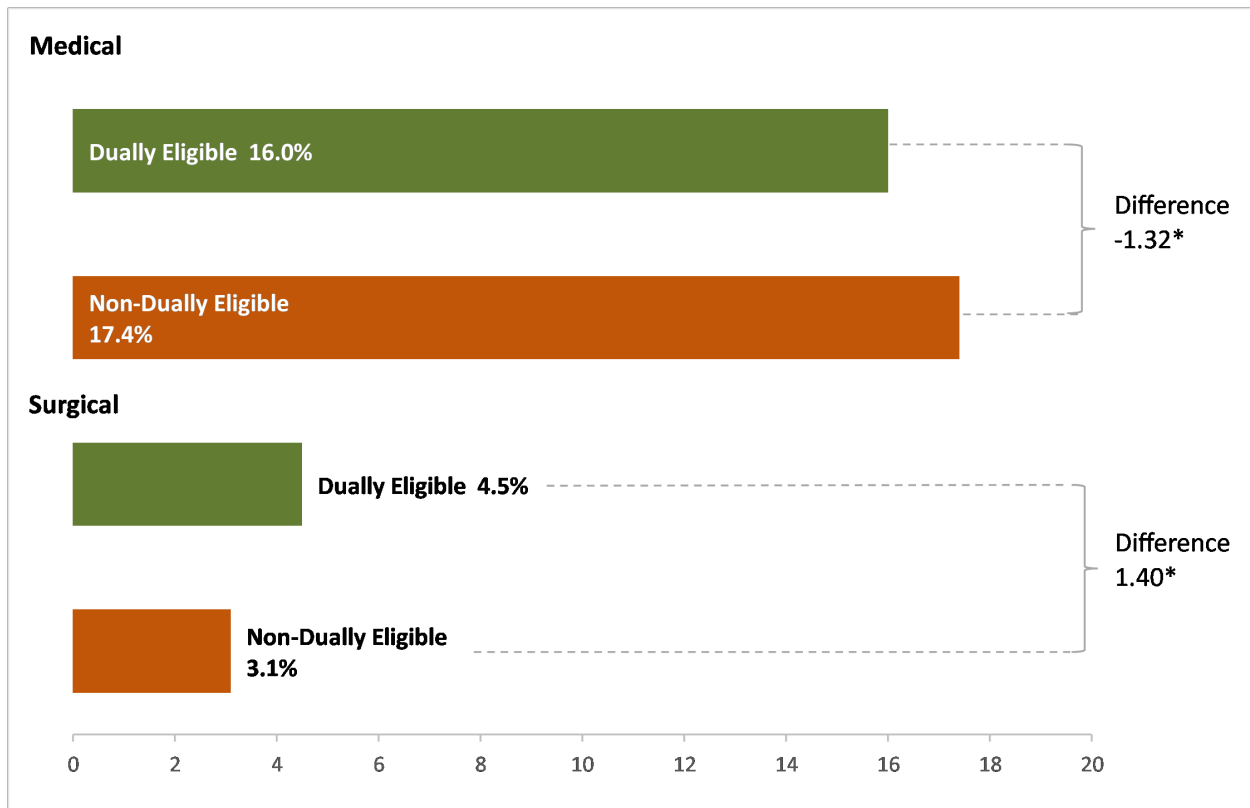
*Note:* These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

*Source:* The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

The direction of the baseline differences for the mortality rate varied by episode type. For medical episodes, the mortality rate was lower by 1.32 pp in episodes where the beneficiary was dually eligible. For surgical episodes, the mortality rate was higher by 1.40 pp for dually eligible beneficiaries (Exhibit G.9).

**Exhibit G.9: Baseline Differences in Mortality Rate During the Anchor Stay and 90-day PDP, Beneficiaries who are Dually Eligible and Beneficiaries who are Non-dually Eligible**



**Note:** These results are not risk adjusted. The minimum hospital baseline volume criterion was not applied. The race and ethnicity data come from the Research Triangle Institute (RTI) race codes from the Master Beneficiary Summary File.

\* Denotes statistically significant difference between groups at  $p < 0.1$

**Source:** The BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) for BPCI Advanced hospitals and PGPs.

## Appendix H: Supplemental Results for Differences in Baseline Outcomes

The following tables present the differences in baseline outcomes by beneficiary subpopulation for BPCI Advanced episodes in the evaluation sample, comparison group episodes in the evaluation sample, and all BPCI Advanced eligible FFS Medicare episodes nationwide and the minimum hospital baseline volume criterion was not applied. All results are based on the CMS BPCI Advanced Database for Model Year 4 and the BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period). The race and ethnicity data come from the RTI race codes from the MBSF. The tables present the mean values in the baseline period and are not risk adjusted. The baseline difference represents the difference between the mean for subpopulation 1 and the mean for subpopulation 2. Differences that are statistically significant at  $p < 0.1$  are denoted with an asterisk.

See **Appendix C** for additional information on the methods used to determine the sample, outcome measures, and data sources. Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**A. Baseline Means and Differences in Outcomes, BPCI Advanced Hospitals and PGPs**

**Exhibit H.1: Total Allowed Payments Through the 90-day PDP, Medical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	184,757	1,321,772	\$26,565	\$25,139	\$1,426*
Hispanic	Non-Hispanic White	103,852	1,321,772	\$25,242	\$25,139	\$103
Dually Eligible	Non-dually Eligible	446,416	1,219,592	\$27,098	\$24,624	\$2,475*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.2: Total Allowed Payments Through the 90-day PDP, Surgical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	20,619	318,184	\$32,085	\$30,726	\$1,359*
Hispanic	Non-Hispanic White	13,781	318,184	\$30,239	\$30,726	-\$487*
Dually Eligible	Non-dually Eligible	43,780	322,254	\$35,493	\$30,090	\$5,404*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.3: Readmission Rate Through the 90-day PDP, Medical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	182,237	1,310,961	35.0%	30.6%	4.45 pp*
Hispanic	Non-Hispanic White	102,470	1,310,961	31.5%	30.6%	0.93 pp*
Dually Eligible	Non-dually Eligible	439,380	1,211,363	34.2%	30.0%	4.23 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.4: Readmission Rate Through the 90-day PDP, Surgical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	20,602	318,007	14.8%	13.4%	1.46 pp*
Hispanic	Non-Hispanic White	13,764	318,007	13.2%	13.4%	-0.13 pp
Dually Eligible	Non-dually Eligible	43,695	322,119	18.0%	12.8%	5.27 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.5: Mortality Rate During the Anchor Stay and 90-day PDP, Medical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	186,609	1,353,359	14.6%	17.5%	-2.87 pp*
Hispanic	Non-Hispanic White	105,098	1,353,359	15.2%	17.5%	-2.31 pp*
Dually Eligible	Non-dually Eligible	450,255	1,252,013	16.0%	17.4%	-1.32 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.6: Mortality Rate During the Anchor Stay and 90-day PDP, Surgical Episodes, BPCI Advanced Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	20,666	318,487	2.6%	3.4%	-0.81 pp*
Hispanic	Non-Hispanic White	13,782	318,487	2.6%	3.4%	-0.82 pp*
Dually Eligible	Non-dually Eligible	43,609	322,783	4.5%	3.1%	1.40 pp*

*Note:* See the first page of this appendix for data sources and more information.

**B. Baseline Means and Differences in Outcomes, Comparison Hospitals and PGPs**

**Exhibit H.7: Total Allowed Payments Through the 90-day PDP, Medical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	161,690	1,334,268	\$26,096	\$24,754	\$1,342*
Hispanic	Non-Hispanic White	77,072	1,334,268	\$24,842	\$24,754	\$88
Dually Eligible	Non-dually Eligible	437,238	1,193,668	\$26,651	\$24,264	\$2,388*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.8: Total Allowed Payments Through the 90-day PDP, Surgical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	19,164	304,030	\$32,264	\$30,011	\$2,253*
Hispanic	Non-Hispanic White	11,244	304,030	\$32,698	\$30,011	\$2,687*
Dually Eligible	Non-dually Eligible	43,703	302,618	\$34,761	\$29,495	\$5,266*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.9: Readmission Rate Through the 90-day PDP, Medical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	159,975	1,324,408	34.4%	30.4%	4.04 pp*
Hispanic	Non-Hispanic White	76,259	1,324,408	31.8%	30.4%	1.35 pp*
Dually Eligible	Non-dually Eligible	431,051	1,186,950	34.1%	29.7%	4.43 pp*

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit H.10: Readmission Rate Through the 90-day PDP, Surgical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 3018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	19,145	303,883	15.2%	12.8%	2.47 pp*
Hispanic	Non-Hispanic White	11,236	303,883	14.8%	12.8%	2.04 pp*
Dually Eligible	Non-dually Eligible	43,643	302,494	17.6%	12.2%	5.38 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.11: Mortality Rate During the Anchor Stay and 90-day PDP, Medical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 3018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	163,786	1,369,540	14.9%	17.2%	-2.28 pp*
Hispanic	Non-Hispanic White	78,444	1,369,540	14.2%	17.2%	-3.03 pp*
Dually Eligible	Non-dually Eligible	442,429	1,228,972	15.6%	17.2%	-1.68 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.12: Mortality Rate During the Anchor Stay and 90-day PDP, Surgical Episodes, Comparison Hospitals and PGPs, January 1, 2015 – September 30, 3018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	19,226	304,439	2.7%	3.3%	-0.61 pp*
Hispanic	Non-Hispanic White	11,260	304,439	2.9%	3.3%	-0.42 pp*
Dually Eligible	Non-dually Eligible	43,670	303,156	4.6%	3.0%	1.53 pp*

*Note:* See the first page of this appendix for data sources and more information.

**C. Baseline Means and Differences in Baseline Outcomes, All Eligible Medicare FFS Episodes Nationwide**

**Exhibit H.13: Total Allowed Payments Through the 90-day PDP, Medical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	890,874	6,888,628	\$26,180	\$24,392	\$1,788*
Hispanic	Non-Hispanic White	463,843	6,888,628	\$24,755	\$24,392	\$363*
Dually Eligible	Non-dually Eligible	2,354,605	6,189,147	\$26,250	\$23,957	\$2,293*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.14: Total Allowed Payments Through the 90-day PDP, Surgical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	279,263	4,298,808	\$32,754	\$31,075	\$1,679*
Hispanic	Non-Hispanic White	192,716	4,298,808	\$32,192	\$31,075	\$1,117*
Dually Eligible	Non-dually Eligible	681,426	4,260,474	\$34,576	\$30,623	\$3,953*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.15: Readmission Rate Through the 90-day PDP, Medical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	879,682	6,833,983	34.1%	30.1%	4.04 pp*
Hispanic	Non-Hispanic White	458,154	6,833,983	31.4%	30.1%	1.32 pp*
Dually Eligible	Non-dually Eligible	2,318,683	6,150,590	33.6%	29.4%	4.27 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.16: Readmission Rate Through the 90-day PDP, Surgical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	278,854	4,295,535	16.8%	14.6%	2.21 pp*
Hispanic	Non-Hispanic White	192,476	4,295,535	15.6%	14.6%	0.92 pp*
Dually Eligible	Non-dually Eligible	679,815	4,258,016	18.9%	14.1%	4.85 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.17: Mortality Rate During the Anchor Stay and 90-day PDP, Medical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	900,338	7,058,512	14.5%	17.0%	-2.57 pp*
Hispanic	Non-Hispanic White	471,135	7,058,512	14.6%	17.0%	-2.44 pp*
Dually Eligible	Non-dually Eligible	2,376,817	6,362,514	15.6%	17.0%	-1.41 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.18: Mortality Rate During the Anchor Stay and 90-day PDP, Surgical Episodes, All Eligible Medicare FFS Episodes Nationwide, January 1, 2015 – September 30, 2018**

Subpopulation 1	Subpopulation 2	Number of Episodes, Subpopulation 1	Number of Episodes, Subpopulation 2	Subpopulation 1 Mean	Subpopulation 2 Mean	Baseline Difference
Black or African American	Non-Hispanic White	280,595	4,317,253	3.3%	3.8%	-0.46 pp*
Hispanic	Non-Hispanic White	193,607	4,317,253	3.3%	3.8%	-0.45 pp*
Dually Eligible	Non-dually Eligible	682,242	4,281,137	4.7%	3.5%	1.20 pp*

*Note:* See the first page of this appendix for data sources and more information.

**D. Differences in Baseline Outcomes by Sample**

**Exhibit H.19: Baseline Differences for Total Allowed Payments Through the 90-day PDP, Medical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	\$1,426*	\$1,342*	\$1,788*
Hispanic	Non-Hispanic White	\$103	\$88	\$363*
Dually Eligible	Non-dually Eligible	\$2,475*	\$2,388*	\$2,293*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.20: Baseline Differences for Total Allowed Payments Through the 90-day PDP, Surgical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	\$1,359*	\$2,253*	\$1,679*
Hispanic	Non-Hispanic White	-\$487*	\$2,687*	\$1,117*
Dually Eligible	Non-dually Eligible	\$5,404*	\$5,266*	\$3,953*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.21: Baseline Differences for Readmission Rate Through the 90-day PDP, Medical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	4.45 pp*	4.04 pp*	4.04 pp*
Hispanic	Non-Hispanic White	0.93 pp*	1.35 pp*	1.32 pp*
Dually Eligible	Non-dually Eligible	4.23 pp*	4.43 pp*	4.27 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.22: Baseline Differences for Readmission Rate Through the 90-day PDP, Surgical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	1.46 pp*	2.47 pp*	2.21 pp*
Hispanic	Non-Hispanic White	-0.13 pp	2.04 pp*	0.92 pp*
Dually Eligible	Non-dually Eligible	5.27 pp*	5.38 pp*	4.85 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.23: Baseline Differences for Mortality Rate During the Anchor Stay and 90-day PDP, Medical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	-2.87 pp*	-2.28 pp*	-2.57 pp*
Hispanic	Non-Hispanic White	-2.31 pp*	-3.03 pp*	-2.44 pp*
Dually Eligible	Non-dually Eligible	-1.32 pp*	-1.68 pp*	-1.41 pp*

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit H.24: Baseline Differences for Mortality Rate During the Anchor Stay and 90-day PDP, Surgical Episodes, Hospitals and PGPs, January 1, 2015 – September 30, 2018, for BPCI Advanced, Comparison Group, and All Eligible Medicare FFS Episodes Nationwide**

Subpopulation	Reference Population	Baseline Difference		
		BPCI Advanced	Comparison Group	All Eligible Medicare FFS Episodes Nationwide
Black or African American	Non-Hispanic White	-0.81 pp*	-0.61 pp*	-0.46 pp*
Hispanic	Non-Hispanic White	-0.82 pp*	-0.42 pp*	-0.45 pp*
Dually Eligible	Non-dually Eligible	1.40 pp*	1.53 pp*	1.20 pp*

*Note:* See the first page of this appendix for data sources and more information.

## Appendix I: Sample and Patient Characteristics

The following supplemental tables display additional characteristics of the evaluation sample. The sample count tables present the number of BPCI Advanced episode initiators included in the evaluation sample after comparison group construction and the associated intervention episode counts. The counts of BPCI Advanced intervention episodes are based on the sample used to evaluate the impact of the model on total allowed standardized payments. Because episode initiators can participate in multiple CESLGs, the sum of the number of episode initiators in each category may not equal the overall total count of episode initiators. We also present the shares of episodes where the beneficiary had a confirmed COVID-19 diagnosis during either the anchor hospitalization or procedure or the 90-day PDP for BPCI Advanced episodes and comparison group episodes.

The patient mix tables and the beneficiary race and ethnicity tables present the results by episode type for BPCI Advanced episodes and comparison group episodes. The tables present the mean values in the baseline period and in Model Year 4 and are not risk adjusted. The relative change represents the difference in the mean of the characteristic for BPCI Advanced episodes in Model Year 4 compared to the baseline period, relative to the change for the comparison group. The N counts reported represent the Model Year 4 sample population before removing any missing patient characteristics for a given episode. Prior institutional PAC setting and prior home health indicate the share of the sample with recent prior use of PAC services. The HCC count is the average number of HCC indicators per patient in the sample, and the HCC score is the average score (or index). Prior institutional PAC setting, prior home health, HCC count, and HCC score are based on the six months prior to the anchor hospitalization or procedure. The race and ethnicity data come from the RTI race codes from the MBSF. Results are also presented separately for hospitals and PGPs. An asterisk denotes statistically significant differences at the 10% level.

All results are based on the CMS BPCI Advanced Database, utilizing data from Model Year 4, and the BPCI Advanced evaluation team's analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015 and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021 and ending on or before December 31, 2021 (intervention period) for BPCI Advanced episode initiators and matched comparison providers.

See **Appendix C** for additional information on the methods used to determine the sample, the patient mix measures evaluated, and data sources. Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**A. Sample Counts**

**Exhibit I.1: Count of Model Year 4 BPCI Advanced Hospital Episode Initiators and Episodes Included in the BPCI Advanced Evaluation Sample, by CESLG, January 1, 2021 – December 31, 2021**

CESLG Type	CESLG	BPCI Advanced Hospitals	BPCI Advanced Intervention Episodes
Medical	Cardiac Care	365	55,990
	Gastrointestinal Care	220	15,711
	Medical & Critical Care	493	192,679
	Neurological Care	272	17,638
Surgical	Cardiac Procedures	80	11,720
	Gastrointestinal Surgery	69	2,352
	Orthopedics	159	24,596
	Spinal Procedures	122	9,444

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.2: Count of Model Year 4 BPCI Advanced PGP Episode Initiators and Episodes Included in the BPCI Advanced Evaluation Sample, by CESLG, January 1, 2021 – December 31, 2021**

CESLG Type	CESLG	BPCI Advanced PGPs	BPCI Advanced Intervention Episodes
Medical	Cardiac Care	79	16,878
	Gastrointestinal Care	55	5,961
	Medical & Critical Care	85	45,959
	Neurological Care	59	6,401
Surgical	Orthopedics	82	22,269
	Spinal Procedures	34	5,155

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.3: Share of Episodes with Confirmed COVID-19 Diagnosis, January 1, 2021 – December 31, 2021**

Clinical Episodes	BPCI Advanced Episodes	Comparison Group Episodes
All Clinical Episodes	20.5%	19.9%
Medical	24.0%	22.9%
Hospitals	24.7%	23.5%
PGPs	21.7%	20.8%
Surgical	4.0%	4.4%
Hospitals	4.4%	4.7%
PGPs	3.3%	3.4%

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.4: Share of Hospital Episodes with Confirmed COVID-19 Diagnosis, by CESLG, January 1, 2021 – December 31, 2021**

CESLG Type	CESLG	BPCI Advanced Episodes	Comparison Group Episodes
Medical	Cardiac Care	8.2%	8.1%
	Gastrointestinal Care	6.6%	7.2%
	Medical & Critical Care	32.5%	30.8%
	Neurological Care	7.5%	7.6%
Surgical	Cardiac Procedures	4.0%	4.4%
	Gastrointestinal Surgery	4.6%	5.0%
	Orthopedics	5.1%	5.4%
	Spinal Procedures	3.2%	2.8%

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.5: Share of PGP Episodes with Confirmed COVID-19 Diagnosis, by CESLG, January 1, 2021 – December 31, 2021**

CESLG Type	CESLG	BPCI Advanced Episodes	Comparison Group Episodes
Medical	Cardiac Care	7.3%	7.5%
	Gastrointestinal Care	6.7%	6.1%
	Medical & Critical Care	30.8%	30.4%
	Neurological Care	7.6%	7.2%
Surgical	Orthopedics	3.5%	3.7%
	Spinal Procedures	2.5%	2.7%

*Note:* See the first page of this appendix for data sources and more information.



## B. Patient Characteristics

**Exhibit I.6: Patient Mix, Hospital and PGP Episode Initiators, Baseline (January 1, 2015 – September 30, 2018) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Patient Characteristics	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
Medical (N=352,858)	Prior Institutional PAC Use	32.2%	28.8%	31.8%	28.8%	-0.34 pp
	Prior Home Health	27.1%	25.0%	24.8%	23.5%	-0.73 pp *
	Age: 80+ Years	43.9%	42.3%	43.3%	41.8%	-0.19 pp
	Male	43.8%	45.3%	43.8%	45.4%	-0.03 pp
	Disabled, No ESRD	27.0%	24.4%	27.8%	24.6%	0.69 pp *
	Dual Eligibility	26.9%	24.5%	26.8%	24.0%	0.45 pp
	HCC Count	3.0	2.9	2.9	2.9	-0.02
	HCC Score	1.9	1.9	1.9	1.9	-0.01
Surgical (N=75,450)	Prior Institutional PAC Use	13.2%	10.6%	13.1%	11.2%	-0.78 pp *
	Prior Home Health	11.6%	10.8%	10.1%	10.5%	-1.28 pp *
	Age: 80+ Years	26.1%	27.5%	25.4%	27.4%	-0.71 pp
	Male	41.3%	42.0%	42.1%	42.6%	0.23 pp
	Disabled, No ESRD	18.6%	15.0%	19.9%	16.4%	-0.06 pp
	Dual Eligibility	11.9%	9.7%	12.5%	10.7%	-0.36 pp
	HCC Count	1.5	1.6	1.5	1.7	-0.05 *
	HCC Score	1.0	1.1	1.0	1.1	-0.02 *

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.7: Patient Mix, Hospital Episode Initiators, Baseline (January 1, 2015 – September 30, 2018) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Patient Characteristics	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
Medical (N=287,233)	Institutional PAC Use	32.7%	29.3%	32.2%	29.1%	-0.32 pp
	Home Health	27.7%	25.6%	25.2%	23.7%	-0.62 pp *
	Age: 80+ Years	44.0%	42.4%	43.4%	41.7%	0.08 pp
	Male	43.7%	45.4%	43.8%	45.4%	0.005 pp
	Disabled, No ESRD	26.9%	24.2%	27.7%	24.5%	0.42 pp *
	Dual Eligibility	27.0%	24.7%	27.0%	24.4%	0.33 pp
	HCC Count	3.0	3.0	3.0	3.0	-0.01 pp
	HCC Score	1.9	2.0	1.9	1.9	-0.01 pp
Surgical (N=49,000)	Institutional PAC Use	14.4%	12.1%	13.8%	12.2%	-0.72 pp *
	Home Health	12.9%	12.2%	10.9%	11.4%	-1.11 pp *
	Age: 80+ Years	27.6%	29.2%	26.9%	28.9%	-0.38 pp
	Male	43.6%	44.3%	43.7%	44.3%	0.11 pp
	Disabled, No ESRD	20.3%	16.7%	20.4%	17.0%	-0.12 pp
	Dual Eligibility	13.5%	11.5%	13.5%	11.6%	-0.13 pp
	HCC Count	1.7	1.8	1.6	1.8	-0.02 pp
	HCC Score	1.1	1.2	1.1	1.2	-0.01 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.8: Patient Mix, PGP Episode Initiators, Baseline (April 1, 2013 – October 31, 2017) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Patient Characteristics	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
Medical (N=76,446)	Institutional PAC Use	29.5%	26.6%	30.2%	27.2%	0.12 pp
	Home Health	24.7%	22.7%	23.4%	22.2%	-0.87 pp
	Age: 80+ Years	43.3%	41.5%	42.1%	41.6%	-1.24 pp
	Male	44.4%	45.5%	43.8%	44.8%	0.08 pp
	Disabled, No ESRD	27.1%	24.9%	28.5%	24.9%	1.47 pp *
	Dual Eligibility	26.0%	23.0%	25.4%	21.9%	0.61 pp
	HCC Count	2.8	2.8	2.9	2.9	-0.02
	HCC Score	1.8	1.8	1.8	1.9	-0.01
Surgical (N=27,916)	Institutional PAC Use	11.0%	7.8%	11.1%	8.5%	-0.61 pp
	Home Health	9.6%	8.4%	8.1%	8.6%	-1.68 pp *
	Age: 80+ Years	23.6%	24.2%	21.1%	23.3%	-1.50 pp *
	Male	37.1%	37.6%	38.0%	37.8%	0.71 pp
	Disabled, No ESRD	15.3%	11.9%	17.7%	14.4%	-0.08 pp
	Dual Eligibility	9.0%	6.4%	9.9%	8.1%	-0.87 pp
	HCC Count	1.2	1.3	1.3	1.4	-0.08 *
	HCC Score	0.9	0.9	0.9	1.0	-0.04 *

*Note:* See the first page of this appendix for data sources and more information.

**C. Beneficiary Race and Ethnicity**

**Exhibit I.9: Beneficiary Race and Ethnicity, Hospital and PGP Episode Initiators, Baseline (January 1, 2015 – September 30, 2018) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Beneficiary Race and Ethnicity Categories	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
Medical (N=352,858)	Asian/Pacific Islander	1.8%	2.0%	2.0%	2.2%	-0.11 pp
	Black or African American	11.3%	10.2%	10.0%	8.8%	0.09 pp
	Hispanic	6.3%	5.9%	4.8%	5.1%	-0.76 pp *
	American Indian/Alaska Native	0.5%	0.4%	0.5%	0.5%	0.004 pp
	Other	0.6%	0.7%	0.6%	0.7%	0.03 pp
	Non-Hispanic White	79.0%	79.8%	81.6%	81.5%	0.85 pp *
Surgical (N=75,450)	Asian/Pacific Islander	1.4%	1.7%	1.3%	1.5%	0.06 pp
	Black or African American	5.7%	4.4%	5.6%	4.7%	-0.38 pp *
	Hispanic	3.8%	3.8%	3.3%	3.4%	-0.17 pp
	American Indian/Alaska Native	0.5%	0.5%	0.3%	0.3%	0.02 pp
	Other	0.6%	0.7%	0.6%	0.6%	0.07 pp
	Non-Hispanic White	86.7%	86.9%	87.6%	87.5%	0.38 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.10: Beneficiary Race and Ethnicity, Hospital Episode Initiators, Baseline (April 1, 2013 – October 31, 2017) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Beneficiary Race and Ethnicity Categories	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
Medical (N=287,233)	Asian/Pacific Islander	1.8%	2.0%	2.1%	2.4%	-0.09 pp
	Black or African American	11.8%	10.5%	10.3%	9.3%	-0.34 pp
	Hispanic	6.4%	6.2%	5.0%	5.3%	-0.51 pp *
	American Indian/Alaska Native	0.4%	0.4%	0.4%	0.4%	0.02 pp
	Other	0.6%	0.7%	0.6%	0.7%	0.05 pp *
	Non-Hispanic White	78.4%	79.1%	81.0%	80.7%	0.98 pp *
Surgical (N=49,000)	Asian/Pacific Islander	1.7%	2.0%	1.6%	1.8%	0.17 pp
	Black or African American	5.9%	4.6%	6.0%	5.0%	-0.28 pp
	Hispanic	4.3%	4.3%	4.0%	4.0%	0.02 pp
	American Indian/Alaska Native	0.6%	0.6%	0.3%	0.3%	-0.01 pp
	Other	0.6%	0.8%	0.7%	0.7%	0.14 pp *
	Non-Hispanic White	85.8%	85.8%	86.2%	86.2%	-0.003 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit I.11: Beneficiary Race and Ethnicity, PGP Episode Initiators, Baseline (April 1, 2013 – October 31, 2017) and Intervention (January 1, 2021 – December 31, 2021)**

Clinical Episodes	Beneficiary Race and Ethnicity Categories	BPCI Advanced		Comparison Group		Relative Change
		Baseline Mean	MY4 Mean	Baseline Mean	MY4 Mean	
<b>Medical (N=76,446)</b>	Asian/Pacific Islander	1.8%	1.7%	1.2%	1.4%	-0.33 pp *
	Black or African American	8.7%	8.6%	8.5%	6.8%	1.62 pp *
	Hispanic	6.1%	4.8%	3.8%	4.2%	-1.71 pp *
	American Indian/Alaska Native	0.5%	0.5%	0.7%	0.7%	0.003 pp
	Other	0.6%	0.6%	0.5%	0.5%	-0.04 pp
	Non-Hispanic White	81.8%	82.8%	84.8%	85.4%	0.53 pp
<b>Surgical (N=27,916)</b>	Asian/Pacific Islander	1.0%	1.1%	0.8%	0.9%	-0.03 pp
	Black or African American	5.3%	4.0%	4.7%	4.1%	-0.65 pp *
	Hispanic	3.0%	2.9%	1.8%	2.1%	-0.45 pp
	American Indian/Alaska Native	0.4%	0.3%	0.3%	0.2%	0.03 pp
	Other	0.6%	0.5%	0.5%	0.4%	0.02 pp
	Non-Hispanic White	88.5%	89.0%	90.7%	90.2%	0.98 pp *

*Note:* See the first page of this appendix for data sources and more information.

## Appendix J: Tables of Impact Estimate Results

The following tables display the risk-adjusted DiD results for all claims-based payment, utilization, and quality measures assessed in this report. Section D presents the DiD results by beneficiary subpopulation, including the estimated difference in impacts. The race and ethnicity data come from the RTI race codes from the MBSF. Medicare payments were standardized to remove the effects of geographic differences in wages, extra amounts to account for teaching programs, and other policy factors. Total allowed payments are Medicare Parts A and B payments that include beneficiary cost sharing, while total paid payments exclude beneficiary cost sharing. The “DiD as a Percent” refers to the DiD estimate as a percentage of the BPCI Advanced baseline mean. We only calculate the proportion of episodes first discharged to institutional PAC setting and number of days in SNF for inpatient clinical episodes. Blank cells indicate there was not a sufficient sample size to construct comparison groups in any clinical episodes within the CESLG. For clinical episodes for which outcomes were rare, we excluded the clinical episode from the corresponding CESLG, pooled grouping, and subpopulation analyses of that outcome. For this report, we excluded outpatient back and neck and major joint replacement of the upper extremity from analyses on mortality outcomes. In addition, for all analyses on SNF days and use of institutional PAC, we only included inpatient and multi-setting clinical episodes.

In Exhibit J.22, we report the impact on mortality during the anchor stay and post-discharge period for the *spinal procedures* CESLG for hospitals. However, we caution its interpretation because (1) the incidence of this outcome is rare, and this low sample size reduces the reliability of the risk-adjusted results; (2) from 2016 to 2018, there was an error in the MS-DRG grouper logic for spinal fusion, the only clinical episode included in the CESLG, that introduced the potential for unmeasured differences in patient mix between BPCI Advanced and comparison patients; and (3) the results were not robust to our sensitivity analysis excluding COVID-19 episodes (see **Appendix L**). We do not have results from previous model years (due to low volume), which could have provided additional context for this finding. We will continue to monitor mortality outcomes for *spinal procedures* hospital episodes in future model years if there is sufficient volume for analysis.

All Model Year 4 results (sections A-D) are based on the BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015, and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (Model Year 4) for BPCI Advanced episode initiators and matched comparison providers. Model Years 1 and 2 and Model Year 3 results (section E) are based on analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after April 1, 2013 and ending on or before December 31, 2017 (baseline period) and those with anchor stays or procedures beginning on or after October 1, 2018 and ending on or before December 31, 2019 (Model Years 1 and 2), or beginning on or after January 1, 2020 and ending on or before December 31, 2020 (Model Year 3).

Please refer to **Appendix A** for the definitions of all acronyms and symbols used within the following appendix. Please refer to **Appendix C** for additional information on outcome definitions and other methods.

**A. Pooled Impact Estimates**

**Exhibit J.1: Impact of BPCI Advanced on Average Episode Payments, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$26,548	\$27,397	409,253	\$26,164	\$27,943	-\$930	-3.5%	<0.001	-\$1,098	-\$761	-\$1,131	-\$729
<b>Medical</b>	346,581	\$25,578	\$26,994	343,252	\$25,222	\$27,318	-\$680	-2.7%	<0.001	-\$847	-\$514	-\$879	-\$482
<b>Hospital</b>	282,018	\$25,705	\$27,121	295,835	\$25,432	\$27,518	-\$670	-2.6%	<0.001	-\$850	-\$489	-\$885	-\$455
<b>PGP</b>	75,199	\$25,029	\$26,411	75,022	\$24,265	\$26,395	-\$747	-3.0%	0.001	-\$1,129	-\$366	-\$1,202	-\$293
<b>Surgical</b>	74,091	\$31,005	\$29,584	66,001	\$30,527	\$31,046	-\$1,939	-6.3%	<0.001	-\$2,295	-\$1,583	-\$2,363	-\$1,515
<b>Hospital</b>	48,112	\$32,610	\$31,711	49,125	\$31,954	\$32,790	-\$1,736	-5.3%	<0.001	-\$2,196	-\$1,275	-\$2,285	-\$1,187
<b>PGP</b>	27,424	\$27,839	\$25,570	20,358	\$27,585	\$27,427	-\$2,112	-7.6%	<0.001	-\$2,688	-\$1,535	-\$2,800	-\$1,424

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.2: Impact of BPCI Advanced on Total Paid Payments Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$23,281	\$23,984	409,253	\$22,939	\$24,457	-\$816	-3.5%	<0.001	-\$976	-\$656	-\$1,007	-\$626
<b>Medical</b>	346,581	\$22,322	\$23,606	343,252	\$22,008	\$23,861	-\$570	-2.6%	<0.001	-\$721	-\$418	-\$751	-\$389
<b>Hospital</b>	282,018	\$22,432	\$23,727	295,835	\$22,192	\$24,036	-\$550	-2.5%	<0.001	-\$715	-\$385	-\$746	-\$353
<b>PGP</b>	75,199	\$21,854	\$23,065	75,022	\$21,174	\$23,060	-\$674	-3.1%	0.001	-\$1,020	-\$328	-\$1,087	-\$261
<b>Surgical</b>	74,091	\$27,691	\$26,060	66,001	\$27,240	\$27,417	-\$1,810	-6.5%	<0.001	-\$2,163	-\$1,456	-\$2,231	-\$1,388
<b>Hospital</b>	48,112	\$29,118	\$28,085	49,125	\$28,514	\$29,053	-\$1,571	-5.4%	<0.001	-\$2,020	-\$1,122	-\$2,106	-\$1,035
<b>PGP</b>	27,424	\$24,894	\$22,261	20,358	\$24,628	\$24,003	-\$2,009	-8.1%	<0.001	-\$2,578	-\$1,439	-\$2,688	-\$1,329

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.3: Impact of BPCI Advanced on SNF Payments Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$4,876	\$4,189	409,253	\$4,706	\$4,499	-\$481	-9.9%	<0.001	-\$572	-\$389	-\$590	-\$372
<b>Medical</b>	346,581	\$4,810	\$4,373	343,252	\$4,618	\$4,612	-\$431 ‡	-9.0%	<0.001	-\$519	-\$342	-\$536	-\$325
<b>Hospital</b>	282,018	\$4,833	\$4,378	295,835	\$4,657	\$4,636	-\$433	-9.0%	<0.001	-\$529	-\$337	-\$548	-\$319
<b>PGP</b>	75,199	\$4,691	\$4,293	75,022	\$4,425	\$4,429	-\$402	-8.6%	0.001	-\$607	-\$197	-\$646	-\$158
<b>Surgical</b>	74,091	\$5,136	\$3,430	66,001	\$5,120	\$4,038	-\$624	-12.1%	<0.001	-\$848	-\$399	-\$891	-\$356
<b>Hospital</b>	48,112	\$5,532	\$3,861	49,125	\$5,362	\$4,320	-\$630	-11.4%	<0.001	-\$908	-\$352	-\$961	-\$299
<b>PGP</b>	27,424	\$4,372	\$2,616	20,358	\$4,632	\$3,444	-\$568	-13.0%	0.013	-\$945	-\$192	-\$1,018	-\$119

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.4: Impact of BPCI Advanced on IRF Payments Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$1,014	\$1,137	409,253	\$1,028	\$1,409	-\$258	-25.4%	<0.001	-\$321	-\$195	-\$333	-\$183
<b>Medical</b>	346,581	\$873	\$1,072	343,252	\$912	\$1,261	-\$151	-17.2%	<0.001	-\$210	-\$92	-\$221	-\$80
<b>Hospital</b>	282,018	\$845	\$1,023	295,835	\$903	\$1,258	-\$177	-20.9%	<0.001	-\$241	-\$113	-\$254	-\$100
<b>PGP</b>	75,199	\$946	\$1,211	75,022	\$911	\$1,284	-\$108	-11.4%	0.169	-\$238	\$21	-\$263	\$46
<b>Surgical</b>	74,091	\$1,667	\$1,478	66,001	\$1,564	\$2,121	-\$745	-44.7%	<0.001	-\$918	-\$572	-\$951	-\$539
<b>Hospital</b>	48,112	\$1,916	\$1,880	49,125	\$1,760	\$2,442	-\$718	-37.5%	<0.001	-\$938	-\$499	-\$980	-\$457
<b>PGP</b>	27,424	\$1,177	\$772	20,358	\$1,112	\$1,430	-\$722	-61.4%	<0.001	-\$995	-\$450	-\$1,047	-\$398

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.5: Impact of BPCI Advanced on HH Payments Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$1,354	\$1,407	409,253	\$1,293	\$1,389	-\$43	-3.2%	0.006	-\$69	-\$17	-\$74	-\$12
<b>Medical</b>	346,581	\$1,271	\$1,408	343,252	\$1,228	\$1,374	-\$10	-0.8%	0.417	-\$29	\$10	-\$33	\$14
<b>Hospital</b>	282,018	\$1,280	\$1,420	295,835	\$1,237	\$1,383	-\$6	-0.5%	0.602	-\$26	\$14	-\$30	\$18
<b>PGP</b>	75,199	\$1,235	\$1,357	75,022	\$1,194	\$1,341	-\$26	-2.1%	0.372	-\$73	\$22	-\$82	\$31
<b>Surgical</b>	74,091	\$1,738	\$1,452	66,001	\$1,583	\$1,475	-\$178	-10.2%	0.002	-\$272	-\$84	-\$290	-\$66
<b>Hospital</b>	48,112	\$1,692	\$1,616	49,125	\$1,561	\$1,472	\$13	0.8%	0.787	-\$66	\$92	-\$81	\$107
<b>PGP</b>	27,424	\$1,905	\$1,261	20,358	\$1,684	\$1,523	-\$483	-25.4%	<0.001	-\$704	-\$262	-\$746	-\$220

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.6: Impact of BPCI Advanced on Readmissions Payments Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	420,672	\$3,634	\$4,062	409,253	\$3,614	\$3,986	\$56	1.5%	0.058	\$8	\$105	-\$2	\$114
<b>Medical</b>	346,581	\$4,057	\$4,585	343,252	\$4,041	\$4,491	\$79	1.9%	0.019	\$23	\$134	\$13	\$144
<b>Hospital</b>	282,018	\$4,085	\$4,627	295,835	\$4,082	\$4,538	\$86	2.1%	0.020	\$25	\$146	\$13	\$158
<b>PGP</b>	75,199	\$3,923	\$4,404	75,022	\$3,867	\$4,351	-\$4	-0.1%	0.965	-\$141	\$134	-\$168	\$160
<b>Surgical</b>	74,091	\$1,650	\$1,698	66,001	\$1,593	\$1,673	-\$32	-2.0%	0.432	-\$100	\$35	-\$113	\$48
<b>Hospital</b>	48,112	\$1,889	\$1,942	49,125	\$1,802	\$1,918	-\$63	-3.3%	0.241	-\$152	\$25	-\$169	\$42
<b>PGP</b>	27,424	\$1,149	\$1,193	20,358	\$1,115	\$1,181	-\$22	-1.9%	0.742	-\$132	\$88	-\$153	\$109

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.7: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	410,719	28.6%	22.7%	399,228	27.5%	23.0%	-1.36 pp	-4.8%	<0.001	-1.83 pp	-0.90 pp	-1.92 pp	-0.81 pp
<b>Medical</b>	346,581	26.2%	22.2%	343,252	25.2%	21.8%	-0.62 pp	-2.4%	0.003	-0.96 pp	-0.28 pp	-1.03 pp	-0.22 pp
<b>Hospital</b>	282,018	26.4%	22.4%	295,835	25.3%	21.9%	-0.56 pp	-2.1%	0.011	-0.93 pp	-0.20 pp	-1.00 pp	-0.13 pp
<b>PGP</b>	75,199	25.2%	21.1%	75,022	24.6%	21.4%	-0.87 pp	-3.5%	0.078	-1.69 pp	-0.06 pp	-1.84 pp	0.10 pp
<b>Surgical</b>	64,138	41.5%	26.7%	55,976	39.4%	29.4%	-4.81 pp	-11.6%	<0.001	-6.33 pp	-3.29 pp	-6.62 pp	-3.00 pp
<b>Hospital</b>	39,959	44.1%	31.3%	40,668	41.6%	32.6%	-3.73 pp	-8.4%	0.004	-5.88 pp	-1.57 pp	-6.29 pp	-1.16 pp
<b>PGP</b>	25,554	37.3%	19.2%	18,603	35.9%	23.3%	-5.47 pp	-14.7%	<0.001	-7.75 pp	-3.20 pp	-8.18 pp	-2.76 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.8: Impact of BPCI Advanced on Days in SNF Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	101,088	33.5	29.2	94,118	33.7	32.1	-2.71 ‡	-8.1%	<0.001	-3.10	-2.32	-3.18	-2.24
<b>Medical</b>	85,251	34.0	30.1	80,207	34.2	32.9	-2.58 ‡	-7.6%	<0.001	-2.99	-2.17	-3.07	-2.09
<b>Hospital</b>	70,291	34.0	29.8	69,430	34.3	33.0	-2.87 ‡	-8.5%	<0.001	-3.31	-2.44	-3.39	-2.36
<b>PGP</b>	17,466	34.2	31.4	17,222	33.7	32.0	-1.15	-3.4%	0.052	-2.13	-0.18	-2.31	0.01
<b>Surgical</b>	15,837	31.0	25.2	13,911	31.3	28.8	-3.21	-10.3%	<0.001	-3.99	-2.42	-4.14	-2.27
<b>Hospital</b>	11,128	33.0	26.7	10,616	32.6	30.2	-3.86	-11.7%	<0.001	-4.78	-2.93	-4.96	-2.75
<b>PGP</b>	5,012	26.3	21.7	3,960	27.9	25.7	-2.37	-9.0%	0.010	-3.87	-0.87	-4.16	-0.58

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.9: Impact of BPCI Advanced on Readmission Rate Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	416,389	27.9%	27.4%	405,682	27.5%	26.9%	0.16 pp	0.6%	0.237	-0.06 pp	0.39 pp	-0.11 pp	0.43 pp
<b>Medical</b>	342,354	31.0%	30.7%	339,728	30.6%	30.1%	0.24 pp	0.8%	0.126	-0.02 pp	0.49 pp	-0.07 pp	0.54 pp
<b>Hospital</b>	278,495	31.2%	30.9%	292,727	30.9%	30.3%	0.26 pp	0.8%	0.108	-0.01 pp	0.53 pp	-0.06 pp	0.58 pp
<b>PGP</b>	74,379	29.7%	29.6%	74,347	29.6%	29.2%	0.25 pp	0.8%	0.489	-0.34 pp	0.83 pp	-0.45 pp	0.94 pp
<b>Surgical</b>	74,035	13.6%	12.6%	65,954	12.9%	12.0%	-0.09 pp	-0.7%	0.691	-0.48 pp	0.30 pp	-0.56 pp	0.37 pp
<b>Hospital</b>	48,065	15.3%	14.0%	49,081	14.4%	13.5%	-0.38 pp	-2.5%	0.190	-0.86 pp	0.10 pp	-0.95 pp	0.19 pp
<b>PGP</b>	27,415	10.0%	9.5%	20,355	9.5%	8.7%	0.28 pp	2.8%	0.468	-0.35 pp	0.92 pp	-0.48 pp	1.04 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.10: Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	416,389	26.6%	26.1%	405,682	26.2%	25.5%	0.13 pp	0.5%	0.356	-0.10 pp	0.35 pp	-0.14 pp	0.39 pp
<b>Medical</b>	342,354	29.7%	29.3%	339,728	29.3%	28.7%	0.22 pp	0.7%	0.152	-0.03 pp	0.48 pp	-0.08 pp	0.52 pp
<b>Hospital</b>	278,495	30.0%	29.6%	292,727	29.6%	29.0%	0.23 pp‡	0.8%	0.155	-0.04 pp	0.51 pp	-0.09 pp	0.56 pp
<b>PGP</b>	74,379	28.4%	28.3%	74,347	28.3%	27.8%	0.29 pp	1.0%	0.408	-0.29 pp	0.86 pp	-0.40 pp	0.97 pp
<b>Surgical</b>	74,035	12.3%	11.1%	65,954	11.7%	10.7%	-0.24 pp	-1.9%	0.239	-0.57 pp	0.09 pp	-0.63 pp	0.16 pp
<b>Hospital</b>	48,065	13.9%	12.5%	49,081	13.1%	12.1%	-0.45 pp	-3.2%	0.080	-0.87 pp	-0.03 pp	-0.95 pp	0.05 pp
<b>PGP</b>	27,415	9.0%	8.3%	20,355	8.5%	7.7%	0.03 pp	0.3%	0.931	-0.46 pp	0.51 pp	-0.56 pp	0.61 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.11: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	431,016	15.4%	16.0%	419,772	15.1%	15.9%	-0.20 pp	-1.3%	0.167	-0.43 pp	0.04 pp	-0.47 pp	0.08 pp
<b>Medical</b>	362,856	17.7%	18.4%	359,186	17.3%	18.3%	-0.21 pp	-1.2%	0.198	-0.49 pp	0.06 pp	-0.54 pp	0.11 pp
<b>Hospital</b>	295,804	17.8%	18.5%	310,120	17.5%	18.5%	-0.15 pp	-0.9%	0.374	-0.43 pp	0.13 pp	-0.49 pp	0.18 pp
<b>PGP</b>	78,125	17.2%	17.6%	77,871	16.3%	17.5%	-0.86 pp	-5.0%	0.037	-1.54 pp	-0.18 pp	-1.67 pp	-0.05 pp
<b>Surgical</b>	68,160	3.7%	3.6%	60,586	3.6%	3.7%	-0.09 pp	-2.4%	0.415	-0.27 pp	0.09 pp	-0.30 pp	0.12 pp
<b>Hospital</b>	45,165	4.2%	4.1%	46,378	4.1%	4.2%	-0.18 pp	-4.4%	0.189	-0.41 pp	0.05 pp	-0.45 pp	0.09 pp
<b>PGP</b>	24,364	2.4%	2.5%	17,497	2.5%	2.5%	0.15 pp	6.2%	0.312	-0.09 pp	0.39 pp	-0.14 pp	0.43 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.12: Impact of BPCI Advanced on Mortality During the 90-Day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
<b>Overall</b>	406,283	11.9%	12.8%	396,204	11.8%	12.6%	0.03 pp	0.2%	0.808	-0.16 pp	0.21 pp	-0.19 pp	0.25 pp
<b>Medical</b>	338,581	13.7%	14.7%	336,053	13.6%	14.5%	0.05 pp	0.4%	0.688	-0.16 pp	0.27 pp	-0.20 pp	0.31 pp
<b>Hospital</b>	275,322	13.7%	14.7%	289,449	13.6%	14.6%	0.00 pp	0.0%	0.981	-0.23 pp	0.23 pp	-0.27 pp	0.28 pp
<b>PGP</b>	73,655	13.6%	14.6%	73,641	13.3%	14.4%	-0.08 pp	-0.6%	0.797	-0.56 pp	0.41 pp	-0.66 pp	0.50 pp
<b>Surgical</b>	67,702	3.0%	3.1%	60,151	3.0%	3.1%	-0.07 pp	-2.4%	0.483	-0.24 pp	0.09 pp	-0.27 pp	0.13 pp
<b>Hospital</b>	44,786	3.4%	3.4%	45,997	3.3%	3.5%	-0.15 pp	-4.6%	0.222	-0.36 pp	0.05 pp	-0.40 pp	0.09 pp
<b>PGP</b>	24,279	2.1%	2.2%	17,431	2.2%	2.2%	0.14 pp	7.0%	0.315	-0.09 pp	0.38 pp	-0.14 pp	0.42 pp

*Note:* See the first page of this appendix for data sources and more information.

**B. Hospital Individual CESLG Impact Estimates**

**Exhibit J.13: Impact of BPCI Advanced on Average Episode Payments, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	55,990	\$24,706	\$25,051	59,252	\$24,287	\$25,214	-\$581	-2.4%	<0.001	-\$841	-\$322	-\$891	-\$272
	GI Care	15,711	\$20,905	\$21,908	16,438	\$20,827	\$22,347	-\$517	-2.5%	0.051	-\$952	-\$82	-\$1,036	\$2
	Medical & Critical Care	192,679	\$25,983	\$27,837	201,665	\$25,739	\$28,260	-\$667	-2.6%	<0.001	-\$885	-\$449	-\$927	-\$407
	Neurological Care	17,638	\$30,159	\$31,213	18,480	\$30,073	\$32,028	-\$901	-3.0%	0.008	-\$1,463	-\$340	-\$1,571	-\$232
Surgical	Cardiac Procedures	11,720	\$28,132	\$28,699	12,300	\$27,364	\$29,068	-\$1,138	-4.0%	<0.001	-\$1,630	-\$645	-\$1,725	-\$550
	GI Surgery	2,352	\$36,494	\$36,887	2,253	\$36,503	\$36,843	\$53	0.1%	0.942	-\$1,159	\$1,266	-\$1,395	\$1,501
	Orthopedics	24,596	\$33,181	\$31,428	25,877	\$32,169	\$32,420	-\$2,005	-6.0%	<0.001	-\$2,634	-\$1,376	-\$2,755	-\$1,255
	Spinal Procedures	9,444	\$35,949	\$35,125	8,695	\$35,874	\$37,397	-\$2,346	-6.5%	0.003	-\$3,634	-\$1,059	-\$3,882	-\$811

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.14: Impact of BPCI Advanced on Total Paid Payments Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	55,990	\$21,564	\$21,770	59,252	\$21,193	\$21,890	-\$492	-2.3%	<0.001	-\$728	-\$256	-\$773	-\$210
	GI Care	15,711	\$17,973	\$18,888	16,438	\$17,905	\$19,190	-\$370	-2.1%	0.131	-\$774	\$33	-\$851	\$110
	Medical & Critical Care	192,679	\$22,673	\$24,398	201,665	\$22,463	\$24,735	-\$547	-2.4%	<0.001	-\$745	-\$349	-\$783	-\$311
	Neurological Care	17,638	\$26,560	\$27,653	18,480	\$26,441	\$28,270	-\$736	-2.8%	0.019	-\$1,251	-\$221	-\$1,350	-\$122
Surgical	Cardiac Procedures	11,720	\$24,831	\$25,090	12,300	\$24,155	\$25,444	-\$1,030	-4.1%	<0.001	-\$1,481	-\$580	-\$1,568	-\$493
	GI Surgery	2,352	\$32,942	\$33,398	2,253	\$32,920	\$33,350	\$25	0.1%	0.971	-\$1,119	\$1,169	-\$1,341	\$1,390
	Orthopedics	24,596	\$29,466	\$27,613	25,877	\$28,514	\$28,439	-\$1,777	-6.0%	<0.001	-\$2,392	-\$1,162	-\$2,510	-\$1,044
	Spinal Procedures	9,444	\$32,812	\$31,922	8,695	\$32,770	\$34,123	-\$2,243	-6.8%	0.003	-\$3,474	-\$1,013	-\$3,711	-\$776

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.15: Impact of BPCI Advanced on SNF Payments Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	55,990	\$3,844	\$3,140	59,252	\$3,657	\$3,387	-\$434	-11.3%	<0.001	-\$553	-\$315	-\$576	-\$293
	GI Care	15,711	\$3,010	\$2,450	16,438	\$2,968	\$2,838	-\$429	-14.3%	<0.001	-\$616	-\$242	-\$652	-\$206
	Medical & Critical Care	192,679	\$5,093	\$4,832	201,665	\$4,901	\$5,063	-\$422	-8.3%	<0.001	-\$539	-\$306	-\$561	-\$284
	Neurological Care	17,638	\$6,799	\$5,373	18,480	\$6,826	\$5,897	-\$497	-7.3%	0.008	-\$806	-\$188	-\$866	-\$129
Surgical	Cardiac Procedures	11,720	\$1,400	\$892	12,300	\$1,198	\$979	-\$288	-20.6%	0.002	-\$438	-\$138	-\$466	-\$109
	GI Surgery	2,352	\$3,892	\$2,787	2,253	\$3,824	\$3,195	-\$475 †	-12.2%	0.092	-\$939	-\$11	-\$1,029	\$79
	Orthopedics	24,596	\$8,858	\$6,182	25,877	\$8,635	\$6,983	-\$1,025	-11.6%	<0.001	-\$1,459	-\$590	-\$1,543	-\$506
	Spinal Procedures	9,444	\$2,256	\$1,606	8,695	\$2,185	\$1,724	-\$189	-8.4%	0.299	-\$489	\$111	-\$547	\$169

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.16: Impact of BPCI Advanced on IRF Payments Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	55,990	\$572	\$643	59,252	\$614	\$814	-\$128	-22.5%	0.007	-\$207	-\$50	-\$222	-\$35
	GI Care	15,711	\$405	\$523	16,438	\$360	\$502	-\$24	-5.9%	0.659	-\$113	\$65	-\$130	\$82
	Medical & Critical Care	192,679	\$594	\$808	201,665	\$666	\$1,045	-\$166	-27.9%	<0.001	-\$235	-\$97	-\$248	-\$84
	Neurological Care	17,638	\$4,878	\$5,084	18,480	\$4,938	\$5,714	-\$570	-11.7%	0.005	-\$900	-\$240	-\$964	-\$177
Surgical	Cardiac Procedures	11,720	\$520	\$491	12,300	\$561	\$771	-\$239 †	-46.0%	0.003	-\$369	-\$108	-\$395	-\$83
	GI Surgery	2,352	\$848	\$854	2,253	\$722	\$933	-\$204	-24.1%	0.216	-\$476	\$68	-\$529	\$121
	Orthopedics	24,596	\$2,492	\$2,467	25,877	\$2,153	\$3,102	-\$974	-39.1%	<0.001	-\$1,337	-\$611	-\$1,407	-\$541
	Spinal Procedures	9,444	\$2,466	\$2,377	8,695	\$2,404	\$3,035	-\$720	-29.2%	0.010	-\$1,176	-\$265	-\$1,263	-\$177

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.17: Impact of BPCI Advanced on HH Payments Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	55,990	\$1,299	\$1,425	59,252	\$1,251	\$1,395	-\$18	-1.4%	0.387	-\$52	\$16	-\$58	\$23
	GI Care	15,711	\$894	\$1,004	16,438	\$838	\$950	-\$3	-0.3%	0.913	-\$41	\$36	-\$48	\$43
	Medical & Critical Care	192,679	\$1,284	\$1,445	201,665	\$1,245	\$1,410	-\$4	-0.3%	0.766	-\$26	\$18	-\$30	\$22
	Neurological Care	17,638	\$1,519	\$1,570	18,480	\$1,467	\$1,511	\$6	0.4%	0.848	-\$45	\$57	-\$55	\$66
Surgical	Cardiac Procedures	11,720	\$723	\$704	12,300	\$648	\$682	-\$52	-7.2%	0.079	-\$101	-\$3	-\$110	\$6
	GI Surgery	2,352	\$1,451	\$1,556	2,253	\$1,367	\$1,385	\$87	6.0%	0.212	-\$28	\$201	-\$50	\$223
	Orthopedics	24,596	\$2,314	\$2,175	25,877	\$2,171	\$1,955	\$77	3.3%	0.345	-\$57	\$211	-\$83	\$237
	Spinal Procedures	9,444	\$1,280	\$1,235	8,695	\$1,149	\$1,212	-\$107	-8.4%	0.086	-\$210	-\$5	-\$230	\$15

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.18: Impact of BPCI Advanced on Readmissions Payments Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	55,990	\$5,013	\$5,397	59,252	\$4,982	\$5,262	\$104	2.1%	0.191	-\$27	\$235	-\$52	\$261
	GI Care	15,711	\$3,862	\$4,313	16,438	\$3,987	\$4,297	\$141	3.6%	0.392	-\$130	\$411	-\$182	\$463
	Medical & Critical Care	192,679	\$3,938	\$4,544	201,665	\$3,938	\$4,472	\$72	1.8%	0.102	\$0	\$144	-\$14	\$158
	Neurological Care	17,638	\$2,836	\$3,396	18,480	\$2,812	\$3,227	\$145	5.1%	0.186	-\$35	\$325	-\$70	\$360
Surgical	Cardiac Procedures	11,720	\$2,352	\$2,385	12,300	\$2,250	\$2,395	-\$112	-4.7%	0.328	-\$300	\$76	-\$336	\$113
	GI Surgery	2,352	\$3,297	\$3,581	2,253	\$3,161	\$3,166	\$279	8.5%	0.314	-\$178	\$735	-\$267	\$824
	Orthopedics	24,596	\$1,642	\$1,682	25,877	\$1,545	\$1,618	-\$33	-2.0%	0.602	-\$136	\$70	-\$156	\$90
	Spinal Procedures	9,444	\$1,647	\$1,666	8,695	\$1,588	\$1,813	-\$206	-12.5%	0.150	-\$441	\$29	-\$486	\$75

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.19: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	55,990	20.1%	15.6%	59,252	18.9%	15.3%	-0.77 pp	-3.9%	0.009	-1.26 pp	-0.29 pp	-1.36 pp	-0.19 pp
	GI Care	15,711	15.3%	12.4%	16,438	14.7%	12.1%	-0.37 pp	-2.4%	0.384	-1.08 pp	0.33 pp	-1.22 pp	0.47 pp
	Medical & Critical Care	192,679	27.6%	23.8%	201,665	26.6%	23.3%	-0.44 pp	-1.6%	0.083	-0.86 pp	-0.02 pp	-0.94 pp	0.06 pp
	Neurological Care	17,638	43.8%	37.3%	18,480	43.1%	37.8%	-1.25 pp	-2.8%	0.063	-2.35 pp	-0.14 pp	-2.56 pp	0.07 pp
Surgical	Cardiac Procedures	6,523	16.9%	10.4%	6,602	15.3%	11.3%	-2.38 pp ‡	-14.1%	0.005	-3.77 pp	-1.00 pp	-4.03 pp	-0.73 pp
	GI Surgery	2,352	26.1%	17.7%	2,253	25.7%	19.2%	-1.86 pp	-7.1%	0.146	-3.96 pp	0.24 pp	-4.37 pp	0.65 pp
	Orthopedics	24,596	56.0%	40.4%	25,877	52.7%	41.4%	-4.30 pp	-7.7%	0.034	-7.63 pp	-0.97 pp	-8.27 pp	-0.33 pp
	Spinal Procedures	6,488	33.0%	22.7%	5,936	32.4%	25.9%	-3.81 pp	-11.6%	0.006	-6.10 pp	-1.51 pp	-6.54 pp	-1.08 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.20: Impact of BPCI Advanced on Days in SNF Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	11,115	30.8	27.5	11,305	31.2	30.9	-2.97 ‡	-9.6%	<0.001	-3.62	-2.32	-3.75	-2.19
	GI Care	2,438	33.0	28.5	2,634	33.8	31.5	-2.21 ‡	-6.7%	0.004	-3.49	-0.94	-3.73	-0.70
	Medical & Critical Care	51,857	34.3	30.1	50,713	34.5	33.1	-2.77 ‡	-8.1%	<0.001	-3.26	-2.28	-3.36	-2.19
	Neurological Care	4,881	38.7	32.8	4,778	39.8	38.0	-4.22	-10.9%	<0.001	-5.27	-3.16	-5.48	-2.96
Surgical	Cardiac Procedures	613	27.5	22.5	642	27.2	26.2	-4.04	-14.7%	<0.001	-5.95	-2.13	-6.32	-1.77
	GI Surgery	396	28.8	27.0	370	30.0	28.8	-0.62	-2.2%	0.693	-3.23	1.99	-3.74	2.49
	Orthopedics	9,047	34.6	27.5	8,595	34.3	31.4	-4.20	-12.1%	<0.001	-5.29	-3.12	-5.50	-2.91
	Spinal Procedures	1,072	25.6	24.1	1,009	24.4	24.9	-2.01	-7.9%	0.056	-3.74	-0.28	-4.08	0.05

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.21: Impact of BPCI Advanced on Readmission Rate Through the 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	55,142	36.0%	34.4%	58,560	35.4%	33.8%	-0.03 pp ‡	-0.1%	0.927	-0.59 pp	0.53 pp	-0.70 pp	0.63 pp
	GI Care	15,506	29.5%	28.2%	16,239	29.7%	28.5%	-0.16 pp	-0.5%	0.779	-1.11 pp	0.79 pp	-1.29 pp	0.97 pp
	Medical & Critical Care	190,411	30.6%	30.7%	199,654	30.2%	29.9%	0.39 pp	1.3%	0.042	0.07 pp	0.70 pp	0.01 pp	0.76 pp
	Neurological Care	17,436	24.6%	24.8%	18,274	24.4%	24.0%	0.52 pp	2.1%	0.317	-0.34 pp	1.39 pp	-0.50 pp	1.55 pp
Surgical	Cardiac Procedures	11,690	18.2%	16.3%	12,279	17.4%	16.4%	-0.77 pp	-4.3%	0.168	-1.70 pp	0.15 pp	-1.87 pp	0.33 pp
	GI Surgery	2,349	25.8%	24.2%	2,247	24.9%	22.2%	1.13 pp	4.4%	0.425	-1.20 pp	3.46 pp	-1.64 pp	3.90 pp
	Orthopedics	24,584	13.8%	13.0%	25,863	12.8%	12.1%	-0.14 pp	-1.0%	0.729	-0.78 pp	0.51 pp	-0.90 pp	0.63 pp
	Spinal Procedures	9,442	13.0%	11.5%	8,692	12.2%	11.8%	-1.10 pp	-8.5%	0.064	-2.08 pp	-0.12 pp	-2.27 pp	0.06 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.22: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and 90-Day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	55,895	15.6%	14.9%	59,497	15.8%	15.2%	-0.13 pp	-0.8%	0.627	-0.55 pp	0.30 pp	-0.63 pp	0.38 pp
	GI Care	15,689	11.2%	10.9%	16,445	11.0%	11.0%	-0.23 pp	-2.0%	0.540	-0.84 pp	0.38 pp	-0.95 pp	0.50 pp
	Medical & Critical Care	205,868	18.9%	20.3%	214,941	18.5%	20.1%	-0.19 pp	-1.0%	0.329	-0.52 pp	0.13 pp	-0.58 pp	0.20 pp
	Neurological Care	18,352	18.1%	18.3%	19,237	17.7%	18.0%	-0.11 pp	-0.6%	0.808	-0.89 pp	0.66 pp	-1.04 pp	0.81 pp
Surgical	Cardiac Procedures	11,771	3.2%	3.2%	12,368	3.2%	3.5%	-0.26 pp	-8.0%	0.344	-0.70 pp	0.19 pp	-0.79 pp	0.27 pp
	GI Surgery	2,396	8.7%	7.2%	2,307	8.5%	7.9%	-0.85 pp ‡	-9.8%	0.283	-2.16 pp	0.45 pp	-2.40 pp	0.70 pp
	Orthopedics	24,497	4.9%	4.8%	25,754	4.9%	5.0%	-0.26 pp	-5.3%	0.180	-0.58 pp	0.06 pp	-0.65 pp	0.12 pp
	Spinal Procedures	6,501	1.3%	1.6%	5,949	1.4%	1.3%	0.44 pp	34.8%	0.020	0.13 pp	0.75 pp	0.07 pp	0.81 pp

*Note:* See the first page of this appendix for data sources and more information.



**C. PGP Individual CESLG Impact Estimates**

**Exhibit J.23: Impact of BPCI Advanced on Average Episode Payments, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	16,878	\$24,503	\$24,900	19,264	\$23,748	\$24,587	-\$442	-1.8%	0.133	-\$926	\$42	-\$1,020	\$136
	GI Care	5,961	\$20,068	\$21,504	5,817	\$19,901	\$21,146	\$191	1.0%	0.575	-\$372	\$755	-\$481	\$864
	Medical & Critical Care	45,959	\$25,028	\$26,886	44,064	\$24,147	\$26,998	-\$993	-4.0%	<0.001	-\$1,485	-\$501	-\$1,579	-\$406
	Neurological Care	6,401	\$31,227	\$32,421	5,877	\$30,884	\$33,134	-\$1,056	-3.4%	0.092	-\$2,086	-\$27	-\$2,286	\$173
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$26,830	\$24,518	15,937	\$26,493	\$26,210	-\$2,029	-7.6%	<0.001	-\$2,598	-\$1,461	-\$2,707	-\$1,351
	Spinal Procedures	5,155	\$32,379	\$30,590	4,421	\$32,620	\$32,784	-\$1,954	-6.0%	0.058	-\$3,648	-\$261	-\$3,979	\$70

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.24: Impact of BPCI Advanced on Total Paid Payments Through the 90-Day PDP, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	16,878	\$21,410	\$21,676	19,264	\$20,728	\$21,362	-\$368	-1.7%	0.170	-\$810	\$73	-\$895	\$158
	GI Care	5,961	\$17,233	\$18,482	5,817	\$17,070	\$18,159	\$160	0.9%	0.612	-\$360	\$679	-\$461	\$780
	Medical & Critical Care	45,959	\$21,842	\$23,487	44,064	\$21,065	\$23,623	-\$913	-4.2%	<0.001	-\$1,360	-\$466	-\$1,446	-\$380
	Neurological Care	6,401	\$27,585	\$28,820	5,877	\$27,227	\$29,405	-\$943	-3.4%	0.097	-\$1,879	-\$7	-\$2,061	\$174
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$23,874	\$21,133	15,937	\$23,513	\$22,684	-\$1,913	-8.0%	<0.001	-\$2,466	-\$1,359	-\$2,573	-\$1,252
	Spinal Procedures	5,155	\$29,480	\$27,597	4,421	\$29,765	\$29,755	-\$1,873	-6.4%	0.057	-\$3,490	-\$256	-\$3,806	\$60

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.25: Impact of BPCI Advanced on SNF Payments Through the 90-Day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	16,878	\$3,761	\$3,106	19,264	\$3,630	\$3,277	-\$301	-8.0%	0.013	-\$501	-\$102	-\$539	-\$64
	GI Care	5,961	\$2,749	\$2,531	5,817	\$2,646	\$2,370	\$58	2.1%	0.736	-\$226	\$342	-\$281	\$397
	Medical & Critical Care	45,959	\$4,967	\$4,826	44,064	\$4,596	\$4,955	-\$500	-10.1%	0.002	-\$762	-\$238	-\$813	-\$188
	Neurological Care	6,401	\$7,102	\$5,747	5,877	\$7,242	\$6,213	-\$326	-4.6%	0.360	-\$914	\$262	-\$1,028	\$376
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$4,997	\$2,968	15,937	\$5,277	\$3,891	-\$643	-12.9%	0.013	-\$1,066	-\$221	-\$1,147	-\$139
	Spinal Procedures	5,155	\$1,500	\$980	4,421	\$1,673	\$1,193	-\$41 ‡	-2.7%	0.819	-\$337	\$255	-\$394	\$313

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.26: Impact of BPCI Advanced on IRF Payments Through the 90-Day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

	CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	16,878	\$539	\$713	19,264	\$467	\$680	-\$41	-7.5%	0.632	-\$181	\$99	-\$208	\$126
	GI Care	5,961	\$412	\$554	5,817	\$323	\$510	-\$45	-10.8%	0.579	-\$177	\$88	-\$203	\$114
	Medical & Critical Care	45,959	\$539	\$811	44,064	\$535	\$916	-\$109	-20.3%	0.227	-\$259	\$40	-\$288	\$69
	Neurological Care	6,401	\$5,723	\$6,350	5,877	\$5,561	\$6,611	-\$424	-7.4%	0.255	-\$1,037	\$190	-\$1,156	\$308
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$1,051	\$737	15,937	\$930	\$1,244	-\$627 ‡	-59.7%	<0.001	-\$902	-\$352	-\$955	-\$299
	Spinal Procedures	5,155	\$1,720	\$966	4,421	\$1,964	\$2,201	-\$991	-57.6%	0.013	-\$1,642	-\$341	-\$1,769	-\$213

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.27: Impact of BPCI Advanced on HH Payments Through the 90-Day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	16,878	\$1,257	\$1,398	19,264	\$1,198	\$1,366	-\$28	-2.2%	0.474	-\$92	\$36	-\$104	\$48
	GI Care	5,961	\$858	\$948	5,817	\$816	\$904	\$2	0.2%	0.970	-\$79	\$83	-\$95	\$98
	Medical & Critical Care	45,959	\$1,226	\$1,375	44,064	\$1,193	\$1,368	-\$25	-2.1%	0.427	-\$77	\$27	-\$87	\$37
	Neurological Care	6,401	\$1,612	\$1,591	5,877	\$1,517	\$1,517	-\$21	-1.3%	0.751	-\$131	\$89	-\$152	\$110
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$2,084	\$1,330	15,937	\$1,868	\$1,660	-\$546	-26.2%	<0.001	-\$812	-\$280	-\$864	-\$228
	Spinal Procedures	5,155	\$1,060	\$921	4,421	\$851	\$902	-\$190	-17.9%	0.059	-\$354	-\$25	-\$386	\$7

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.28: Impact of BPCI Advanced on Readmissions Payments Through the 90-Day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

CESLG	BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean								
Medical	Cardiac Care	16,878	\$4,859	\$5,214	19,264	\$4,772	\$4,999	\$128	2.6%	0.361	-\$103	\$359	-\$148	\$404
	GI Care	5,961	\$3,602	\$3,979	5,817	\$3,658	\$3,910	\$126	3.5%	0.495	-\$179	\$431	-\$238	\$490
	Medical & Critical Care	45,959	\$3,768	\$4,287	44,064	\$3,707	\$4,319	-\$93	-2.5%	0.403	-\$277	\$91	-\$313	\$126
	Neurological Care	6,401	\$2,645	\$3,304	5,877	\$2,604	\$3,217	\$46	1.7%	0.794	-\$244	\$335	-\$300	\$392
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	\$1,109	\$1,131	15,937	\$1,062	\$1,099	-\$16	-1.5%	0.794	-\$120	\$87	-\$140	\$107
	Spinal Procedures	5,155	\$1,316	\$1,480	4,421	\$1,365	\$1,502	\$26	2.0%	0.897	-\$310	\$363	-\$376	\$429

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.29: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, CESLGs, PGPs, January 1, 2021–December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	16,878	19.4%	14.7%	19,264	19.1%	15.2%	-0.86 pp	-4.4%	0.121	-1.78 pp	0.05 pp	-1.96 pp	0.23 pp
	GI Care	5,961	13.6%	11.4%	5,817	13.2%	11.0%	-0.01 pp	-0.1%	0.986	-1.19 pp	1.17 pp	-1.42 pp	1.39 pp
	Medical & Critical Care	45,959	26.1%	22.3%	44,064	25.3%	22.7%	-1.17 pp	-4.5%	0.060	-2.19 pp	-0.15 pp	-2.38 pp	0.05 pp
	Neurological Care	6,401	46.1%	40.6%	5,876	46.5%	40.6%	0.32 pp	0.7%	0.796	-1.70 pp	2.33 pp	-2.09 pp	2.72 pp
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,269	38.7%	20.1%	15,937	37.2%	23.6%	-4.98 pp	-12.9%	<0.001	-7.40 pp	-2.57 pp	-7.86 pp	-2.10 pp
	Spinal Procedures	3,285	26.8%	13.0%	2,666	27.2%	20.5%	-7.06 pp	-26.3%	0.003	-10.99 pp	-3.12 pp	-11.74 pp	-2.37 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.30: Impact of BPCI Advanced on Days in SNF Through the 90-Day PDP, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	3,128	30.8	28.1	3,794	30.8	29.5	-1.31	-4.3%	0.137	-2.77	0.14	-3.05	0.42
	GI Care	888	33.5	30.0	795	32.2	28.8	-0.14	-0.4%	0.922	-2.44	2.17	-2.89	2.62
	Medical & Critical Care	11,673	34.4	32.1	11,058	33.6	32.4	-1.08	-3.1%	0.079	-2.09	-0.07	-2.29	0.13
	Neurological Care	1,777	39.9	34.4	1,575	41.0	36.8	-1.32	-3.3%	0.283	-3.35	0.71	-3.74	1.10
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	4,605	26.6	21.8	3,626	28.2	26.0	-2.59	-9.7%	0.008	-4.19	-0.98	-4.50	-0.67
	Spinal Procedures	407	22.5	20.6	334	24.1	21.4	.83	3.7%	0.563	-1.55	3.21	-2.02	3.68

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.31: Impact of BPCI Advanced on Readmission Rate Through the 90-Day PDP, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	16,705	34.6%	33.4%	19,093	34.1%	32.7%	0.11 pp	0.3%	0.877	-1.03 pp	1.25 pp	-1.25 pp	1.46 pp
	GI Care	5,880	27.0%	26.8%	5,762	27.3%	26.9%	0.22 pp	0.8%	0.816	-1.31 pp	1.75 pp	-1.61 pp	2.04 pp
	Medical & Critical Care	45,455	29.0%	29.1%	43,651	29.0%	28.8%	0.36 pp	1.2%	0.380	-0.31 pp	1.03 pp	-0.44 pp	1.16 pp
	Neurological Care	6,339	23.4%	24.1%	5,841	23.1%	23.8%	0.07 pp	0.3%	0.933	-1.34 pp	1.48 pp	-1.61 pp	1.75 pp
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	22,263	9.8%	9.4%	15,934	9.1%	8.5%	0.13 pp	1.3%	0.769	-0.59 pp	0.85 pp	-0.73 pp	0.98 pp
	Spinal Procedures	5,152	10.5%	10.4%	4,421	11.2%	9.9%	1.28 pp	12.2%	0.153	-0.19 pp	2.76 pp	-0.48 pp	3.04 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.32: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and 90-Day PDP, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG		BPCI Advanced			Comparison			DiD	DiD as a Percent	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Cardiac Care	16,929	16.3%	16.0%	19,349	16.4%	16.2%	-0.10 pp	-0.6%	0.865	-1.05 pp	0.85 pp	-1.23 pp	1.03 pp
	GI Care	5,914	10.2%	9.7%	5,835	9.9%	10.4%	-1.08 pp	-10.6%	0.065	-2.05 pp	-0.12 pp	-2.24 pp	0.07 pp
	Medical & Critical Care	48,704	18.2%	19.1%	46,495	16.7%	18.8%	-1.25 pp	-6.9%	0.017	-2.12 pp	-0.39 pp	-2.28 pp	-0.23 pp
	Neurological Care	6,578	18.1%	17.8%	6,192	19.0%	19.9%	-1.32 pp	-7.3%	0.130	-2.74 pp	0.11 pp	-3.02 pp	0.39 pp
Surgical	Cardiac Procedures													
	GI Surgery													
	Orthopedics	21,084	2.6%	2.8%	14,828	2.7%	2.7%	0.19 pp	7.1%	0.246	-0.08 pp	0.45 pp	-0.13 pp	0.50 pp
	Spinal Procedures	3,280	0.7%	0.7%	2,669	0.8%	1.1%	-0.31 pp	-43.7%	0.236	-0.73 pp	0.12 pp	-0.82 pp	0.20 pp

*Note:* See the first page of this appendix for data sources and more information.

**D. Impact Estimates and Differences in Impacts for Beneficiaries from Populations That Have Been Underserved**

**Exhibit J.33: Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,664	\$25,548	\$27,528	29,912	\$25,328	\$28,284	-\$976	<0.001	-\$1,395	-\$557	-\$1,476	-\$476
	Non-Hispanic White	277,445	\$25,617	\$26,918	280,513	\$25,184	\$27,172	-\$687	<0.001	-\$857	-\$517	-\$890	-\$485
Surgical	Black or African American	3,244	\$31,572	\$30,061	3,065	\$31,772	\$32,268	-\$2,008 ‡	<0.001	-\$2,946	-\$1,070	-\$3,126	-\$890
	Non-Hispanic White	64,497	\$31,013	\$29,592	57,807	\$30,476	\$30,959	-\$1,904	<0.001	-\$2,262	-\$1,546	-\$2,331	-\$1,478

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.34: Difference in Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$976	-\$687	-\$289	0.253	-\$704	\$127	-\$784	\$207
Surgical	-\$2,008 ‡	-\$1,904	-\$104 ‡	0.843	-\$967	\$759	-\$1,132	\$925

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.35: Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,664	\$4,835	\$4,612	29,912	\$4,737	\$5,223	-\$709	<0.001	-\$905	-\$512	-\$943	-\$475
	Non-Hispanic White	277,445	\$4,898	\$4,406	280,513	\$4,647	\$4,588	-\$433	<0.001	-\$526	-\$339	-\$544	-\$322
Surgical	Black or African American	3,244	\$5,338	\$3,819	3,065	\$5,628	\$4,688	-\$578	0.071	-\$1,106	-\$51	-\$1,207	\$50
	Non-Hispanic White	64,497	\$5,197	\$3,476	57,807	\$5,190	\$4,075	-\$605	<0.001	-\$837	-\$373	-\$882	-\$329

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.36: Difference in Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$709	-\$433	-\$276	0.022	-\$475	-\$78	-\$513	-\$40
Surgical	-\$578	-\$605	\$27	0.933	-\$503	\$556	-\$604	\$658

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.37: Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,664	\$855	\$1,049	29,912	\$928	\$1,295	-\$173	0.012	-\$287	-\$59	-\$308	-\$37
	Non-Hispanic White	277,445	\$874	\$1,075	280,513	\$917	\$1,269	-\$151	<0.001	-\$211	-\$90	-\$223	-\$78
Surgical	Black or African American	3,244	\$1,963	\$1,764	3,065	\$1,986	\$2,418	-\$631	0.003	-\$984	-\$277	-\$1,052	-\$210
	Non-Hispanic White	64,497	\$1,655	\$1,471	57,807	\$1,518	\$2,083	-\$749	<0.001	-\$926	-\$572	-\$960	-\$538

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.38: Difference in Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$173	-\$151	-\$22	0.728	-\$128	\$83	-\$148	\$104
Surgical	-\$631	-\$749	\$118	0.558	-\$214	\$451	-\$278	\$515

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.39: Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,664	\$1,316	\$1,514	29,912	\$1,248	\$1,423	\$24	0.326	-\$16	\$63	-\$23	\$71
	Non-Hispanic White	277,445	\$1,273	\$1,391	280,513	\$1,230	\$1,367	-\$19	0.115	-\$39	\$1	-\$43	\$5
Surgical	Black or African American	3,244	\$1,959	\$1,644	3,065	\$1,776	\$1,693	-\$232 ‡	0.005	-\$368	-\$95	-\$394	-\$69
	Non-Hispanic White	64,497	\$1,723	\$1,435	57,807	\$1,571	\$1,455	-\$173	0.003	-\$269	-\$76	-\$288	-\$58

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.40: Difference in Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	\$24	-\$19	\$43	0.070	\$4	\$82	-\$3	\$89
Surgical	-\$232 ‡	-\$173	-\$59 ‡	0.436	-\$184	\$66	-\$208	\$90

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.41: Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,664	\$4,117	\$4,861	29,912	\$4,045	\$4,778	\$10	0.933	-\$194	\$215	-\$233	\$254
	Non-Hispanic White	277,445	\$4,034	\$4,526	280,513	\$4,025	\$4,435	\$83	0.019	\$25	\$141	\$13	\$152
Surgical	Black or African American	3,244	\$1,631	\$1,848	3,065	\$1,594	\$1,647	\$164	0.444	-\$188	\$515	-\$256	\$583
	Non-Hispanic White	64,497	\$1,655	\$1,699	57,807	\$1,592	\$1,669	-\$34	0.427	-\$104	\$36	-\$117	\$50

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.42: Difference in Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	\$10	\$83	-\$72	0.571	-\$282	\$138	-\$322	\$178
Surgical	\$164	-\$34	\$197	0.349	-\$150	\$545	-\$216	\$611

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.43: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population	BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI	
	MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean							
Medical	Black or African American	34,664	25.3%	22.6%	29,912	24.7%	22.9%	-0.86 pp	0.043	-1.57 pp	-0.16 pp	-1.70 pp	-0.03 pp
	Non-Hispanic White	277,445	26.8%	22.5%	280,513	25.7%	22.1%	-0.68 pp	0.002	-1.04 pp	-0.31 pp	-1.11 pp	-0.24 pp
Surgical	Black or African American	2,854	45.4%	29.4%	2,646	44.1%	32.9%	-4.75 pp ‡	0.003	-7.34 pp	-2.15 pp	-7.84 pp	-1.65 pp
	Non-Hispanic White	55,863	41.7%	27.0%	49,043	39.4%	29.4%	-4.61 pp	<0.001	-6.15 pp	-3.08 pp	-6.44 pp	-2.78 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.44: Difference in Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.86 pp	-0.68 pp	-0.19 pp	0.661	-0.89 pp	0.52 pp	-1.03 pp	0.65 pp
Surgical	-4.75 pp ‡	-4.61 pp	-0.13 pp	0.925	-2.49 pp	2.22 pp	-2.94 pp	2.67 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.45: Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	8,792	35.0	30.1	7,187	35.8	34.7	-3.77	<0.001	-4.63	-2.92	-4.79	-2.75
	Non-Hispanic White	69,538	33.8	30.0	66,661	33.8	32.5	-2.47 ‡	<0.001	-2.89	-2.04	-2.98	-1.96
Surgical	Black or African American	610	31.4	27.4	604	33.7	31.9	-2.25	0.135	-4.73	0.22	-5.20	0.70
	Non-Hispanic White	14,196	31.1	25.2	12,407	31.3	28.6	-3.20	<0.001	-4.01	-2.40	-4.16	-2.25

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.46: Difference in Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-3.77	-2.47 ‡	-1.31	0.012	-2.16	-0.45	-2.32	-0.29
Surgical	-2.25	-3.20	0.95	0.511	-1.43	3.34	-1.89	3.80

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.47: Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,056	32.0%	31.4%	29,465	31.6%	31.4%	-0.50 pp	0.262	-1.24 pp	0.23 pp	-1.38 pp	0.37 pp
	Non-Hispanic White	274,394	30.9%	30.6%	277,863	30.5%	29.9%	0.28 pp	0.097	0.00 pp	0.55 pp	-0.05 pp	0.60 pp
Surgical	Black or African American	3,240	13.9%	13.2%	3,061	13.5%	12.9%	-0.20 pp	0.816	-1.58 pp	1.19 pp	-1.84 pp	1.45 pp
	Non-Hispanic White	64,454	13.6%	12.6%	57,772	12.9%	12.0%	-0.08 pp	0.757	-0.48 pp	0.33 pp	-0.56 pp	0.41 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.48: Difference in Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.50 pp	0.28 pp	-0.78 pp	0.096	-1.54 pp	-0.01 pp	-1.69 pp	0.14 pp
Surgical	-0.20 pp	-0.08 pp	-0.12 pp	0.889	-1.53 pp	1.29 pp	-1.80 pp	1.56 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.49: Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	34,056	30.9%	30.3%	29,465	30.6%	30.4%	-0.48 pp	0.280	-1.20 pp	0.25 pp	-1.34 pp	0.39 pp
	Non-Hispanic White	274,394	29.6%	29.2%	277,863	29.2%	28.5%	0.27 pp	0.101	0.00 pp	0.54 pp	-0.05 pp	0.6 pp
Surgical	Black or African American	3,240	12.9%	12.0%	3,061	12.6%	11.7%	0.02 pp	0.979	-1.31 pp	1.36 pp	-1.57 pp	1.61 pp
	Non-Hispanic White	64,454	12.3%	11.1%	57,772	11.6%	10.7%	-0.25 pp	0.241	-0.59 pp	0.10 pp	-0.66 pp	0.17 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.50: Difference in Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.48 pp	0.27 pp	-0.75 pp	0.101	-1.50 pp	0.00 pp	-1.64 pp	0.15 pp
Surgical	0.02 pp	-0.25 pp	0.27 pp	0.746	-1.09 pp	1.63 pp	-1.35 pp	1.89 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.51: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	35,858	16.1%	17.3%	30,945	16.4%	17.4%	0.13 pp	0.712	-0.46 pp	0.73 pp	-0.57 pp	0.84 pp
	Non-Hispanic White	290,736	18.0%	18.7%	293,669	17.6%	18.5%	-0.21 pp	0.233	-0.49 pp	0.08 pp	-0.55 pp	0.13 pp
Surgical	Black or African American	3,044	3.6%	3.6%	2,934	3.5%	3.7%	-0.24 pp	0.645	-1.08 pp	0.61 pp	-1.24 pp	0.77 pp
	Non-Hispanic White	59,199	3.7%	3.7%	52,910	3.7%	3.8%	-0.06 pp	0.618	-0.24 pp	0.13 pp	-0.28 pp	0.17 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.52: Difference in Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.13 pp	-0.21 pp	0.34 pp	0.336	-0.24 pp	0.92 pp	-0.35 pp	1.03 pp
Surgical	-0.24 pp	-0.06 pp	-0.18 pp	0.729	-1.03 pp	0.67 pp	-1.19 pp	0.83 pp

Note: See the first page of this appendix for data sources and more information.

**Exhibit J.53: Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Black or African American	33,579	12.3%	13.7%	29,016	12.8%	13.7%	0.42 pp	0.197	-0.12 pp	0.96 pp	-0.22 pp	1.06 pp
	Non-Hispanic White	271,576	14.0%	15.0%	275,092	13.9%	14.8%	0.04 pp	0.775	-0.19 pp	0.27 pp	-0.24 pp	0.32 pp
Surgical	Black or African American	3,031	2.9%	3.3%	2,902	2.8%	2.9%	0.24 pp	0.629	-0.59 pp	1.07 pp	-0.75 pp	1.23 pp
	Non-Hispanic White	58,791	3.1%	3.2%	52,535	3.1%	3.2%	-0.06 pp	0.597	-0.23 pp	0.12 pp	-0.27 pp	0.15 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.54: Difference in Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Black or African American Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.42 pp	0.04 pp	0.38 pp	0.249	-0.16 pp	0.93 pp	-0.27 pp	1.03 pp
Surgical	0.24 pp	-0.06 pp	0.30 pp	0.559	-0.54 pp	1.14 pp	-0.71 pp	1.31 pp

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.55: Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	\$24,485	\$26,533	17,319	\$24,310	\$26,710	-\$351	0.272	-\$878	\$175	-\$978	\$276
	Non-Hispanic White	277,445	\$25,523	\$26,825	280,513	\$25,097	\$27,089	-\$690	<0.001	-\$860	-\$519	-\$892	-\$487
Surgical	Hispanic	2,797	\$30,519	\$29,182	2,251	\$30,955	\$31,382	-\$1,764 ‡	0.001	-\$2,670	-\$858	-\$2,844	-\$685
	Non-Hispanic White	64,497	\$30,988	\$29,585	57,807	\$30,465	\$30,957	-\$1,895	<0.001	-\$2,250	-\$1,539	-\$2,319	-\$1,471

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.56: Difference in Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$351	-\$690	\$338	0.287	-\$184	\$861	-\$284	\$961
Surgical	-\$1,764 ‡	-\$1,895	\$131 ‡	0.808	-\$756	\$1,018	-\$926	\$1,188

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.57: Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	\$3,563	\$3,410	17,319	\$3,919	\$3,921	-\$156	0.308	-\$408	\$96	-\$456	\$144
	Non-Hispanic White	277,445	\$4,912	\$4,431	280,513	\$4,669	\$4,619	-\$432	<0.001	-\$525	-\$338	-\$543	-\$320
Surgical	Hispanic	2,797	\$4,512	\$2,702	2,251	\$4,510	\$3,516	-\$816	0.011	-\$1,344	-\$288	-\$1,445	-\$187
	Non-Hispanic White	64,497	\$5,247	\$3,532	57,807	\$5,238	\$4,127	-\$605	<0.001	-\$837	-\$373	-\$881	-\$329

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.58: Difference in Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$156	-\$432	\$275	0.072	\$24	\$527	-\$24	\$575
Surgical	-\$816	-\$605	-\$211	0.497	-\$722	\$300	-\$821	\$398

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.59: Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	\$1,023	\$1,208	17,319	\$900	\$1,248	-\$164	0.119	-\$337	\$9	-\$370	\$42
	Non-Hispanic White	277,445	\$869	\$1,066	280,513	\$914	\$1,265	-\$153	<0.001	-\$214	-\$92	-\$226	-\$80
Surgical	Hispanic	2,797	\$2,009	\$1,767	2,251	\$2,155	\$2,670	-\$756 ‡	0.001	-\$1,144	-\$368	-\$1,219	-\$293
	Non-Hispanic White	64,497	\$1,652	\$1,473	57,807	\$1,523	\$2,089	-\$745	<0.001	-\$921	-\$569	-\$955	-\$535

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.60: Difference in Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$164	-\$153	-\$11	0.915	-\$178	\$156	-\$209	\$188
Surgical	-\$756 ‡	-\$745	-\$11	0.962	-\$391	\$369	-\$464	\$442

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.61: Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	\$1,308	\$1,515	17,319	\$1,279	\$1,488	-\$3	0.927	-\$54	\$48	-\$64	\$58
	Non-Hispanic White	277,445	\$1,277	\$1,396	280,513	\$1,234	\$1,372	-\$19	0.117	-\$39	\$1	-\$43	\$5
Surgical	Hispanic	2,797	\$1,921	\$1,626	2,251	\$1,839	\$1,736	-\$192	0.070	-\$366	-\$18	-\$400	\$15
	Non-Hispanic White	64,497	\$1,716	\$1,431	57,807	\$1,568	\$1,454	-\$170	0.004	-\$267	-\$74	-\$285	-\$55

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.62: Difference in Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$3	-\$19	\$16	0.584	-\$33	\$66	-\$42	\$75
Surgical	-\$192	-\$170	-\$22	0.821	-\$181	\$137	-\$211	\$167

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.63: Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	\$3,942	\$4,627	17,319	\$3,882	\$4,420	\$147 ‡	0.260	-\$68	\$362	-\$109	\$403
	Non-Hispanic White	277,445	\$3,981	\$4,472	280,513	\$3,969	\$4,377	\$83	0.018	\$25	\$141	\$14	\$152
Surgical	Hispanic	2,797	\$1,488	\$1,616	2,251	\$1,538	\$1,544	\$121	0.549	-\$211	\$453	-\$275	\$517
	Non-Hispanic White	64,497	\$1,646	\$1,694	57,807	\$1,583	\$1,664	-\$34	0.429	-\$103	\$36	-\$117	\$50

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.64: Difference in Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	\$147 ‡	\$83	\$64 ‡	0.629	-\$154	\$281	-\$195	\$323
Surgical	\$121	-\$34	\$155	0.456	-\$187	\$496	-\$253	\$562

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.65: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	20,107	20.5%	17.8%	17,319	20.7%	18.2%	-0.16 pp	0.791	-1.19 pp	0.86 pp	-1.38 pp	1.05 pp
	Non-Hispanic White	277,445	27.0%	22.7%	280,513	25.9%	22.3%	-0.67 pp	0.002	-1.04 pp	-0.31 pp	-1.11 pp	-0.24 pp
Surgical	Hispanic	2,441	40.9%	24.9%	1,919	39.3%	30.0%	-6.59 pp	<0.001	-8.77 pp	-4.41 pp	-9.19 pp	-3.99 pp
	Non-Hispanic White	55,863	41.9%	27.2%	49,043	39.7%	29.6%	-4.58 pp	<0.001	-6.11 pp	-3.05 pp	-6.40 pp	-2.76 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.66: Difference in Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.16 pp	-0.67 pp	0.51 pp	0.417	-0.52 pp	1.54 pp	-0.72 pp	1.73 pp
Surgical	-6.59 pp	-4.58 pp	-2.01 pp	0.136	-4.22 pp	0.21 pp	-4.65 pp	0.63 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.67: Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	4,085	31.9	27.8	3,376	33.7	31.8	-2.21 ‡	0.007	-3.55	-0.86	-3.81	-0.61
	Non-Hispanic White	69,538	33.7	29.9	66,661	33.7	32.3	-2.47 ‡	<0.001	-2.90	-2.05	-2.98	-1.96
Surgical	Hispanic	496	29.5	23.1	468	30.0	27.3	-3.77	0.023	-6.50	-1.04	-7.02	-0.52
	Non-Hispanic White	14,196	31.2	25.4	12,407	31.5	28.8	-3.21	<0.001	-4.01	-2.40	-4.17	-2.25

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.68: Difference in Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-2.21 ‡	-2.47 ‡	0.27	0.743	-1.07	1.61	-1.33	1.86
Surgical	-3.77	-3.21	-0.56	0.735	-3.29	2.17	-3.82	2.69

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.69: Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	19,729	30.0%	30.2%	17,061	30.3%	29.4%	0.99 pp	0.064	0.11 pp	1.88 pp	-0.06 pp	2.05 pp
	Non-Hispanic White	274,394	30.6%	30.3%	277,863	30.2%	29.6%	0.28 pp	0.092	0.01 pp	0.55 pp	-0.05 pp	0.60 pp
Surgical	Hispanic	2,792	12.6%	11.8%	2,248	12.8%	11.5%	0.53 pp	0.564	-0.98 pp	2.04 pp	-1.27 pp	2.32 pp
	Non-Hispanic White	64,454	13.6%	12.6%	57,772	12.9%	12.0%	-0.07 pp	0.788	-0.47 pp	0.34 pp	-0.55 pp	0.42 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.70: Difference in Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.99 pp	0.28 pp	0.72 pp	0.193	-0.19 pp	1.62 pp	-0.36 pp	1.80 pp
Surgical	0.53 pp	-0.07 pp	0.59 pp	0.523	-0.94 pp	2.13 pp	-1.23 pp	2.42 pp

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.71: Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	19,729	28.8%	29.0%	17,061	29.0%	28.4%	0.80 pp‡	0.129	-0.07 pp	1.67 pp	-0.23 pp	1.83 pp
	Non-Hispanic White	274,394	29.3%	28.9%	277,863	28.9%	28.2%	0.27 pp	0.098	0.00 pp	0.54 pp	-0.05 pp	0.60 pp
Surgical	Hispanic	2,792	11.6%	10.6%	2,248	11.6%	10.0%	0.51 pp	0.557	-0.91 pp	1.93 pp	-1.19 pp	2.2 pp
	Non-Hispanic White	64,454	12.3%	11.1%	57,772	11.6%	10.7%	-0.24 pp	0.255	-0.58 pp	0.11 pp	-0.65 pp	0.17 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.72: Difference in Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.80 pp‡	0.27 pp	0.53 pp	0.326	-0.36 pp	1.41 pp	-0.53 pp	1.58 pp
Surgical	0.51 pp	-0.24 pp	0.75 pp	0.394	-0.69 pp	2.18 pp	-0.97 pp	2.46 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.73: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	21,050	15.7%	17.6%	18,167	15.2%	17.7%	-0.56 pp	0.213	-1.31 pp	0.18 pp	-1.45 pp	0.32 pp
	Non-Hispanic White	290,736	18.1%	18.8%	293,669	17.7%	18.6%	-0.19 pp	0.263	-0.48 pp	0.09 pp	-0.54 pp	0.15 pp
Surgical	Hispanic	2,660	3.2%	3.3%	2,134	3.1%	3.4%	-0.29 pp	0.589	-1.16 pp	0.58 pp	-1.32 pp	0.75 pp
	Non-Hispanic White	59,187	3.8%	3.7%	52,903	3.8%	3.8%	-0.05 pp	0.634	-0.24 pp	0.13 pp	-0.28 pp	0.17 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.74: Difference in Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.56 pp	-0.19 pp	-0.37 pp	0.420	-1.12 pp	0.38 pp	-1.27 pp	0.53 pp
Surgical	-0.29 pp	-0.05 pp	-0.23 pp	0.665	-1.11 pp	0.65 pp	-1.28 pp	0.82 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.75: Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Hispanic	19,387	11.7%	13.4%	16,798	11.5%	13.3%	-0.16 pp	0.718	-0.88 pp	0.56 pp	-1.02 pp	0.7 pp
	Non-Hispanic White	271,576	14.1%	15.1%	275,092	14.0%	14.9%	0.05 pp	0.699	-0.18 pp	0.29 pp	-0.22 pp	0.33 pp
Surgical	Hispanic	2,644	2.6%	2.7%	2,120	2.5%	2.9%	-0.31 pp	0.562	-1.19 pp	0.57 pp	-1.36 pp	0.74 pp
	Non-Hispanic White	58,779	3.1%	3.2%	52,528	3.1%	3.2%	-0.06 pp	0.605	-0.23 pp	0.12 pp	-0.27 pp	0.16 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.76: Difference in Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.16 pp	0.05 pp	-0.21 pp	0.637	-0.96 pp	0.53 pp	-1.10 pp	0.67 pp
Surgical	-0.31 pp	-0.06 pp	-0.25 pp	0.636	-1.14 pp	0.63 pp	-1.31 pp	0.80 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.77: Impact of BPCI Advanced on Average Episode Payments, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	\$25,651	\$28,042	82,319	\$25,400	\$28,418	-\$627	<0.001	-\$913	-\$340	-\$968	-\$285
	Non-dually Eligible	261,866	\$25,554	\$26,650	260,933	\$25,157	\$26,961	-\$708 ‡	<0.001	-\$873	-\$543	-\$905	-\$511
Surgical	Dually Eligible	7,208	\$32,101	\$31,331	7,078	\$31,654	\$33,286	-\$2,402	<0.001	-\$3,117	-\$1,687	-\$3,254	-\$1,549
	Non-dually Eligible	66,883	\$30,859	\$29,363	58,923	\$30,372	\$30,760	-\$1,883	<0.001	-\$2,241	-\$1,525	-\$2,309	-\$1,456

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.78: Difference in Impact of BPCI Advanced on Average Episode Payments, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$627	-\$708 ‡	\$81	0.630	-\$196	\$359	-\$250	\$412
Surgical	-\$2,402	-\$1,883	-\$519	0.207	-\$1,196	\$158	-\$1,326	\$288

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.79: Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	\$5,619	\$5,816	82,319	\$5,520	\$6,304	-\$587	<0.001	-\$750	-\$425	-\$781	-\$394
	Non-dually Eligible	261,866	\$4,522	\$3,875	260,933	\$4,295	\$4,037	-\$390 ‡	<0.001	-\$477	-\$302	-\$494	-\$286
Surgical	Dually Eligible	7,208	\$6,710	\$5,072	7,078	\$6,683	\$6,337	-\$1,291	<0.001	-\$1,754	-\$827	-\$1,843	-\$738
	Non-dually Eligible	66,883	\$4,928	\$3,209	58,923	\$4,904	\$3,731	-\$546	<0.001	-\$774	-\$318	-\$817	-\$274

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.80: Difference in Impact of BPCI Advanced on SNF Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$587	-\$390 ‡	-\$198	0.043	-\$359	-\$37	-\$389	-\$6
Surgical	-\$1,291	-\$546	-\$745	0.006	-\$1,188	-\$301	-\$1,273	-\$216

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.81: Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	\$681	\$802	82,319	\$700	\$889	-\$69	0.045	-\$125	-\$12	-\$136	-\$2
	Non-dually Eligible	261,866	\$941	\$1,167	260,933	\$988	\$1,388	-\$174	<0.001	-\$241	-\$107	-\$254	-\$94
Surgical	Dually Eligible	7,208	\$1,377	\$1,277	7,078	\$1,204	\$1,617	-\$513	0.006	-\$819	-\$206	-\$878	-\$147
	Non-dually Eligible	66,883	\$1,705	\$1,509	58,923	\$1,614	\$2,190	-\$772	<0.001	-\$947	-\$597	-\$981	-\$563

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.82: Difference in Impact of BPCI Advanced on IRF Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$69	-\$174	\$105	0.007	\$41	\$169	\$29	\$181
Surgical	-\$513	-\$772	\$259	0.130	-\$22	\$540	-\$76	\$594

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.83: Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	\$1,132	\$1,327	82,319	\$1,100	\$1,299	-\$4 ‡	0.823	-\$31	\$24	-\$36	\$29
	Non-dually Eligible	261,866	\$1,321	\$1,439	260,933	\$1,274	\$1,404	-\$12	0.321	-\$33	\$8	-\$37	\$12
Surgical	Dually Eligible	7,208	\$1,670	\$1,538	7,078	\$1,535	\$1,545	-\$142	0.008	-\$230	-\$54	-\$247	-\$37
	Non-dually Eligible	66,883	\$1,747	\$1,444	58,923	\$1,590	\$1,469	-\$182	0.003	-\$282	-\$82	-\$301	-\$63

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.84: Difference in Impact of BPCI Advanced on HH Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$4 ‡	-\$12	\$9 ‡	0.588	-\$18	\$35	-\$23	\$40
Surgical	-\$142	-\$182	\$40	0.521	-\$63	\$143	-\$82	\$162

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.85: Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	\$3,985	\$4,746	82,319	\$3,969	\$4,595	\$135	0.085	\$6	\$265	-\$19	\$290
	Non-dually Eligible	261,866	\$4,083	\$4,536	260,933	\$4,066	\$4,460	\$59	0.079	\$4	\$115	-\$7	\$125
Surgical	Dually Eligible	7,208	\$1,809	\$1,936	7,078	\$1,694	\$1,878	-\$57	0.694	-\$295	\$181	-\$340	\$227
	Non-dually Eligible	66,883	\$1,629	\$1,668	58,923	\$1,580	\$1,646	-\$27	0.515	-\$95	\$41	-\$108	\$54

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.86: Difference in Impact of BPCI Advanced on Readmission Payments Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	\$135	\$59	\$76 ‡	0.354	-\$59	\$211	-\$85	\$237
Surgical	-\$57	-\$27	-\$30	0.840	-\$273	\$213	-\$320	\$260

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.87: Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	84,715	29.3%	26.1%	82,319	28.5%	25.6%	-0.27 pp	0.392	-0.78 pp	0.25 pp	-0.88 pp	0.34 pp
	Non-dually Eligible	261,866	25.2%	20.9%	260,933	24.1%	20.6%	-0.75 pp	<0.001	-1.10 pp	-0.39 pp	-1.17 pp	-0.32 pp
Surgical	Dually Eligible	6,482	46.5%	33.5%	6,150	45.3%	35.7%	-3.40 pp	<0.001	-5.09 pp	-1.72 pp	-5.41 pp	-1.39 pp
	Non-dually Eligible	57,656	41.0%	26.0%	49,826	38.8%	28.7%	-4.98 pp	<0.001	-6.58 pp	-3.39 pp	-6.89 pp	-3.08 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.88: Difference in Impact of BPCI Advanced on Proportion of Episodes First Discharged to Institutional PAC Setting, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.27 pp	-0.75 pp	0.48 pp	0.120	-0.03 pp	0.98 pp	-0.12 pp	1.08 pp
Surgical	-3.40 pp	-4.98 pp	1.58 pp	0.137	-0.17 pp	3.33 pp	-0.50 pp	3.66 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.89: Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	25,553	38.2	32.9	23,704	38.7	36.3	-2.88	<0.001	-3.53	-2.24	-3.65	-2.11
	Non-dually Eligible	59,698	32.3	29.0	56,503	32.3	31.4	-2.44 ‡	<0.001	-2.85	-2.03	-2.93	-1.95
Surgical	Dually Eligible	2,509	35.7	30.0	2,378	35.9	33.5	-3.30	<0.001	-4.90	-1.70	-5.20	-1.39
	Non-dually Eligible	13,328	30.1	24.3	11,533	30.5	27.9	-3.19	<0.001	-3.96	-2.41	-4.11	-2.27

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.90: Difference in Impact of BPCI Advanced on Days in SNF Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-2.88	-2.44 ‡	-0.44	0.222	-1.04	0.15	-1.15	0.27
Surgical	-3.30	-3.19	-0.11	0.907	-1.60	1.39	-1.89	1.68

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.91: Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	82,878	31.2%	31.1%	80,704	31.0%	30.4%	0.56 pp	0.035	0.12 pp	1.00 pp	0.04 pp	1.08 pp
	Non-dually Eligible	259,476	30.9%	30.5%	259,024	30.5%	30.0%	0.12 pp	0.471	-0.15 pp	0.39 pp	-0.21 pp	0.45 pp
Surgical	Dually Eligible	7,193	14.7%	13.4%	7,056	14.0%	12.7%	0.03 pp	0.959	-0.92 pp	0.98 pp	-1.11 pp	1.17 pp
	Non-dually Eligible	66,842	13.4%	12.5%	58,898	12.7%	11.9%	-0.12 pp	0.643	-0.52 pp	0.29 pp	-0.60 pp	0.37 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.92: Difference in Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.56 pp	0.12 pp	0.44 pp	0.115	-0.02 pp	0.90 pp	-0.11 pp	0.99 pp
Surgical	0.03 pp	-0.12 pp	0.15 pp	0.811	-0.85 pp	1.15 pp	-1.05 pp	1.34 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.93: Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	82,878	30.2%	30.2%	80,704	30.0%	29.4%	0.60 pp	0.025	0.16 pp	1.04 pp	0.08 pp	1.12 pp
	Non-dually Eligible	259,476	29.5%	29.0%	259,024	29.1%	28.5%	0.08 pp	0.614	-0.19 pp	0.36 pp	-0.24 pp	0.41 pp
Surgical	Dually Eligible	7,193	13.7%	12.1%	7,056	12.9%	11.7%	-0.34 pp‡	0.517	-1.20 pp	0.52 pp	-1.36 pp	0.69 pp
	Non-dually Eligible	66,842	12.1%	11.0%	58,898	11.5%	10.6%	-0.23 pp	0.285	-0.57 pp	0.12 pp	-0.64 pp	0.19 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.94: Difference in Impact of BPCI Advanced on Unplanned Readmission Rate Through the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.60 pp	0.08 pp	0.52 pp	0.065	0.06 pp	0.97 pp	-0.03 pp	1.06 pp
Surgical	-0.34 pp‡	-0.23 pp	-0.11 pp‡	0.836	-1.01 pp	0.78 pp	-1.18 pp	0.95 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.95: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	87,865	17.8%	19.5%	85,300	17.5%	19.7%	-0.52 pp	0.064	-0.98 pp	-0.06 pp	-1.06 pp	0.03 pp
	Non-dually Eligible	274,991	17.6%	18.1%	273,886	17.3%	17.9%	-0.14 pp	0.419	-0.42 pp	0.14 pp	-0.48 pp	0.20 pp
Surgical	Dually Eligible	6,831	4.1%	4.0%	6,658	4.2%	4.1%	0.02 pp	0.937	-0.46 pp	0.51 pp	-0.55 pp	0.60 pp
	Non-dually Eligible	61,329	3.6%	3.6%	53,928	3.6%	3.6%	-0.11 pp	0.336	-0.29 pp	0.08 pp	-0.33 pp	0.11 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.96: Difference in Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.52 pp	-0.14 pp	-0.38 pp	0.167	-0.83 pp	0.07 pp	-0.92 pp	0.16 pp
Surgical	0.02 pp	-0.11 pp	0.13 pp	0.667	-0.37 pp	0.64 pp	-0.47 pp	0.73 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.97: Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY4 Episodes (N)	Baseline Mean	MY4 Mean	MY4 Episodes (N)	Baseline Mean	MY4 Mean						
Medical	Dually Eligible	81,537	14.2%	15.8%	79,452	14.1%	15.8%	-0.13 pp	0.572	-0.52 pp	0.26 pp	-0.60 pp	0.33 pp
	Non-dually Eligible	257,044	13.5%	14.3%	256,601	13.4%	14.1%	0.10 pp	0.473	-0.13 pp	0.32 pp	-0.17 pp	0.36 pp
Surgical	Dually Eligible	6,770	3.5%	3.5%	6,593	3.5%	3.6%	0.02 pp	0.927	-0.42 pp	0.47 pp	-0.50 pp	0.55 pp
	Non-dually Eligible	60,932	2.9%	3.0%	53,558	2.9%	3.1%	-0.09 pp	0.406	-0.26 pp	0.09 pp	-0.29 pp	0.12 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.98: Difference in Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries with Dual Eligibility and without Dual Eligibility, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Impact on Dually Eligible Beneficiaries (DiD)	Impact on Non-dually Eligible Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-0.13 pp	0.10 pp	-0.23 pp	0.325	-0.62 pp	0.15 pp	-0.69 pp	0.23 pp
Surgical	0.02 pp	-0.09 pp	0.11 pp	0.692	-0.35 pp	0.58 pp	-0.44 pp	0.67 pp

*Note:* See the first page of this appendix for data sources and more information.

**E. Outcomes for Hispanic Beneficiaries for Model Years 1, 2, and 3**

**Exhibit J.99: Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean	MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean						
Medical	Hispanic	24,161	\$25,264	\$25,252	19,414	\$24,965	\$25,569	-\$616	0.020	-\$1,052	-\$180	-\$1,135	-\$97
	Non-Hispanic White	305,908	\$25,717	\$25,423	306,791	\$25,335	\$25,596	-\$555 ‡	<0.001	-\$702	-\$409	-\$730	-\$381
Surgical	Hispanic	3,810	\$30,491	\$27,753	2,681	\$29,919	\$28,956	-\$1,775	<0.001	-\$2,587	-\$963	-\$2,743	-\$807
	Non-Hispanic White	101,774	\$30,206	\$27,833	86,025	\$29,791	\$28,709	-\$1,291	<0.001	-\$1,561	-\$1,021	-\$1,612	-\$969

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.100: Difference in Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$616	-\$555 ‡	-\$61	0.819	-\$497	\$376	-\$581	\$460
Surgical	-\$1,775	-\$1,291	-\$484	0.303	-\$1,258	\$290	-\$1,407	\$438

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.101: Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean	MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean						
Medical	Hispanic	23,802	31.7%	31.5%	19,211	32.4%	31.1%	1.13 pp	0.018	0.35 pp	1.92 pp	0.20 pp	2.07 pp
	Non-Hispanic White	303,366	31.9%	30.9%	304,555	31.8%	30.9%	-0.09 pp ‡	0.541	-0.35 pp	0.16 pp	-0.39 pp	0.21 pp
Surgical	Hispanic	3,809	12.6%	11.3%	2,680	12.1%	11.1%	-0.37 pp	0.701	-1.94 pp	1.20 pp	-2.24 pp	1.50 pp
	Non-Hispanic White	101,727	13.6%	12.7%	85,987	13.4%	13.1%	-0.61 pp	0.063	-1.15 pp	-0.07 pp	-1.25 pp	0.03 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.102: Difference in Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	1.13 pp	-0.09 pp ‡	1.23 pp	0.013	0.41 pp	2.04 pp	0.25 pp	2.20 pp
Surgical	-0.37 pp	-0.61 pp	0.24 pp	0.802	-1.35 pp	1.84 pp	-1.66 pp	2.14 pp

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit J.103: Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean	MY1/2 Episodes (N)	Baseline Mean	MY1/2 Mean						
Medical	Hispanic	23,434	13.7%	12.2%	18,882	13.5%	11.7%	0.33 pp	0.394	-0.30 pp	0.96 pp	-0.42 pp	1.08 pp
	Non-Hispanic White	300,280	16.1%	14.3%	301,317	15.9%	14.0%	0.11 pp	0.386	-0.10 pp	0.33 pp	-0.14 pp	0.37 pp
Surgical	Hispanic	3,779	2.5%	2.0%	2,669	2.4%	2.4%	-0.46 pp	0.162	-1.01 pp	0.08 pp	-1.11 pp	0.19 pp
	Non-Hispanic White	101,074	3.3%	2.7%	85,402	3.3%	2.6%	0.01 pp	0.943	-0.13 pp	0.14 pp	-0.16 pp	0.17 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.104: Difference in Impact of BPCI Advanced on Mortality Rate During the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, October 1, 2018 – December 31, 2019**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.33 pp	0.11 pp	0.21 pp	0.583	-0.43 pp	0.85 pp	-0.55 pp	0.98 pp
Surgical	-0.46 pp	0.01 pp	-0.47 pp	0.166	-1.02 pp	0.09 pp	-1.13 pp	0.19 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.105: Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY3 Episodes (N)	Baseline Mean	MY3 Mean	MY3 Episodes (N)	Baseline Mean	MY3 Mean						
Medical	Hispanic	19,139	\$24,967	\$25,476	16,836	\$25,089	\$25,683	-\$84 ‡	0.792	-\$607	\$439	-\$708	\$540
	Non-Hispanic White	251,685	\$25,780	\$25,691	240,662	\$25,406	\$26,107	-\$789 ‡	<0.001	-\$965	-\$612	-\$999	-\$579
Surgical	Hispanic	2,609	\$30,930	\$27,923	2,290	\$30,399	\$29,944	-\$2,553	<0.001	-\$3,587	-\$1,518	-\$3,786	-\$1,320
	Non-Hispanic White	69,784	\$31,118	\$28,204	57,850	\$30,734	\$29,585	-\$1,764	<0.001	-\$2,118	-\$1,410	-\$2,186	-\$1,342

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.106: Difference in Impact of BPCI Advanced on Average Episode Payments, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	-\$84 ‡	-\$789 ‡	\$705	0.026	\$183	\$1,227	\$83	\$1,327
Surgical	-\$2,553	-\$1,764	-\$789	0.196	-\$1,792	\$214	-\$1,984	\$406

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.107: Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY3 Episodes (N)	Baseline Mean	MY3 Mean	MY3 Episodes (N)	Baseline Mean	MY3 Mean						
Medical	Hispanic	18,843	30.7%	28.4%	16,632	31.5%	28.2%	1.03 pp	0.051	0.16 pp	1.89 pp	-0.01 pp	2.06 pp
	Non-Hispanic White	249,369	31.1%	28.6%	238,658	31.0%	28.8%	-0.28 pp ‡	0.089	-0.55 pp	-0.01 pp	-0.61 pp	0.04 pp
Surgical	Hispanic	2,607	14.2%	12.0%	2,290	13.9%	12.1%	-0.37 pp ‡	0.705	-1.98 pp	1.24 pp	-2.29 pp	1.55 pp
	Non-Hispanic White	69,730	14.6%	12.9%	57,796	14.4%	13.1%	-0.29 pp	0.371	-0.81 pp	0.24 pp	-0.91 pp	0.34 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.108: Difference in Impact of BPCI Advanced on Readmission Rate Through the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	1.03 pp	-0.28 pp ‡	1.31 pp	0.016	0.41 pp	2.20 pp	0.24 pp	2.37 pp
Surgical	-0.37 pp ‡	-0.29 pp	-0.08 pp ‡	0.935	-1.78 pp	1.61 pp	-2.11 pp	1.94 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.109: Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Population		BPCI Advanced			Comparison			Impact (DiD)	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
		MY3 Episodes (N)	Baseline Mean	MY3 Mean	MY3 Episodes (N)	Baseline Mean	MY3 Mean						
Medical	Hispanic	20,437	18.2%	19.1%	18,143	18.2%	18.5%	0.62 pp	0.266	-0.29 pp	1.52 pp	-0.47 pp	1.70 pp
	Non-Hispanic White	265,189	20.7%	19.9%	254,260	20.3%	19.9%	-0.39 pp	0.036	-0.70 pp	-0.08 pp	-0.76 pp	-0.03 pp
Surgical	Hispanic	2,604	3.3%	3.5%	2,291	3.2%	3.2%	0.26 pp	0.595	-0.54 pp	1.05 pp	-0.69 pp	1.21 pp
	Non-Hispanic White	69,620	4.1%	4.1%	57,710	4.1%	4.0%	0.06 pp	0.567	-0.12 pp	0.25 pp	-0.16 pp	0.29 pp

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit J.110: Difference in Impact of BPCI Advanced on Mortality Rate During the Anchor Stay and the 90-day PDP, Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White, Hospitals and PGPs, January 1, 2020 – December 31, 2020**

Clinical Episode Type	Impact on Hispanic Beneficiaries (DiD)	Impact on Non-Hispanic White Beneficiaries (DiD)	Difference in Impact	P-Value	90% LCI	90% UCI	95% LCI	95% UCI
Medical	0.62 pp	-0.39 pp	1.01 pp	0.063	0.12 pp	1.90 pp	-0.05 pp	2.07 pp
Surgical	0.26 pp	0.06 pp	0.19 pp	0.690	-0.60 pp	0.99 pp	-0.75 pp	1.14 pp

*Note:* See the first page of this appendix for data sources and more information.

## Appendix K: Tables of Parallel Trends Tests Results

The following tables display the risk-adjusted parallel trends tests results associated with the impact estimates for all payment, utilization, and quality measures evaluated, as well as the results associated with the differences in impacts for beneficiary subpopulations for total episode payments, the readmission rate through the 90-day PDP including and excluding planned readmissions, and the mortality rate during the anchor stay or 90-day PDP. The race and ethnicity data come from the RTI race codes from the MBSF.

As described in **Appendix C**, we tested the null hypothesis that BPCI Advanced participants and comparison hospitals had parallel trends during the baseline period at the 10% level of significance. We reject the null hypothesis that there were parallel trends in the baseline at the 10% level if the p-value is less than 0.10. Based on this threshold, we anticipate that for one in 10 outcome measures, we would reject the null hypothesis of parallel trends based on chance.

Total allowed payments are Medicare Parts A and B payments that include beneficiary cost sharing, while total paid payments exclude beneficiary cost sharing. We only calculate proportion of episodes first discharged to institutional PAC setting and number of days in SNF for inpatient clinical episodes. Blank cells indicate there was not sufficient sample size to construct comparison groups in any clinical episodes within the CESLG. All results are based on the BPCI Advanced evaluation team's analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015, and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (Model Year 4) for BPCI Advanced episode initiators and matched comparison providers.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix. Please refer to **Appendix C** for additional information on outcome definitions and other methods.

**A. Pooled Parallel Trends**

**Exhibit K.1: Results of Parallel Trends Test, Payment Outcomes, BPCI Advanced Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Total Allowed Payments		Total Paid Payments		SNF Payments		IRF Payments		HH Payments		Readmissions Payments	
	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
All Clinical Episodes	-\$9	0.188	-\$7	0.284	-\$6	0.122	\$2	0.558	-\$1	0.259	\$1	0.561
Medical	-\$9	0.209	-\$6	0.328	-\$7 ‡	0.088	\$3	0.263	-\$1	0.407	\$1	0.821
Hospital	-\$8	0.261	-\$5	0.413	-\$7	0.103	\$3	0.239	-\$1	0.286	\$2	0.500
PGP	-\$19	0.309	-\$16	0.336	-\$9	0.401	\$0	0.980	\$1	0.562	-\$6	0.351
Surgical	-\$8	0.553	-\$9	0.525	\$0	0.965	-\$5	0.419	-\$3	0.356	\$4	0.239
Hospital	-\$3	0.865	-\$3	0.862	-\$1	0.953	-\$3	0.723	\$0	0.861	\$6	0.181
PGP	-\$5	0.804	-\$8	0.710	\$14	0.365	-\$12	0.183	-\$11	0.110	\$2	0.688

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.2: Results of Parallel Trends Test, Institutional PAC and SNF Days Outcomes, BPCI Advanced Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Proportion of Episodes First Discharged to Inst PAC		Days in SNF Through the 90-day PDP	
	Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient	P-Value
All Clinical Episodes	-0.07	0.594	-0.040 ‡	0.017
Medical	0.01	0.913	-0.045 ‡	0.016
Hospital	0.06	0.553	-0.053 ‡	0.006
PGP	-0.20	0.464	-0.010	0.801
Surgical	-0.59	0.177	-0.009	0.766
Hospital	-0.10	0.820	-0.038	0.314
PGP	-1.07	0.177	0.027	0.572

*Note:* See the first page of this appendix for data sources and more information

**Exhibit K.3: Results of Parallel Trends Test, Readmissions Outcomes, BPCI Advanced Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Readmission Rate Through the 90-day PDP		Unplanned Readmission Rate Through the 90-day PDP	
	Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
All Clinical Episodes	0.07	0.260	0.10	0.141
Medical	0.07	0.335	0.10	0.176
Hospital	0.10	0.155	0.13	0.084
PGP	-0.08	0.629	-0.04	0.811
Surgical	0.16	0.426	0.14	0.450
Hospital	0.25	0.246	0.20	0.349
PGP	-0.12	0.784	0.08	0.843

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.4: Results of Parallel Trends Test, Mortality Outcomes, BPCI Advanced Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Mortality Rate During the Anchor Stay and 90-day PDP		Mortality Rate During the 90-day PDP	
	Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
All Clinical Episodes	0.06	0.600	0.01	0.938
Medical	0.08	0.468	0.03	0.774
Hospital	-0.02	0.863	-0.03	0.810
PGP	0.25	0.438	0.04	0.878
Surgical	-0.42	0.261	-0.38	0.338
Hospital	-0.48	0.248	-0.46	0.300
PGP	-0.35	0.672	-0.37	0.666

*Note:* See the first page of this appendix for data sources and more information.

**B. Hospital Individual CESLG Parallel Trends**

**Exhibit K.5: Results of Parallel Trends Test, Payment Outcomes, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG		Total Allowed Payments		Total Paid Payments		SNF Payments		IRF Payments		HH Payments		Readmissions Payments	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Medical	Cardiac Care	\$3	0.830	\$4	0.746	-\$5	0.400	\$3	0.309	\$0	0.901	\$3	0.687
	GI Care	-\$26	0.218	-\$19	0.318	-\$12	0.171	\$0	0.945	\$0	0.969	-\$3	0.785
	Medical & Critical Care	-\$11	0.215	-\$8	0.311	-\$6	0.192	\$2	0.317	-\$1	0.210	\$2	0.511
	Neurological Care	-\$6	0.847	-\$2	0.928	-\$16	0.324	\$7	0.645	-\$1	0.618	\$1	0.867
Surgical	Cardiac Procedures	\$20	0.366	\$17	0.452	-\$1	0.874	\$13 ‡	0.013	-\$1	0.599	\$8	0.412
	GI Surgery	\$83	0.239	\$76	0.241	\$56 ‡	0.056	\$9	0.486	\$0	0.951	\$43 ‡	0.036
	Orthopedics	-\$14	0.581	-\$11	0.634	-\$9	0.606	-\$6	0.687	\$1	0.856	\$4	0.463
	Spinal Procedures	\$6	0.895	\$5	0.897	-\$3	0.790	-\$9	0.627	\$0	0.926	\$0	0.996

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.6: Results of Parallel Trends Test, Institutional PAC and SNF Days Outcomes CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG		Proportion of Episodes First Discharged to Inst PAC		Days in SNF Through the 90-day PDP	
		Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
Medical	Cardiac Care	-0.05	0.816	-0.07 ‡	0.041
	GI Care	-0.36	0.351	-0.11 ‡	0.069
	Medical & Critical Care	0.13	0.286	-0.05 ‡	0.028
	Neurological Care	-0.21	0.467	-0.06	0.284
Surgical	Cardiac Procedures	1.17 ‡	0.068	0.06	0.549
	GI Surgery	-0.03	0.972	0.14	0.284
	Orthopedics	-0.31	0.616	-0.05	0.249
	Spinal Procedures	-0.93	0.164	-0.03	0.737

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit K.7: Results of Parallel Trends Test, Readmissions and Mortality Outcomes, CESLG, Hospitals, January 1, 2021 – December 31, 2021**

CESLG		Readmission Rate Through the 90-day PDP		Mortality Rate During the Anchor Stay and 90-day PDP	
		Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
Medical	Cardiac Care	0.30 ‡	0.033	-0.18	0.356
	GI Care	0.12	0.662	-0.67	0.129
	Medical & Critical Care	0.03	0.684	0.09	0.489
	Neurological Care	0.08	0.786	-0.39	0.272
Surgical	Cardiac Procedures	0.09	0.823	-0.37	0.685
	GI Surgery	-0.13	0.860	-2.27 ‡	0.091
	Orthopedics	0.48	0.161	-0.21	0.676
	Spinal Procedures	-0.03	0.957	-2.01	0.309

*Note:* See the first page of this appendix for data sources and more information.

**C. PGP Individual CESLG Parallel Trends**

**Exhibit K.8: Results of Parallel Trends Test, Payment Outcomes, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG		Total Allowed Payments		Total Paid Payments		SNF Payments		IRF Payments		HH Payments		Readmissions Payments	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Medical	Cardiac Care	-\$1	0.977	-\$2	0.934	\$5	0.719	\$4	0.492	\$1	0.670	-\$9	0.511
	GI Care	-\$12	0.736	-\$13	0.699	-\$14	0.418	-\$8	0.273	-\$2	0.480	-\$1	0.974
	Medical & Critical Care	-\$14	0.537	-\$11	0.602	-\$14	0.271	\$5	0.557	\$2	0.307	-\$6	0.450
	Neurological Care	-\$47	0.418	-\$46	0.400	\$21	0.524	-\$54	0.245	\$0	0.999	\$7	0.666
Surgical	Cardiac Procedures												
	GI Surgery												
	Orthopedics	-\$16	0.451	-\$20	0.352	\$26	0.125	-\$20 ‡	0.049	-\$15	0.103	\$1	0.801
	Spinal Procedures	\$6	0.942	\$9	0.907	-\$30 ‡	0.064	\$4	0.808	-\$3	0.654	\$3	0.744

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.9: Results of Parallel Trends Test, Institutional PAC and SNF Days Outcomes, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG		Share First Discharged to Institutional PAC		Days in SNF Through the 90-day PDP	
		Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
Medical	Cardiac Care	-0.05	0.926	0.11	0.177
	GI Care	-0.45	0.515	-0.14	0.328
	Medical & Critical Care	-0.15	0.642	-0.06	0.376
	Neurological Care	-0.79	0.150	0.06	0.617
Surgical	Cardiac Procedures				
	GI Surgery				
	Orthopedics	-1.02	0.246	0.04	0.458
	Spinal Procedures	-1.91	0.118	-0.14	0.347

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.10: Results of Parallel Trends Test, Readmissions and Mortality Outcomes, CESLG, PGPs, January 1, 2021 – December 31, 2021**

CESLG		Readmission Rate Through the 90-day PDP		Mortality Rate During the Anchor Stay and 90-day PDP	
		Linear Trend Coefficient (pp)	P-Value	Linear Trend Coefficient (pp)	P-Value
Medical	Cardiac Care	-0.14	0.644	0.55	0.234
	GI Care	-0.25	0.575	-0.16	0.836
	Medical & Critical Care	-0.05	0.793	0.29	0.561
	Neurological Care	0.36	0.479	-0.11	0.899
Surgical	Cardiac Procedures				
	GI Surgery				
	Orthopedic	0.11	0.821	-0.49	0.561
	Spinal Procedures	-0.88	0.214	-0.09	0.984

*Note:* See the first page of this appendix for data sources and more information.

**D. Impact Estimates and Difference in Impacts by Beneficiary Subpopulation**

**Exhibit K.11: Parallel Trends Results for Beneficiaries who are Black or African American and Beneficiaries who are Non-Hispanic White for Payment Outcomes, Readmission Rates, Mortality Rates, Proportion of Episodes First Discharged to Institutional PAC Setting, and Days in SNF Through the 90-day PDP, Model Year 4, January 1, 2021 – December 31, 2021**

Outcomes	Clinical Episode	Black or African American		Non-Hispanic White		Difference in Impacts	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Total Allowed Payments	Medical	-\$2	0.933	-\$11	0.143	\$9	0.614
	Surgical	-\$86 ‡	0.060	\$0	0.988	-\$86 ‡	0.053
SNF Payments	Medical	-\$5	0.576	-\$7	0.101	\$1	0.898
	Surgical	-\$31	0.219	\$3	0.729	-\$34	0.173
IRF Payments	Medical	\$4	0.363	\$3	0.341	\$1	0.728
	Surgical	\$8	0.593	-\$5	0.426	\$14	0.335
HH Payments	Medical	-\$2	0.242	\$0	0.806	-\$2	0.291
	Surgical	-\$16 ‡	0.021	-\$2	0.529	-\$13 ‡	0.024
Readmission Payments	Medical	\$0	0.998	-\$1	0.812	\$1	0.932
	Surgical	-\$15	0.310	\$4	0.247	-\$19	0.207
First Discharged to Institutional PAC Setting	Medical	0.33 pp	0.187	-0.05 pp	0.647	0.37 pp	0.133
	Surgical	-1.60 pp ‡	0.039	-0.48 pp	0.273	-1.12 pp	0.117
SNF Days	Medical	-0.03	0.549	-0.04 ‡	0.033	0.01	0.765
	Surgical	0.06	0.497	-0.01	0.863	0.07	0.474
Readmission Rate	Medical	0.02 pp	0.914	0.05 pp	0.491	-0.03 pp	0.860
	Surgical	-0.51 pp	0.445	0.19 pp	0.352	-0.70 pp	0.294
Unplanned Readmission Rate	Medical	0.07 pp	0.684	0.07 pp	0.337	0.00 pp	0.993
	Surgical	-0.70 pp	0.320	0.19 pp	0.335	-0.89 pp	0.215
Mortality Rate	Medical	0.41 pp	0.122	0.07 pp	0.581	0.34 pp	0.219
	Surgical	-0.03 pp	0.986	-0.44 pp	0.254	0.41 pp	0.786
Mortality Rate 90-day PDP	Medical	0.33 pp	0.264	0.02 pp	0.877	0.31 pp	0.310
	Surgical	-1.12 pp	0.497	-0.29 pp	0.482	-0.83 pp	0.620

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.12: Parallel Trends Results for Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White for Payment Outcomes, Readmission Rates, Mortality Rates, Proportion of Episodes First Discharged to Institutional PAC Setting, and Days in SNF Through the 90-day PDP, Model Year 4, January 1, 2021 – December 31, 2021**

Outcomes	Clinical Episode	Hispanic		Non-Hispanic White		Difference in Impacts	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Total Allowed Payments	Medical	\$28	0.278	-\$11	0.129	\$39	0.133
	Surgical	-\$94 ‡	0.072	\$0	0.982	-\$93 ‡	0.071
SNF Payments	Medical	-\$10	0.449	-\$7	0.104	-\$3	0.817
	Surgical	\$4	0.889	\$3	0.764	\$1	0.960
IRF Payments	Medical	\$9	0.200	\$3	0.355	\$7	0.337
	Surgical	-\$38 ‡	0.068	-\$5	0.425	-\$33	0.121
HH Payments	Medical	-\$3	0.237	\$0	0.735	-\$3	0.292
	Surgical	-\$10	0.180	-\$2	0.469	-\$7	0.295
Readmission Payments	Medical	\$18 ‡	0.067	-\$1	0.850	\$19 ‡	0.068
	Surgical	-\$7	0.692	\$4	0.218	-\$11	0.532
First Discharged to Institutional PAC Setting	Medical	0.10 pp	0.789	-0.05 pp	0.653	0.14 pp	0.690
	Surgical	-1.50 pp	0.225	-0.49 pp	0.269	-1.01 pp	0.400
SNF Days	Medical	-0.11 ‡	0.077	-0.04 ‡	0.044	-0.07	0.256
	Surgical	-0.09	0.545	0.02	0.874	-0.08	0.566
Readmission Rate	Medical	0.39 pp	0.104	0.05 pp	0.501	0.34 pp	0.174
	Surgical	-0.41 pp	0.644	0.19 pp	0.339	-0.61 pp	0.508
Unplanned Readmission Rate	Medical	0.47 pp	0.062	0.07 pp	0.336	0.39 pp	0.130
	Surgical	-0.44 pp	0.622	0.20 pp	0.310	-0.64 pp	0.486
Mortality Rate	Medical	-0.22 pp	0.604	0.07 pp	0.573	-0.29 pp	0.506
	Surgical	-2.84 pp	0.206	-0.42 pp	0.273	-2.42 pp	0.284
Mortality Rate 90-day PDP	Medical	-0.25 pp	0.578	0.02 pp	0.866	-0.27 pp	0.563
	Surgical	-3.33 pp	0.173	-0.27 pp	0.513	-3.06 pp	0.212

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.13: Parallel Trends Results by Dual Eligibility Status for Payment Outcomes, Readmission Rates, Mortality Rates, Proportion of Episodes First Discharged to Institutional PAC Setting, and Days in SNF Through the 90-day PDP, Model Year 4, January 1, 2021 – December 31, 2021**

Outcomes	Clinical Episode Type	Dually Eligible		Non-Dually Eligible		Difference in Impacts	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Total Allowed Payments	Medical	\$4	0.727	-\$14 ‡	0.066	\$18	0.143
	Surgical	-\$18	0.574	-\$7	0.641	-\$12	0.717
SNF Payments	Medical	-\$7	0.300	-\$7 ‡	0.088	\$0	0.963
	Surgical	\$11	0.582	-\$2	0.835	\$13	0.521
IRF Payments	Medical	\$3	0.227	\$3	0.329	\$0	0.953
	Surgical	\$7	0.583	-\$7	0.287	\$14	0.207
HH Payments	Medical	-\$3 ‡	0.004	\$0	0.765	-\$3 ‡	0.004
	Surgical	-\$2	0.607	-\$3	0.379	\$1	0.818
Readmission Payments	Medical	\$7	0.144	-\$2	0.515	\$9 ‡	0.094
	Surgical	\$1	0.960	\$4	0.184	-\$4	0.740
First Discharged to Institutional PAC Setting	Medical	0.19 pp	0.211	-0.06 pp	0.605	0.25 pp	0.113
	Surgical	-0.01 pp	0.991	-0.67 pp	0.139	0.66 pp	0.275
SNF Days	Medical	-0.04	0.207	-0.05 ‡	0.014	0.01	0.828
	Surgical	0.01	0.848	-0.01	0.661	0.03	0.705
Readmission Rate	Medical	0.16 pp	0.159	0.03 pp	0.706	0.13 pp	0.302
	Surgical	0.66 pp	0.119	0.06 pp	0.762	0.60 pp	0.178
Unplanned Readmission Rate	Medical	0.17 pp	0.136	0.06 pp	0.419	0.11 pp	0.405
	Surgical	0.85 pp	0.054	0.01 pp	0.973	0.84 pp	0.066
Mortality Rate	Medical	0.19 pp	0.291	0.05 pp	0.712	0.14 pp	0.453
	Surgical	-0.30 pp	0.730	-0.45 pp	0.269	0.14 pp	0.880
Mortality Rate 90-day PDP	Medical	0.20 pp	0.271	-0.03 pp	0.803	0.23 pp	0.253
	Surgical	-0.31 pp	0.745	-0.40 pp	0.348	0.09 pp	0.931

*Note:* See the first page of this appendix for data sources and more information.

**E. Additional Outcomes for Hispanic Beneficiaries for Model Years 1, 2, and 3**

**Exhibit K.14: Parallel Trends Results for Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White for Average Episode Payments, Readmission Rate Through the 90-day PDP, and Mortality Rate During the Anchor Stay Through the 90-day PDP, Model Years 1 and 2, October 1, 2018 – December 31, 2019**

Outcomes	Clinical Episode Type	Hispanic		Non-Hispanic White		Differential Change	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Total Allowed Payments	Medical	-\$32	0.142	-\$17 ‡	0.011	-\$14	0.502
	Surgical	-\$68	0.102	-\$4	0.774	-\$63	0.108
Readmission Rate	Medical	-0.03 pp	0.878	-0.15 pp ‡	0.019	0.12 pp	0.547
	Surgical	-0.74 pp	0.299	0.16 pp	0.467	-0.89 pp	0.215
Mortality Rate	Medical	0.25 pp	0.500	-0.08 pp	0.361	0.33 pp	0.368
	Surgical	-0.79 pp	0.628	0.13 pp	0.672	-0.92 pp	0.575

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit K.15: Parallel Trends Results for Beneficiaries who are Hispanic and Beneficiaries who are Non-Hispanic White for Average Episode Payments, Readmission Rate Through the 90-day PDP, and Mortality Rate During the Anchor Stay Through the 90-day PDP, Model Year 3, January 1, 2020 – December 31, 2020**

Outcomes	Clinical Episode Type	Hispanic		Non-Hispanic White		Differential Change	
		Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value	Linear Trend Coefficient	P-Value
Total Allowed Payments	Medical	-\$41 ‡	0.048	-\$21 ‡	<0.001	-\$19	0.337
	Surgical	\$1	0.983	-\$15	0.262	\$15	0.707
Readmission Rate	Medical	0.15 pp	0.461	-0.19 pp ‡	0.003	0.34 pp	0.106
	Surgical	1.21 pp ‡	0.090	-0.07 pp	0.670	1.28 pp ‡	0.074
Mortality Rate	Medical	0.43 pp	0.131	-0.05 pp	0.577	0.48 pp	0.102
	Surgical	1.01 pp	0.389	0.19 pp	0.452	0.81 pp	0.496

*Note:* See the first page of this appendix for data sources and more information.

## Appendix L: Tables of Impact Estimate Sensitivity Results

The following tables display the risk-adjusted DiD results for the BPCI Advanced impact estimates and the sensitivity tests to understand whether the reported impact estimates were robust with respect to the episode sample used. First, we tested if our results are robust while excluding episodes aligned to Medicare ACOs (referred to as “No ACO Episodes”).<sup>1</sup> Next, we estimated the results using the analytic sample selected under the propensity score model with no caliper (referred to as “No Caliper Comparison Group”). We then tested if results are robust to excluding episodes with COVID-19 diagnosis (referred to as “No COVID-19 Episodes”). We also estimated the intention-to-treat (ITT) results including episodes for all matched BPCI Advanced hospitals and PGPs and their matched comparisons, regardless of if the BPCI Advanced hospital or PGP withdrew from the model prior to the end of Model Year 4 (referred to as “Intention to Treat”). Additionally, we estimated the results using a national sampled comparison group (referred to as “National Comparison Group”, in which the comparison group was defined as all episodes at eligible Medicare fee-for-service episodes nationwide occurring at non-participating hospitals.<sup>2</sup>

Medicare payments were standardized to remove the effects of geographic differences in wages, extra amounts to account for teaching programs and other policy factors. Total allowed payments are Medicare Parts A and B payments that include beneficiary cost sharing. Blank cells indicate there was not sufficient sample for comparison group construction for the clinical episodes within the CESLG. All results are based on the BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015, and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (Model Year 4) for BPCI Advanced episode initiators and matched comparison providers.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

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<sup>1</sup> Medicare ACOs refers to the ACO Investment Model, the Advanced Payment ACO Model, the Comprehensive End-Stage Renal Disease Care Model, the Comprehensive Primary Care Initiative Model, the Comprehensive Primary Care Initiative Plus Model, the Global and Professional Direct Contracting Model, the Independence at Home Demonstration, the Medicare and Medicaid Financial Alignment Initiative, the Medicare Shared Savings Program, the Next Generation ACO Model, the Pioneer ACO Model, the Primary Care First Model, the Vermont All-Payer ACO Model.

<sup>2</sup> The minimum hospital baseline volume criterion was applied. Episodes where the hospital or PGP previously participated in the clinical episode were removed from the comparison sample. No matching was used to construct the national comparison group.



**A. Pooled Impact Estimates**

**Exhibit L.1: BPCI Advanced Impact Estimate and Sensitivity Test Results, Total Allowed Payments Through the 90-day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
All Clinical Episodes	BPCI Advanced Impact Estimate	420,672	\$26,548	\$27,397	409,253	\$26,164	\$27,943	-\$930	-\$1,098	-\$761
	No ACO Episodes	243,953	\$26,909	\$27,923	242,304	\$26,569	\$28,486	-\$902	-\$1,105	-\$699
	No Caliper Comparison Group	472,057	\$26,887	\$27,734	457,067	\$26,345	\$28,188	-\$996 ‡	-\$1,167	-\$825
	No COVID-19 Episodes	334,429	\$26,445	\$26,383	327,876	\$26,059	\$27,020	-\$1,023	-\$1,184	-\$861
	Intention to Treat	428,797	\$26,555	\$27,412	416,723	\$26,172	\$27,942	-\$914	-\$1,081	-\$747
Medical	BPCI Advanced Impact Estimate	346,581	\$25,578	\$26,994	343,252	\$25,222	\$27,318	-\$680	-\$847	-\$514
	No ACO Episodes	203,286	\$25,965	\$27,551	204,712	\$25,645	\$27,897	-\$666	-\$874	-\$458
	No Caliper Comparison Group	395,318	\$25,993	\$27,364	388,945	\$25,448	\$27,606	-\$787 ‡	-\$956	-\$619
	No COVID-19 Episodes	263,332	\$25,447	\$25,849	264,786	\$25,089	\$26,263	-\$772	-\$931	-\$613
	Intention to Treat	352,683	\$25,581	\$27,003	348,794	\$25,224	\$27,312	-\$665	-\$830	-\$500
Hospital	BPCI Advanced Impact Estimate	282,018	\$25,705	\$27,121	295,835	\$25,432	\$27,518	-\$670	-\$850	-\$489
	No ACO Episodes	163,228	\$26,100	\$27,709	176,796	\$25,883	\$28,111	-\$619	-\$846	-\$391
	No Caliper Comparison Group	326,322	\$26,134	\$27,501	340,855	\$25,630	\$27,775	-\$777 ‡	-\$956	-\$599
	No COVID-19 Episodes	212,411	\$25,573	\$25,939	226,377	\$25,297	\$26,439	-\$775	-\$952	-\$598
	Intention to Treat	288,262	\$25,708	\$27,134	301,640	\$25,435	\$27,510	-\$649	-\$828	-\$471
PGP	BPCI Advanced Impact Estimate	75,199	\$25,029	\$26,411	75,022	\$24,265	\$26,395	-\$747	-\$1,129	-\$366
	No ACO Episodes	45,721	\$25,466	\$26,835	43,939	\$24,586	\$26,834	-\$879	-\$1,334	-\$423
	No Caliper Comparison Group	81,225	\$25,386	\$26,834	84,893	\$24,579	\$26,913	-\$887 ‡	-\$1,307	-\$467
	No COVID-19 Episodes	58,916	\$24,899	\$25,409	59,399	\$24,136	\$25,449	-\$802	-\$1,161	-\$443
	Intention to Treat	75,213	\$25,029	\$26,410	75,027	\$24,265	\$26,397	-\$750	-\$1,131	-\$369

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
Surgical	BPCI Advanced Impact Estimate	74,091	\$31,005	\$29,584	66,001	\$30,527	\$31,046	-\$1,939	-\$2,295	-\$1,583
	No ACO Episodes	40,667	\$31,414	\$30,040	37,592	\$31,024	\$31,554	-\$1,905	-\$2,328	-\$1,481
	No Caliper Comparison Group	76,739	\$31,416	\$29,968	68,122	\$30,943	\$31,395	-\$1,899	-\$2,249	-\$1,550
	No COVID-19 Episodes	71,097	\$30,937	\$29,159	63,090	\$30,457	\$30,558	-\$1,879	-\$2,228	-\$1,530
	Intention to Treat	76,114	\$31,026	\$29,628	67,929	\$30,550	\$31,069	-\$1,917	-\$2,274	-\$1,561
Hospital	BPCI Advanced Impact Estimate	48,112	\$32,610	\$31,711	49,125	\$31,954	\$32,790	-\$1,736	-\$2,196	-\$1,275
	No ACO Episodes	26,622	\$33,012	\$32,158	28,512	\$32,443	\$33,245	-\$1,657	-\$2,214	-\$1,100
	No Caliper Comparison Group	50,045	\$33,118	\$32,134	50,929	\$32,364	\$33,123	-\$1,742	-\$2,196	-\$1,289
	No COVID-19 Episodes	45,980	\$32,540	\$31,240	46,821	\$31,879	\$32,250	-\$1,671	-\$2,124	-\$1,218
	Intention to Treat	49,868	\$32,624	\$31,741	50,756	\$31,968	\$32,800	-\$1,715	-\$2,168	-\$1,262
PGP	BPCI Advanced Impact	27,424	\$27,839	\$25,570	20,358	\$27,585	\$27,427	-\$2,112	-\$2,688	-\$1,535
	No ACO Episodes	14,907	\$28,329	\$26,065	10,877	\$28,169	\$28,025	-\$2,120	-\$2,776	-\$1,464
	No Caliper Comparison Group	28,253	\$28,110	\$25,915	20,940	\$28,036	\$27,856	-\$2,016	-\$2,604	-\$1,428
	No COVID-19 Episodes	26,507	\$27,785	\$25,242	19,656	\$27,527	\$27,087	-\$2,104	-\$2,654	-\$1,553
	Intention to Treat	27,693	\$27,868	\$25,604	20,725	\$27,614	\$27,438	-\$2,088	-\$2,666	-\$1,511

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit L.2: BPCI Advanced Impact Estimate and National Comparison Sample Sensitivity Test Results, Total Allowed Payments Through the 90-day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
All Clinical Episodes	BPCI Advanced Impact Estimate	420,672	\$26,548	\$27,397	409,253	\$26,164	\$27,943	-\$930	-\$1,098	-\$761
	National Comparison Group	470,587	\$27,199	\$28,074	1,732,077	\$26,418	\$28,050	-\$758 ‡	-\$890	-\$627
Medical	BPCI Advanced Impact Estimate	346,581	\$25,578	\$26,994	343,252	\$25,222	\$27,318	-\$680	-\$847	-\$514
	National Comparison Group	394,541	\$25,471	\$26,887	1,125,772	\$24,683	\$26,813	-\$715 ‡	-\$856	-\$575
Surgical	BPCI Advanced Impact Estimate	74,091	\$31,005	\$29,584	66,001	\$30,527	\$31,046	-\$1,939	-\$2,295	-\$1,583
	National Comparison Group	76,046	\$31,015	\$29,682	606,305	\$30,134	\$30,954	-\$2,154 ‡	-\$2,399	-\$1,908

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit L.3: BPCI Advanced Impact Estimate and Sensitivity Test Results, Readmission Rate Through the 90-day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
All Clinical Episodes	BPCI Advanced Impact Estimate	416,389	27.9	27.4	405,682	27.5	26.9	0.16	-0.06	0.39
	No ACO Episodes	241,086	28.1	27.5	239,858	27.7	27.0	0.15	-0.13	0.43
	No Caliper Comparison Group	467,057	28.2	27.8	453,101	27.7	27.2	0.09	-0.13	0.31
	No COVID-19 Episodes	331,077	27.9	26.1	325,035	27.5	25.7	0.01	-0.22	0.25
	Intention to Treat	424,457	27.9	27.4	413,092	27.5	26.9	0.18	-0.05	0.40
Medical	BPCI Advanced Impact Estimate	342,354	31.0	30.7	339,728	30.6	30.1	0.24	-0.02	0.49
	No ACO Episodes	200,460	31.0	30.6	202,290	30.7	30.1	0.16	-0.15	0.48
	No Caliper Comparison Group	390,378	31.1	30.7	385,028	30.6	30.1	0.16	-0.08	0.40
	No COVID-19 Episodes	260,035	31.2	29.2	261,987	30.8	28.8	0.04	-0.23	0.31
	Intention to Treat	348,402	31.0	30.7	345,211	30.6	30.1	0.25	0.00	0.50
Hospital	BPCI Advanced Impact Estimate	278,495	31.2	30.9	292,727	30.9	30.3	0.26	-0.01	0.53
	No ACO Episodes	160,909	31.3	31.0	174,684	31.0	30.4	0.27	-0.07	0.61
	No Caliper Comparison Group	322,123	31.4	31.0	337,364	30.8	30.3	0.20	-0.06	0.46
	No COVID-19 Episodes	209,682	31.5	29.5	223,925	31.1	29.0	0.11	-0.18	0.40
	Intention to Treat	284,685	31.2	30.9	298,471	30.9	30.3	0.28	0.01	0.54
PGP	BPCI Advanced Impact Estimate	74,379	29.7	29.6	74,347	29.6	29.2	0.25	-0.34	0.83
	No ACO Episodes	45,148	29.7	29.1	43,463	29.5	28.9	-0.04	-0.75	0.68
	No Caliper Comparison Group	80,352	29.5	29.4	84,141	29.3	29.1	0.12	-0.44	0.68
	No COVID-19 Episodes	58,259	29.9	28.3	58,845	29.8	28.2	0.00	-0.57	0.58
	Intention to Treat	74,392	29.7	29.6	74,352	29.6	29.2	0.24	-0.34	0.83

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Surgical	BPCI Advanced Impact Estimate	74,035	13.6	12.6	65,954	12.9	12.0	-0.09	-0.48	0.30
	No ACO Episodes	40,626	13.8	12.7	37,568	13.1	11.9	0.20	-0.30	0.70
	No Caliper Comparison Group	76,679	13.7	12.7	68,073	13.0	12.2	-0.20	-0.59	0.19
	No COVID-19 Episodes	71,042	13.5	11.9	63,048	12.9	11.4	-0.08	-0.48	0.31
	Intention to Treat	76,055	13.6	12.6	67,881	12.9	12.0	-0.08	-0.47	0.30
Hospital	BPCI Advanced Impact Estimate	48,065	15.3	14.0	49,081	14.4	13.5	-0.38	-0.86	0.10
	No ACO Episodes	26,589	15.5	14.1	28,490	14.6	13.4	-0.15	-0.75	0.45
	No Caliper Comparison Group	49,997	15.4	14.1	50,883	14.5	13.7	-0.42	-0.89	0.04
	No COVID-19 Episodes	45,934	15.2	13.3	46,781	14.4	12.8	-0.39	-0.88	0.10
	Intention to Treat	49,818	15.3	14.1	50,711	14.4	13.5	-0.35	-0.82	0.12
PGP	BPCI Advanced Impact Estimate	27,415	10.0	9.5	20,355	9.5	8.7	0.28	-0.35	0.92
	No ACO Episodes	14,899	10.2	9.8	10,875	9.8	8.6	0.78	-0.03	1.58
	No Caliper Comparison Group	28,241	10.1	9.7	20,937	9.5	9.1	0.00	-0.70	0.69
	No COVID-19 Episodes	26,498	10.0	9.1	19,654	9.4	8.3	0.30	-0.34	0.93
	Intention to Treat	27,684	10.0	9.5	20,722	9.5	8.8	0.27	-0.36	0.90

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit L.4: BPCI Advanced Impact Estimate and Sensitivity Test Results, Mortality Rate During the Anchor Stay and 90-day PDP, Hospitals and PGPs, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
All Clinical Episodes	BPCI Advanced Impact Estimate	431,016	15.4	16.0	419,772	15.1	15.9	-0.20	-0.43	0.04
	No ACO Episodes	251,105	17.1	17.3	250,046	16.8	17.2	-0.21	-0.50	0.09
	No Caliper Comparison Group	484,082	15.6	16.2	469,652	15.4	16.2	-0.22	-0.45	0.01
	No COVID-19 Episodes	336,816	15.1	15.6	331,288	14.8	15.6	-0.27	-0.51	-0.03
	Intention to Treat	439,051	15.4	16.0	427,269	15.1	15.9	-0.21	-0.44	0.02
Medical	BPCI Advanced Impact Estimate	362,856	17.7	18.4	359,186	17.3	18.3	-0.21	-0.49	0.06
	No ACO Episodes	213,664	19.5	19.8	215,305	19.1	19.6	-0.22	-0.57	0.12
	No Caliper Comparison Group	413,483	17.7	18.4	407,174	17.4	18.3	-0.24	-0.50	0.03
	No COVID-19 Episodes	271,499	17.4	18.1	273,470	17.1	18.0	-0.29	-0.57	-0.01
	Intention to Treat	369,089	17.7	18.4	364,939	17.3	18.3	-0.23	-0.45	0.04
Hospital	BPCI Advanced Impact Estimate	295,804	17.8	18.5	310,120	17.5	18.5	-0.15	-0.45	0.13
	No ACO Episodes	171,993	19.6	20.0	186,364	19.3	19.8	-0.12	-0.48	0.25
	No Caliper Comparison Group	341,523	17.6	18.4	356,827	17.5	18.4	-0.18	-0.45	0.09
	No COVID-19 Episodes	219,408	17.5	18.2	234,149	17.3	18.1	-0.21	-0.50	0.09
	Intention to Treat	302,188	17.8	18.5	316,146	17.5	18.5	-0.17	-0.44	0.11
PGP	BPCI Advanced Impact Estimate	78,125	17.2	17.6	77,871	16.3	17.5	-0.86	-1.54	-0.18
	No ACO Episodes	47,567	19.1	18.7	45,738	18.0	18.7	-1.05	-1.84	-0.26
	No Caliper Comparison Group	84,687	18.0	18.2	88,908	16.9	18.2	-1.13	-1.83	-0.44
	No COVID-19 Episodes	60,247	17.0	17.1	60,925	16.0	17.2	-1.06	-1.74	-0.39
	Intention to Treat	78,138	17.2	17.6	77,877	16.3	17.5	-0.86	-1.54	-0.19

Clinical Episode Type	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Surgical	BPCI Advanced Impact Estimate	68,160	3.7	3.6	60,586	3.6	3.7	-0.09	-0.27	0.09
	No ACO Episodes	37,441	4.2	4.0	34,741	4.2	4.1	-0.08	-0.32	0.16
	No Caliper Comparison Group	70,599	3.7	3.7	62,478	3.7	3.8	-0.08	-0.26	0.10
	No COVID-19 Episodes	65,317	3.6	3.4	57,818	3.6	3.5	-0.11	-0.29	0.07
	Intention to Treat	69,962	3.7	3.6	62,330	3.6	3.7	-0.09	-0.26	0.08
Hospital	BPCI Advanced Impact Estimate	45,165	4.2	4.1	46,763	4.1	4.2	-0.18	-0.41	0.05
	No ACO Episodes	24,981	4.7	4.5	27,063	4.7	4.6	-0.16	-0.46	0.15
	No Caliper Comparison Group	47,052	4.3	4.2	48,169	4.2	4.3	-0.15	-0.38	0.07
	No COVID-19 Episodes	43,103	4.1	3.9	44,152	4.1	4.0	-0.20	-0.44	0.03
	Intention to Treat	46,738	4.2	4.1	47,839	4.1	4.2	-0.19	-0.41	0.03
PGP	BPCI Advanced Impact Estimate	24,364	2.4	2.5	17,497	2.5	2.5	0.15	-0.09	0.39
	No ACO Episodes	13,282	2.8	2.9	9,368	3.0	2.9	0.16	-0.20	0.52
	No Caliper Comparison Group	25,031	2.3	2.5	17,862	2.4	2.4	0.15	-0.09	0.38
	No COVID-19 Episodes	23,530	2.3	2.4	16,864	2.5	2.4	0.09	-0.14	0.32
	Intention to Treat	24,593	2.4	2.5	17,849	2.5	2.5	0.17	-0.07	0.40

*Note:* See the first page of this appendix for data sources and more information.

**B. Hospitals Individual CESLG Impact Estimates**

**Exhibit L.5: BPCI Advanced Impact Estimate and Sensitivity Test Results, Total Allowed Payments Through the 90-day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
Cardiac Care	BPCI Advanced Impact Estimate	55,990	\$24,706	\$25,051	59,252	\$24,287	\$25,214	-\$581	-\$841	-\$322
	No ACO Episodes	31,703	\$24,901	\$25,309	33,852	\$24,671	\$25,543	-\$465	-\$818	-\$111
	No Caliper Comparison Group	60,367	\$25,018	\$25,329	63,373	\$24,400	\$25,295	-\$584	-\$836	-\$331
	No COVID-19 Episodes	51,377	\$24,643	\$24,143	54,436	\$24,229	\$24,418	-\$689	-\$947	-\$431
	Intention to Treat	57,532	\$24,709	\$25,059	60,842	\$24,291	\$25,168	-\$528	-\$788	-\$267
GI Care	BPCI Advanced Impact Estimate	15,711	\$20,905	\$21,908	16,438	\$20,827	\$22,347	-\$517	-\$952	-\$82
	No ACO Episodes	8,515	\$21,217	\$22,356	9,565	\$21,239	\$22,846	-\$468	-\$1,085	\$149
	No Caliper Comparison Group	16,693	\$21,091	\$22,104	17,469	\$20,937	\$22,468	-\$517 ‡	-\$939	-\$96
	No COVID-19 Episodes	14,678	\$20,831	\$21,288	15,248	\$20,758	\$21,666	-\$451	-\$887	-\$14
	Intention to Treat	16,148	\$20,912	\$21,939	16,901	\$20,834	\$22,336	-\$475	-\$903	-\$48
Medical & Critical Care	BPCI Advanced Impact Estimate	192,679	\$25,983	\$27,837	201,665	\$25,739	\$28,260	-\$667	-\$885	-\$449
	No ACO Episodes	112,857	\$26,431	\$28,490	122,139	\$26,199	\$28,902	-\$644	-\$916	-\$371
	No Caliper Comparison Group	224,382	\$26,241	\$28,027	233,773	\$25,745	\$28,335	-\$803 ‡	-\$1,020	-\$587
	No COVID-19 Episodes	130,036	\$25,845	\$26,522	139,625	\$25,596	\$27,091	-\$818	-\$1,037	-\$599
	Intention to Treat	196,569	\$25,986	\$27,856	205,086	\$25,742	\$28,271	-\$659	-\$874	-\$445
Neurological Care	BPCI Advanced Impact Estimate	17,638	\$30,159	\$31,213	18,480	\$30,073	\$32,028	-\$901	-\$1,463	-\$340
	No ACO Episodes	10,153	\$30,356	\$31,836	11,240	\$30,422	\$32,454	-\$552	-\$1,287	\$183
	No Caliper Comparison Group	24,880	\$31,200	\$32,113	26,240	\$30,920	\$32,800	-\$966	-\$1,438	-\$494
	No COVID-19 Episodes	16,320	\$30,104	\$30,296	17,068	\$30,022	\$31,024	-\$811	-\$1,366	-\$255
	Intention to Treat	18,013	\$30,158	\$31,239	18,811	\$30,073	\$32,016	-\$862	-\$1,414	-\$309



CESLG	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
Cardiac Procedures	BPCI Advanced Impact Estimate	11,720	\$28,132	\$28,699	12,300	\$27,364	\$29,068	-\$1,138	-\$1,630	-\$645
	No ACO Episodes	6,243	\$28,254	\$28,831	7,271	\$27,645	\$29,139	-\$916	-\$1,496	-\$337
	No Caliper Comparison Group	11,842	\$28,100	\$28,629	12,486	\$27,325	\$29,004	-\$1,149	-\$1,640	-\$658
	No COVID-19 Episodes	11,255	\$28,100	\$28,308	11,764	\$27,333	\$28,637	-\$1,096	-\$1,593	-\$600
	Intention to Treat	12,552	\$28,157	\$28,687	13,031	\$27,385	\$29,024	-\$1,109	-\$1,585	-\$634
GI Surgery*	BPCI Advanced Impact Estimate	2,352	\$36,494	\$36,887	2,253	\$36,503	\$36,843	\$53	-\$1,159	\$1,266
	No ACO Episodes	1,380	\$37,558	\$37,588	1,318	\$37,462	\$38,198	-\$706	-\$2,338	\$925
	No Caliper Comparison Group	2,352	\$36,494	\$36,887	2,253	\$36,503	\$36,843	\$53	-\$1,159	\$1,266
	No COVID-19 Episodes	2,244	\$36,410	\$36,276	2,141	\$36,417	\$36,269	\$15	-\$1,213	\$1,242
	Intention to Treat	2,554	\$36,498	\$36,827	2,406	\$36,510	\$36,874	-\$36	-\$1,182	\$1,110
Orthopedics	BPCI Advanced Impact	24,596	\$33,181	\$31,428	25,877	\$32,169	\$32,420	-\$2,005	-\$2,634	-\$1,376
	No ACO Episodes	13,864	\$33,703	\$32,053	14,947	\$32,728	\$32,983	-\$1,905	-\$2,720	-\$1,091
	No Caliper Comparison Group	25,709	\$33,714	\$31,898	27,009	\$32,586	\$32,830	-\$2,060	-\$2,675	-\$1,445
	No COVID-19 Episodes	23,335	\$33,085	\$30,908	24,468	\$32,067	\$31,761	-\$1,871	-\$2,465	-\$1,278
	Intention to Treat	24,865	\$33,207	\$31,493	26,269	\$32,194	\$32,433	-\$1,953	-\$2,579	-\$1,328
Spinal Procedures	BPCI Advanced Impact	9,444	\$35,949	\$35,125	8,695	\$35,874	\$37,397	-\$2,346	-\$3,634	-\$1,059
	No ACO Episodes	5,135	\$36,247	\$35,340	4,976	\$36,089	\$37,621	-\$2,440	-\$3,920	-\$959
	No Caliper Comparison Group	10,142	\$36,834	\$35,835	9,181	\$36,767	\$37,910	-\$2,142	-\$3,460	-\$824
	No COVID-19 Episodes	9,146	\$35,888	\$34,746	8,448	\$35,811	\$37,040	-\$2,371	-\$3,630	-\$1,112
	Intention to Treat	9,897	\$35,936	\$35,110	9,050	\$35,861	\$37,437	-\$2,402	-\$3,637	-\$1,167

**Note:** See the first page of this appendix for data sources and more information. \*The no caliper and selected caliper option was equivalent for the *gastrointestinal surgery* CESLG.

**Exhibit L.6: BPCI Advanced Impact Estimate and Sensitivity Test Results, Readmission Rate Through the 90-day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Care	BPCI Advanced Impact Estimate	55,142	36.0	34.4	58,560	35.4	33.8	-0.03 ‡	-0.59	0.53
	No ACO Episodes	31,168	36.0	34.6	33,387	35.6	33.9	0.35 ‡	-0.33	1.03
	No Caliper Comparison Group	59,419	36.3	34.8	62,638	35.5	33.9	0.06 ‡	-0.47	0.60
	No COVID-19 Episodes	50,600	35.9	32.8	53,790	35.3	32.4	-0.22 ‡	-0.78	0.35
	Intention to Treat	56,672	36.0	34.4	60,137	35.4	33.7	0.07 ‡	-0.49	0.63
GI Care	BPCI Advanced Impact Estimate	15,506	29.5	28.2	16,239	29.7	28.5	-0.16	-1.11	0.79
	No ACO Episodes	8,383	29.4	28.5	9,431	29.8	28.9	-0.02	-1.22	1.18
	No Caliper Comparison Group	16,461	29.6	28.2	17,264	29.8	28.6	-0.16	-1.08	0.76
	No COVID-19 Episodes	14,487	29.5	27.0	15,069	29.6	27.5	-0.41	-1.36	0.54
	Intention to Treat	15,937	29.5	28.2	16,699	29.7	28.5	-0.12	-1.05	0.81
Medical & Critical Care	BPCI Advanced Impact Estimate	190,411	30.6	30.7	199,654	30.2	29.9	0.39	0.07	0.70
	No ACO Episodes	111,332	30.8	30.7	120,778	30.4	30.1	0.27	-0.12	0.67
	No Caliper Comparison Group	221,636	30.9	30.9	231,495	30.4	30.1	0.31	0.01	0.61
	No COVID-19 Episodes	128,458	30.9	29.2	138,192	30.6	28.6	0.27	-0.08	0.62
	Intention to Treat	194,266	30.6	30.7	203,031	30.2	30.0	0.35	0.04	0.67
Neurological Care	BPCI Advanced Impact Estimate	17,436	24.6	24.8	18,274	24.4	24.0	0.52	-0.34	1.39
	No ACO Episodes	10,026	24.6	24.5	11,088	24.6	23.9	0.58	-0.45	1.62
	No Caliper Comparison Group	24,607	24.8	24.5	25,967	24.2	24.0	-0.01	-0.74	0.73
	No COVID-19 Episodes	16,137	24.6	23.5	16,874	24.3	22.8	0.42	-0.49	1.33
	Intention to Treat	17,810	24.6	24.9	18,604	24.4	24.0	0.71	-0.13	1.56
Cardiac Procedures	BPCI Advanced Impact Estimate	11,690	18.2	16.3	12,279	17.4	16.4	-0.77	-1.70	0.15
	No ACO Episodes	6,224	18.1	16.6	7,261	17.5	16.0	0.02	-1.14	1.19
	No Caliper Comparison Group	11,812	18.2	16.3	12,465	17.4	16.3	-0.83	-1.75	0.09
	No COVID-19 Episodes	11,226	18.1	15.5	11,745	17.4	15.6	-0.88	-1.82	0.06
	Intention to Treat	12,520	18.2	16.2	13,010	17.4	16.3	-0.79	-1.69	0.10

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
GI Surgery*	BPCI Advanced Impact Estimate	2,349	25.8	24.2	2,247	24.9	22.2	1.13	-1.20	3.46
	No ACO Episodes	1,378	26.3	22.8	1,313	25.0	22.8	-1.45	-4.57	1.67
	No Caliper Comparison Group	2,349	25.8	24.2	2,247	24.9	22.2	1.13	-1.20	3.46
	No COVID-19 Episodes	2,241	25.7	23.6	2,136	24.8	21.0	1.61	-0.64	3.87
	Intention to Treat	2,551	25.8	24.1	2,400	24.9	22.2	1.02	-1.19	3.22
Orthopedics	BPCI Advanced Impact	24,584	13.8	13.0	25,863	12.8	12.1	-0.14	-0.78	0.51
	No ACO Episodes	13,853	14.1	13.1	14,942	13.2	12.1	0.02	-0.78	0.83
	No Caliper Comparison Group	25,697	14.1	13.2	26,994	13.2	12.4	-0.15	-0.78	0.47
	No COVID-19 Episodes	23,323	13.7	12.3	24,455	12.8	11.3	-0.05	-0.74	0.64
	Intention to Treat	24,853	13.8	13.0	26,254	12.8	12.1	-0.07	-0.71	0.56
Spinal Procedures	BPCI Advanced Impact	9,442	13.0	11.5	8,692	12.2	11.8	-1.10	-2.08	-0.12
	No ACO Episodes	5,134	13.4	11.9	4,974	12.3	11.5	-0.70	-2.03	0.63
	No Caliper Comparison Group	10,139	13.1	11.6	9,177	12.3	12.0	-1.18	-2.11	-0.24
	No COVID-19 Episodes	9,144	13.0	10.9	8,445	12.2	11.4	-1.32	-2.26	-0.38
	Intention to Treat	9,894	13.0	11.6	9,047	12.2	11.8	-1.00	-1.97	-0.03

**Note:** See the first page of this appendix for data sources and more information. \*The no caliper and selected caliper option was equivalent for the *gastrointestinal surgery* CESLG.

**Exhibit L.7: BPCI Advanced Impact Estimate and Sensitivity Test Results, Mortality Rate During the Anchor Stay and the 90-day PDP, CESLGs, Hospitals, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Care	BPCI Advanced Impact Estimate	55,895	15.6	14.9	59,497	15.8	15.2	-0.13	-0.55	0.30
	No ACO Episodes	31,600	16.9	15.8	33,921	17.1	15.8	0.15	-0.40	0.71
	No Caliper Comparison Group	60,208	15.6	15.0	63,620	15.8	15.3	-0.12	-0.53	0.29
	No COVID-19 Episodes	51,343	15.5	14.7	54,692	15.7	15.0	-0.14	-0.58	0.29
	Intention to Treat	57,440	15.6	14.9	61,111	15.8	15.3	-0.17	-0.59	0.26
GI Care	BPCI Advanced Impact Estimate	15,689	11.2	10.9	16,445	11.0	11.0	-0.23	-0.84	0.38
	No ACO Episodes	8,489	12.4	11.9	9,550	12.0	11.9	-0.42	-1.28	0.44
	No Caliper Comparison Group	16,653	11.2	10.8	17,490	11.1	11.0	-0.29	-0.89	0.31
	No COVID-19 Episodes	14,661	11.1	10.6	15,270	11.0	10.8	-0.26	-0.91	0.39
	Intention to Treat	16,129	11.2	11.0	16,916	11.1	10.9	-0.11	-0.72	0.49
Medical & Critical Care	BPCI Advanced Impact Estimate	205,868	18.9	20.3	214,941	18.5	20.1	-0.19	-0.52	0.13
	No ACO Episodes	121,313	20.9	22.0	131,151	20.4	21.6	-0.17	-0.58	0.25
	No Caliper Comparison Group	238,582	18.5	19.8	248,284	18.2	19.7	-0.24	-0.55	0.07
	No COVID-19 Episodes	136,378	18.7	20.1	146,383	18.2	19.8	-0.23	-0.57	0.11
	Intention to Treat	209,880	18.9	20.3	218,531	18.5	20.1	-0.21	-0.53	0.12
Neurological Care	BPCI Advanced Impact Estimate	18,352	18.1	18.3	19,237	17.7	18.0	-0.11	-0.89	0.66
	No ACO Episodes	10,591	19.9	19.4	11,742	19.5	19.3	-0.34	-1.35	0.68
	No Caliper Comparison Group	26,080	18.6	19.0	27,433	18.6	18.8	0.09	-0.60	0.79
	No COVID-19 Episodes	17,026	18.0	18.4	17,804	17.7	18.1	-0.04	-0.85	0.76
	Intention to Treat	18,739	18.1	18.3	19,588	17.7	18.1	-0.19	-0.96	0.59

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Procedures	BPCI Advanced Impact Estimate	11,771	3.2	3.2	12,368	3.2	3.5	-0.26	-0.70	0.19
	No ACO Episodes	6,275	3.6	3.4	7,318	3.6	3.7	-0.19	-0.73	0.36
	No Caliper Comparison Group	11,894	3.2	3.2	12,556	3.2	3.5	-0.26	-0.71	0.18
	No COVID-19 Episodes	11,309	3.2	3.0	11,834	3.2	3.3	-0.19	-0.64	0.26
	Intention to Treat	12,605	3.2	3.2	13,102	3.2	3.4	-0.22	-0.66	0.21
GI Surgery	BPCI Advanced Impact Estimate	2,396	8.7	7.2	2,307	8.5	7.9	-0.85 ‡	-2.16	0.45
	No ACO Episodes	1,414	10.4	8.0	1,357	9.9	8.8	-1.25	-2.77	0.27
	No Caliper Comparison Group	2,396	8.7	7.2	2,307	8.5	7.9	-0.85 ‡	-2.16	0.45
	No COVID-19 Episodes	2,285	8.6	7.0	2,192	8.5	7.7	-0.98 ‡	-2.36	0.41
	Intention to Treat	2,601	8.7	7.1	2,466	8.5	8.0	-1.11 ‡	-2.39	0.16
Orthopedics	BPCI Advanced Impact	24,497	4.9	4.8	25,754	4.9	5.0	-0.26	-0.58	0.06
	No ACO Episodes	13,756	5.6	5.3	14,865	5.6	5.6	-0.25	-0.71	0.20
	No Caliper Comparison Group	25,592	5.1	5.1	26,875	5.1	5.2	-0.22	-0.54	0.11
	No COVID-19 Episodes	23,243	4.9	4.6	24,367	4.8	4.8	-0.27	-0.60	0.07
	Intention to Treat	24,762	5.0	4.9	26,138	4.9	5.1	-0.26	-0.58	0.05
Spinal Procedures	BPCI Advanced Impact	6,501	1.3	1.6	5,949	1.4	1.3	0.44	0.13	0.75
	No ACO Episodes	3,536	1.4	1.8	3,523	1.6	1.4	0.62	0.19	1.04
	No Caliper Comparison Group	7,170	1.3	1.6	6,431	1.4	1.3	0.40	0.10	0.70
	No COVID-19 Episodes	6,266	1.3	1.4	5,759	1.4	1.3	0.29	-0.01	0.59
	Intention to Treat	6,770	1.3	1.6	6,133	1.4	1.3	0.39	0.08	0.70

**Note:** See the first page of this appendix for data sources and more information. \*The no caliper and selected caliper option was equivalent for the *gastrointestinal surgery* CESLG.

**C. PGP Individual CESLG Impact Estimates**

**Exhibit L.8: BPCI Advanced Impact Estimate and Sensitivity Test Results, Total Allowed Payments Through the 90-day PDP, CESLGs, PGPs, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
Cardiac Care	BPCI Advanced Impact Estimate	16,878	\$24,503	\$24,900	19,264	\$23,748	\$24,587	-\$442	-\$926	\$42
	No ACO Episodes	9,839	\$24,674	\$24,975	10,155	\$24,024	\$24,976	-\$650	-\$1,268	-\$32
	No Caliper Comparison Group	16,878	\$24,503	\$24,900	19,264	\$23,748	\$24,587	-\$442	-\$926	\$42
	No COVID-19 Episodes	15,642	\$24,449	\$24,197	17,826	\$23,699	\$23,846	-\$399	-\$889	\$91
	Intention to Treat	16,878	\$24,503	\$24,900	19,264	\$23,748	\$24,587	-\$442	-\$926	\$42
GI Care	BPCI Advanced Impact Estimate	5,961	\$20,068	\$21,504	5,817	\$19,901	\$21,146	\$191	-\$372	\$755
	No ACO Episodes	3,389	\$20,296	\$21,828	3,010	\$20,206	\$21,550	\$189	-\$593	\$970
	No Caliper Comparison Group	5,961	\$20,068	\$21,504	5,817	\$19,901	\$21,146	\$191	-\$372	\$755
	No COVID-19 Episodes	5,560	\$19,994	\$20,857	5,465	\$19,823	\$20,608	\$77	-\$528	\$683
	Intention to Treat	5,961	\$20,068	\$21,504	5,817	\$19,901	\$21,146	\$191	-\$372	\$755
Medical & Critical Care	BPCI Advanced Impact Estimate	45,959	\$25,028	\$26,886	44,064	\$24,147	\$26,998	-\$993	-\$1,485	-\$501
	No ACO Episodes	28,437	\$25,489	\$27,309	27,048	\$24,445	\$27,346	-\$1,080	-\$1,666	-\$494
	No Caliper Comparison Group	51,947	\$25,590	\$27,494	53,876	\$24,661	\$27,709	-\$1,144	-\$1,664	-\$624
	No COVID-19 Episodes	31,801	\$24,869	\$25,722	30,655	\$23,987	\$25,949	-\$1,108	-\$1,597	-\$619
	Intention to Treat	45,973	\$25,028	\$26,884	44,069	\$24,147	\$27,001	-\$998	-\$1,489	-\$506
Neurological Care	BPCI Advanced Impact Estimate	6,401	\$31,227	\$32,421	5,877	\$30,884	\$33,134	-\$1,056	-\$2,086	-\$27
	No ACO Episodes	4,056	\$31,656	\$32,920	3,726	\$31,063	\$33,182	-\$855	-\$1,972	\$261
	No Caliper Comparison Group	6,439	\$31,140	\$32,351	5,936	\$30,830	\$33,073	-\$1,031	-\$2,055	-\$7
	No COVID-19 Episodes	5,913	\$31,182	\$31,418	5,453	\$30,841	\$32,274	-\$1,197	-\$2,176	-\$217
	Intention to Treat	6,401	\$31,227	\$32,421	5,877	\$30,884	\$33,134	-\$1,056	-\$2,086	-\$27

CESLG	Result	BPCI Advanced			Comparison			DiD	90% LCI	90% UCI
		MY4 Episodes (N)	Baseline	MY4	MY4 Episodes (N)	Baseline	MY4			
Cardiac Procedures	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
GI Surgery	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
	Intention to Treat									
Orthopedics	BPCI Advanced Impact Estimate	22,269	\$26,830	\$24,518	15,937	\$26,493	\$26,210	-\$2,029	-\$2,598	-\$1,461
	No ACO Episodes	12,244	\$27,348	\$25,041	8,534	\$27,078	\$26,928	-\$2,156	-\$2,809	-\$1,503
	No Caliper Comparison Group	22,431	\$26,790	\$24,522	16,155	\$26,465	\$26,212	-\$2,016	-\$2,591	-\$1,441
	No COVID-19 Episodes	21,481	\$26,772	\$24,188	15,353	\$26,430	\$25,860	-\$2,015	-\$2,551	-\$1,478
	Intention to Treat	22,379	\$26,834	\$24,512	16,090	\$26,496	\$26,205	-\$2,031	-\$2,597	-\$1,465
Spinal Procedures	BPCI Advanced Impact Estimate	5,155	\$32,379	\$30,590	4,421	\$32,620	\$32,784	-\$1,954	-\$3,648	-\$261
	No ACO Episodes	2,663	\$32,721	\$31,144	2,343	\$33,040	\$32,940	-\$1,477	-\$3,440	\$486
	No Caliper Comparison Group	5,822	\$33,452	\$31,786	4,785	\$34,581	\$34,398	-\$1,482	-\$3,174	\$210
	No COVID-19 Episodes	5,026	\$32,335	\$30,267	4,303	\$32,582	\$32,495	-\$1,981	-\$3,619	-\$342
	Intention to Treat	5,314	\$32,494	\$30,786	4,635	\$32,738	\$32,799	-\$1,769	-\$3,474	-\$65

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit L.9: BPCI Advanced Impact Estimate and Sensitivity Test Results, Readmission Rate Through the 90-day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Care	BPCI Advanced Impact Estimate	16,705	34.6	33.4	19,093	34.1	32.7	0.11	-1.03	1.25
	No ACO Episodes	9,725	34.9	32.4	10,039	34.0	32.6	-1.04	-2.42	0.34
	No Caliper Comparison Group	16,705	34.6	33.4	19,093	34.1	32.7	0.11	-1.03	1.25
	No COVID-19 Episodes	15,482	34.6	32.2	17,664	34.0	31.5	0.19	-0.97	1.36
	Intention to Treat	16,705	34.6	33.4	19,093	34.1	32.7	0.11	-1.03	1.25
GI Care	BPCI Advanced Impact Estimate	5,880	27.0	26.8	5,762	27.3	26.9	0.22	-1.31	1.75
	No ACO Episodes	3,335	26.7	26.7	2,967	27.0	26.1	0.84	-1.08	2.75
	No Caliper Comparison Group	5,880	27.0	26.8	5,762	27.3	26.9	0.22	-1.31	1.75
	No COVID-19 Episodes	5,482	27.0	25.7	5,416	27.3	26.0	-0.04	-1.59	1.51
	Intention to Treat	5,880	27.0	26.8	5,762	27.3	26.9	0.22	-1.31	1.75
Medical & Critical Care	BPCI Advanced Impact Estimate	45,455	29.0	29.1	43,651	29.0	28.8	0.36	-0.31	1.03
	No ACO Episodes	28,081	29.1	28.8	26,758	29.0	28.6	0.19	-0.68	1.05
	No Caliper Comparison Group	51,390	28.7	28.9	53,387	28.7	28.8	0.14	-0.47	0.75
	No COVID-19 Episodes	31,442	29.3	27.7	30,344	29.3	27.8	-0.06	-0.72	0.60
	Intention to Treat	45,468	29.0	29.1	43,656	29.0	28.8	0.35	-0.32	1.02
Neurological Care	BPCI Advanced Impact Estimate	6,339	23.4	24.1	5,841	23.1	23.8	0.07	-1.34	1.48
	No ACO Episodes	4,007	23.4	24.0	3,699	23.2	22.9	0.86	-0.87	2.60
	No Caliper Comparison Group	6,377	23.4	24.1	5,899	23.1	23.7	0.16	-1.25	1.58
	No COVID-19 Episodes	5,853	23.4	22.7	5,421	23.1	22.6	-0.17	-1.62	1.28
	Intention to Treat	6,339	23.4	24.1	5,841	23.1	23.8	0.07	-1.34	1.48



CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Procedures	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
	Intention to Treat									
GI Surgery	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
	Intention to Treat									
Orthopedics	BPCI Advanced Impact Estimate	22,263	9.8	9.4	15,934	9.1	8.5	0.13	-0.59	0.85
	No ACO Episodes	12,238	10.1	9.7	8,532	9.5	8.5	0.55	-0.33	1.42
	No Caliper Comparison Group	22,425	9.8	9.4	16,152	9.1	8.9	-0.18	-0.99	0.64
	No COVID-19 Episodes	21,475	9.8	8.9	15,351	9.1	8.0	0.18	-0.56	0.91
	Intention to Treat	22,373	9.8	9.4	16,087	9.1	8.5	0.13	-0.59	0.84
Spinal Procedures	BPCI Advanced Impact Estimate	5,152	10.5	10.4	4,421	11.2	9.9	1.28	-0.19	2.76
	No ACO Episodes	2,661	10.5	10.6	2,341	11.3	9.3	2.11	0.10	4.12
	No Caliper Comparison Group	5,816	11.0	10.8	4,785	11.5	10.3	0.97	-0.45	2.40
	No COVID-19 Episodes	5,023	10.5	9.9	4,303	11.2	9.4	1.19	-0.18	2.55
	Intention to Treat	5,311	10.5	10.4	4,635	11.2	9.9	1.25	-0.21	2.70

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit L.10: BPCI Advanced Impact Estimate and Sensitivity Test Results, Mortality Rate During the Anchor Stay and the 90-day PDP, CESLGs, PGP, January 1, 2021 – December 31, 2021**

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Care	BPCI Advanced Impact Estimate	16,929	16.3	16.0	19,349	16.4	16.2	-0.10	-1.05	0.85
	No ACO Episodes	9,848	17.8	16.7	10,172	18.0	17.1	-0.10	-1.20	1.01
	No Caliper Comparison Group	16,929	16.3	16.0	19,349	16.4	16.2	-0.10	-1.05	0.85
	No COVID-19 Episodes	15,698	16.3	15.8	17,917	16.4	16.0	-0.12	-1.10	0.86
	Intention to Treat	16,929	16.3	16.0	19,349	16.4	16.2	-0.10	-1.05	0.85
GI Care	BPCI Advanced Impact Estimate	5,914	10.2	9.7	5,835	9.9	10.4	-1.08	-2.05	-0.12
	No ACO Episodes	3,352	11.1	10.3	3,016	10.9	11.3	-1.13	-2.32	0.06
	No Caliper Comparison Group	5,914	10.2	9.7	5,835	9.9	10.4	-1.08	-2.05	-0.12
	No COVID-19 Episodes	5,517	10.2	9.5	5,486	9.9	10.0	-0.76	-1.75	0.23
	Intention to Treat	5,914	10.2	9.7	5,835	9.9	10.4	-1.08	-2.05	-0.12
Medical & Critical Care	BPCI Advanced Impact Estimate	48,704	18.2	19.1	46,495	16.7	18.8	-1.25	-2.12	-0.39
	No ACO Episodes	30,213	20.3	20.5	28,622	18.4	20.1	-1.49	-2.50	-0.48
	No Caliper Comparison Group	55,229	19.3	19.9	57,478	17.6	19.7	-1.56	-2.42	-0.69
	No COVID-19 Episodes	32,961	17.9	18.6	31,767	16.4	18.5	-1.49	-2.34	-0.64
	Intention to Treat	48,717	18.2	19.1	46,501	16.7	18.8	-1.26	-2.12	-0.40
Neurological Care	BPCI Advanced Impact Estimate	6,578	18.1	17.8	6,192	19.0	19.9	-1.32	-2.74	0.11
	No ACO Episodes	4,154	19.9	18.7	3,928	20.7	20.6	-1.08	-2.63	0.48
	No Caliper Comparison Group	6,615	18.1	17.7	6,246	18.9	19.9	-1.34	-2.75	0.08
	No COVID-19 Episodes	6,071	18.1	17.5	5,755	18.9	20.0	-1.71	-3.21	-0.22
	Intention to Treat	6,578	18.1	17.8	6,192	19.0	19.9	-1.32	-2.74	0.11

CESLG	Result	BPCI Advanced			Comparison			DiD (pp)	90% LCI (pp)	90% UCI (pp)
		MY4 Episodes (N)	Baseline (%)	MY4 (%)	MY4 Episodes (N)	Baseline (%)	MY4 (%)			
Cardiac Procedures	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
	Intention to Treat									
GI Surgery	BPCI Advanced Impact Estimate									
	No ACO Episodes									
	No Caliper Comparison Group									
	No COVID-19 Episodes									
	Intention to Treat									
Orthopedics	BPCI Advanced Impact Estimate	21,084	2.6	2.8	14,828	2.7	2.7	0.19	-0.08	0.45
	No ACO Episodes	11,591	3.1	3.2	7,921	3.3	3.2	0.25	-0.15	0.66
	No Caliper Comparison Group	21,084	2.6	2.8	14,828	2.7	2.7	0.19	-0.08	0.45
	No COVID-19 Episodes	20,338	2.6	2.6	14,272	2.7	2.6	0.13	-0.12	0.39
	Intention to Treat	21,191	2.6	2.8	14,971	2.7	2.7	0.20	-0.06	0.46
Spinal Procedures	BPCI Advanced Impact Estimate	3,280	0.7	0.7	2,669	0.8	1.1	-0.31	-0.73	0.12
	No ACO Episodes	1,651	0.9	0.6	1,399	0.9	1.4	-0.78	-1.27	-0.29
	No Caliper Comparison Group	3,947	0.8	0.9	3,034	0.8	1.1	-0.27	-0.63	0.09
	No COVID-19 Episodes	3,192	0.7	0.5	2,592	0.8	0.9	-0.36	-0.73	0.00
	Intention to Treat	3,402	0.7	0.7	2,878	0.8	1.1	-0.26	-0.66	0.13

**Note:** See the first page of this appendix for data sources and more information.

## Appendix M: Tables of Results from Beneficiary Survey

The following tables display the results for respondents to the beneficiary survey, which provides information regarding self-reported changes in functional status, care experiences, and satisfaction for beneficiaries with episodes in Model Year 4 (2021) and Model Year 5 (2022). Results are presented for Model Year 5 separately and pooled across Model Years 4 and 5.<sup>1</sup> The estimates are the result of cross-sectional logistic regression models for binary or trinary indicators, controlling for beneficiary, hospital, and neighborhood characteristics. All responses were weighted for non-response and sampling design. Results are reported in percentage point terms. The tables below show estimates pooled across all 34 clinical episodes for hospitals, including separate estimates for medical and surgical clinical episodes, as well as pooled across all 34 clinical episodes for PGPs, including separate estimates for medical and surgical episodes. Subsequent tables show results by CESLG for hospitals and PGPs for CESLGs with a minimum detectable difference of 10.0 or less.

We also present results for survey respondents from populations that have been historically underserved, including respondents who were Black or African American, Hispanic and respondents who had dual Medicare-Medicaid eligibility. However, for Wave 3 results there was not a sufficient sample size to run the analysis on Hispanic beneficiaries. The race and ethnicity data come from the RTI race codes from the MBSF.

In the tables below, we display the lower and upper 90% and 95% confidence intervals. We also report p-values to indicate joint significance for measures with multiple outcomes. All results are based on the BPCI Advanced evaluation team’s analysis of BPCI Advanced and comparison beneficiary survey responses for episodes that began July or August 2021 and 2022.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

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<sup>1</sup> Results for the beneficiary survey from Model Year 4 are presented in the BPCI Advanced Fourth Evaluation Report, available for download at <https://www.cms.gov/priorities/innovation/innovation-models/bpci-advanced>.

**Exhibit M.1: Beneficiary Survey Sample Sizes, Waves 2 and 3 (July-August 2021; July-August 2022)**

Analytic Sample		BPCI Advanced Respondents (N)	Comparison Respondents (N)
Hospital	All Hospital Episodes	7,579	7,910
	All Medical CESLGs	4,849	5,044
	All Surgical CESLGs	2,730	2,866
	Cardiac Care	1,419	1,446
	Cardiac Procedures	761	804
	Gastrointestinal Care	744	832
	Medical and Critical Care	1,987	2,072
	Neurological Care	699	694
	Orthopedics	1,100	1,190
	Spinal Procedures	766	791
PGP	All PGP Episodes	3,767	3,594
	All Medical CESLGs	2,303	2,169
	All Surgical CESLGs	1,464	1,425
	Cardiac Care	635	612
	Medical and Critical Care	1,272	1,176
	Orthopedics	967	946
	Spinal Procedures	374	362

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit M.2: Beneficiary Survey Outcomes for Hospitals, Pooled Across all Episodes, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	59.7	59.5	0.21	-1.79	2.21	-1.46	1.89	0.958
		Maintained	14.9	14.8	0.09	-1.55	1.73	-1.28	1.46	
		Declined	25.4	25.7	-0.30	-2.32	1.71	-1.99	1.39	
	Planning regular tasks	Improvement	59.6	61.0	-1.41	-3.40	0.58	-3.08	0.26	0.379
		Maintained	13.1	12.6	0.56	-1.01	2.13	-0.76	1.87	
		Declined	27.2	26.4	0.86	-1.00	2.71	-0.70	2.41	
	Use of mobility device	Improvement	38.9	39.4	-0.42	-2.29	1.46	-1.99	1.15	0.734
		Maintained	13.5	13.0	0.57	-0.90	2.04	-0.67	1.80	
		Declined	47.5	47.7	-0.15	-2.16	1.86	-1.83	1.54	
	Walking without rest	Improvement	32.0	32.6	-0.55	-2.57	1.46	-2.24	1.13	0.848
		Maintained	23.3	23.2	0.07	-1.76	1.89	-1.46	1.60	
		Declined	44.7	44.2	0.49	-1.52	2.50	-1.20	2.17	
	Going up or down stairs	Improvement	30.6	32.6	-1.92	-3.90	0.05	-3.58	-0.26	0.161
		Maintained	24.8	24.0	0.76	-1.17	2.69	-0.86	2.38	
		Declined	44.6	43.4	1.16	-0.85	3.18	-0.53	2.85	
	Physical/emotional problems limiting social activities	Improvement	46.6	48.0	-1.38	-3.86	1.10	-3.46	0.70	0.537
		Maintained	22.8	22.4	0.36	-1.90	2.63	-1.54	2.26	
		Declined	30.6	29.6	1.02	-1.42	3.45	-1.02	3.05	
	Pain limiting regular activities	Improvement	43.6	44.7	-1.03	-3.56	1.51	-3.15	1.10	0.634
		Maintained	29.4	28.4	1.03	-1.33	3.38	-0.95	3.00	
		Declined	27.0	27.0	0.00	-2.45	2.46	-2.06	2.06	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.4	90.2	-0.79	-2.51	0.93	-2.23	0.66	0.370
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	84.2	86.5	-2.29	-4.39	-0.19	-4.05	-0.53	0.032
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.5	89.2	-0.69	-2.50	1.13	-2.21	0.83	0.458
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	88.8	89.0	-0.22	-2.03	1.59	-1.73	1.30	0.814
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	88.9	89.7	-0.75	-2.64	1.13	-2.34	0.83	0.434
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.5	93.0	0.48	-1.02	1.99	-0.78	1.75	0.530
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	84.6	87.0	-2.37	-4.42	-0.32	-4.09	-0.65	0.024
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.8	71.0	-0.14	-3.38	3.10	-2.86	2.58	0.932
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	57.0	57.6	-0.66	-3.06	1.74	-2.67	1.36	0.591
	Rating of all care received after leaving the hospital	9-10	54.5	57.2	-2.77	-5.47	-0.08	-5.04	-0.51	0.057
		7-8	25.0	24.8	0.25	-2.07	2.57	-1.70	2.20	
0-6		20.5	18.0	2.52	0.28	4.77	0.64	4.40		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.3: Beneficiary Survey Outcomes for Hospitals, Medical Episodes, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	57.7	57.2	0.48	-1.75	2.70	-1.39	2.34	0.879
		Maintained	15.7	15.6	0.09	-1.75	1.94	-1.46	1.64	
		Declined	26.5	27.1	-0.57	-2.84	1.70	-2.47	1.33	
	Planning regular tasks	Improvement	57.2	58.3	-1.15	-3.40	1.10	-3.04	0.74	0.602
		Maintained	13.9	13.4	0.51	-1.26	2.29	-0.98	2.00	
		Declined	28.9	28.3	0.64	-1.47	2.74	-1.13	2.40	
	Use of mobility device	Improvement	37.1	37.6	-0.55	-2.68	1.58	-2.34	1.23	0.680
		Maintained	13.8	13.1	0.71	-0.95	2.37	-0.68	2.10	
		Declined	49.1	49.3	-0.16	-2.42	2.11	-2.06	1.74	
	Walking without rest	Improvement	29.3	29.8	-0.45	-2.71	1.81	-2.34	1.45	0.898
		Maintained	24.0	24.1	-0.06	-2.10	1.98	-1.77	1.65	
		Declined	46.6	46.1	0.51	-1.77	2.79	-1.40	2.42	
	Going up or down stairs	Improvement	28.2	30.3	-2.14	-4.35	0.07	-3.99	-0.29	0.165
		Maintained	25.2	24.2	0.98	-1.19	3.16	-0.84	2.81	
		Declined	46.6	45.5	1.16	-1.12	3.43	-0.75	3.06	
	Physical/emotional problems limiting social activities	Improvement	44.9	46.2	-1.31	-4.14	1.51	-3.69	1.06	0.631
		Maintained	23.5	23.2	0.23	-2.33	2.79	-1.91	2.37	
		Declined	31.7	30.6	1.09	-1.67	3.84	-1.23	3.40	
Pain limiting regular activities	Improvement	41.3	42.5	-1.18	-4.04	1.69	-3.58	1.23	0.650	
	Maintained	30.8	29.7	1.08	-1.57	3.74	-1.14	3.31		
	Declined	27.8	27.7	0.09	-2.70	2.89	-2.25	2.44		



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.0	89.8	-0.83	-2.78	1.13	-2.47	0.82	0.408
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	83.2	85.8	-2.56	-4.93	-0.18	-4.55	-0.56	0.035
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	87.9	88.6	-0.68	-2.76	1.40	-2.42	1.06	0.521
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	88.2	88.3	-0.11	-2.17	1.95	-1.84	1.62	0.917
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	88.3	89.1	-0.77	-2.94	1.39	-2.59	1.04	0.484
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.1	92.4	0.73	-0.99	2.45	-0.72	2.17	0.407
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	83.6	86.3	-2.64	-5.00	-0.28	-4.62	-0.66	0.028
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	69.9	70.4	-0.57	-4.16	3.02	-3.58	2.44	0.756
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	55.4	55.8	-0.40	-3.15	2.34	-2.70	1.90	0.774
	Rating of all care received after leaving the hospital	9-10	52.9	55.6	-2.78	-5.82	0.27	-5.33	-0.22	0.070
		7-8	25.5	25.6	-0.08	-2.70	2.53	-2.28	2.11	
0-6		21.6	18.7	2.86	0.33	5.39	0.74	4.98		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.4: Beneficiary Survey Outcomes for Hospitals, Surgical Episodes, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	73.6	75.2	-1.57	-3.82	0.68	-3.45	0.31	0.364
		Maintained	8.8	8.5	0.24	-1.35	1.83	-1.09	1.57	
		Declined	17.6	16.3	1.33	-0.73	3.39	-0.40	3.06	
	Planning regular tasks	Improvement	76.4	79.7	-3.30	-5.47	-1.13	-5.12	-1.48	0.008
		Maintained	8.1	7.3	0.88	-0.73	2.49	-0.47	2.23	
		Declined	15.4	13.0	2.42	0.64	4.20	0.93	3.92	
	Use of mobility device	Improvement	52.0	51.2	0.85	-1.70	3.40	-1.29	2.99	0.774
		Maintained	11.5	12.0	-0.46	-2.22	1.30	-1.94	1.01	
		Declined	36.5	36.9	-0.39	-2.87	2.10	-2.47	1.70	
	Walking without rest	Improvement	50.7	51.8	-1.11	-3.76	1.54	-3.33	1.11	0.576
		Maintained	18.2	17.0	1.21	-1.16	3.58	-0.78	3.20	
		Declined	31.0	31.1	-0.10	-2.48	2.28	-2.09	1.90	
	Going up or down stairs	Improvement	47.6	47.6	0.00	-2.84	2.84	-2.38	2.38	0.767
		Maintained	22.1	22.9	-0.78	-3.22	1.67	-2.83	1.27	
		Declined	30.3	29.5	0.78	-1.84	3.40	-1.42	2.98	
	Physical/emotional problems limiting social activities	Improvement	58.7	60.6	-1.88	-4.65	0.88	-4.20	0.43	0.348
		Maintained	18.2	16.8	1.35	-0.97	3.67	-0.59	3.30	
		Declined	23.1	22.5	0.53	-2.09	3.15	-1.67	2.72	
	Pain limiting regular activities	Improvement	59.6	59.5	0.06	-2.84	2.96	-2.37	2.50	0.824
		Maintained	19.4	18.8	0.60	-1.78	2.98	-1.39	2.60	
		Declined	21.0	21.7	-0.67	-3.22	1.89	-2.81	1.47	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.9	92.4	-0.49	-1.93	0.94	-1.69	0.71	0.501
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.1	91.4	-0.31	-2.29	1.67	-1.97	1.35	0.756
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	92.2	92.7	-0.47	-2.12	1.18	-1.86	0.92	0.576
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.1	94.0	-0.83	-2.43	0.77	-2.18	0.51	0.307
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	92.9	93.4	-0.41	-2.17	1.34	-1.89	1.06	0.645
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.9	97.0	-1.05	-2.13	0.02	-1.95	-0.15	0.055
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	90.7	91.3	-0.53	-2.58	1.51	-2.25	1.18	0.610
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	77.7	74.5	3.18	-0.83	7.19	-0.18	6.54	0.120
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	68.1	70.5	-2.37	-5.05	0.31	-4.62	-0.12	0.083
	Rating of all care received after leaving the hospital	9-10	65.8	68.6	-2.80	-5.68	0.08	-5.21	-0.38	0.088
		7-8	21.6	18.8	2.71	0.23	5.19	0.63	4.79	
0-6		12.7	12.6	0.09	-1.96	2.14	-1.63	1.81		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.5: Beneficiary Survey Outcomes for PGPs, Pooled Across all Episodes, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	65.7	66.7	-1.02	-3.17	1.14	-2.82	0.79	0.300
		Maintained	14.0	12.7	1.24	-0.38	2.87	-0.12	2.61	
		Declined	20.4	20.6	-0.23	-2.39	1.93	-2.04	1.59	
	Planning regular tasks	Improvement	67.5	67.4	0.11	-1.93	2.15	-1.60	1.82	0.153
		Maintained	10.3	11.9	-1.61	-3.32	0.11	-3.04	-0.17	
		Declined	22.3	20.8	1.50	-0.64	3.63	-0.29	3.28	
	Use of mobility device	Improvement	44.3	43.8	0.45	-1.67	2.58	-1.33	2.23	0.283
		Maintained	12.5	13.9	-1.35	-3.04	0.34	-2.77	0.06	
		Declined	43.2	42.3	0.90	-1.21	3.02	-0.87	2.68	
	Walking without rest	Improvement	38.6	39.6	-1.01	-3.28	1.26	-2.92	0.89	0.554
		Maintained	22.9	22.9	-0.03	-2.09	2.03	-1.76	1.70	
		Declined	38.4	37.4	1.04	-0.97	3.05	-0.64	2.72	
	Going up or down stairs	Improvement	39.0	38.1	0.83	-1.45	3.12	-1.08	2.75	0.710
		Maintained	23.6	24.4	-0.85	-3.15	1.45	-2.78	1.07	
		Declined	37.5	37.5	0.02	-2.21	2.25	-1.85	1.89	
	Physical/emotional problems limiting social activities	Improvement	52.1	53.6	-1.53	-4.06	1.00	-3.65	0.59	0.496
		Maintained	21.5	20.8	0.67	-1.51	2.86	-1.16	2.51	
		Declined	26.4	25.6	0.86	-1.54	3.25	-1.15	2.87	
	Pain limiting regular activities	Improvement	51.9	49.7	2.24	-0.28	4.76	0.13	4.36	0.218
		Maintained	26.3	27.8	-1.47	-4.00	1.05	-3.59	0.64	
		Declined	21.8	22.5	-0.77	-3.02	1.49	-2.66	1.13	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.0	91.7	-0.67	-2.28	0.93	-2.02	0.68	0.412
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	88.6	88.5	0.15	-1.79	2.10	-1.48	1.79	0.877
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.0	91.2	-0.21	-1.91	1.50	-1.63	1.22	0.812
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	90.4	89.6	0.86	-0.94	2.66	-0.65	2.37	0.349
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	91.3	91.5	-0.19	-1.94	1.56	-1.65	1.27	0.831
	Able to manage your health needs since returning home	Strongly Agree or Agree	94.2	93.6	0.61	-0.82	2.03	-0.59	1.80	0.404
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	88.8	88.4	0.46	-1.67	2.60	-1.32	2.25	0.669
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	73.0	71.9	1.08	-2.37	4.54	-1.82	3.98	0.539
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	62.4	63.1	-0.67	-3.07	1.74	-2.68	1.35	0.586
	Rating of all care received after leaving the hospital	9-10	61.2	60.6	0.55	-2.23	3.34	-1.78	2.89	0.616
		7-8	22.4	23.5	-1.16	-3.58	1.25	-3.19	0.86	
0-6		16.4	15.8	0.61	-1.63	2.85	-1.27	2.49		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.6: Beneficiary Survey Outcomes for PGPs, Medical Episodes, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	58.2	60.1	-1.89	-4.81	1.03	-4.34	0.55	0.136
		Maintained	17.9	15.7	2.24	-0.06	4.55	0.31	4.18	
		Declined	23.8	24.2	-0.35	-3.32	2.61	-2.84	2.14	
	Planning regular tasks	Improvement	57.6	58.2	-0.56	-3.30	2.18	-2.86	1.73	0.368
		Maintained	13.2	14.6	-1.40	-3.73	0.94	-3.35	0.56	
		Declined	29.2	27.2	1.96	-1.06	4.97	-0.57	4.49	
	Use of mobility device	Improvement	36.9	37.6	-0.73	-3.25	1.80	-2.84	1.39	0.117
		Maintained	13.1	14.9	-1.75	-3.84	0.34	-3.50	0.00	
		Declined	50.0	47.5	2.48	-0.14	5.09	0.29	4.67	
	Walking without rest	Improvement	28.4	30.5	-2.10	-4.92	0.71	-4.46	0.26	0.210
		Maintained	26.0	26.0	0.02	-2.72	2.77	-2.27	2.32	
		Declined	45.5	43.4	2.08	-0.51	4.66	-0.09	4.25	
	Going up or down stairs	Improvement	30.7	30.1	0.62	-2.18	3.41	-1.73	2.96	0.829
		Maintained	23.9	24.8	-0.85	-3.76	2.05	-3.29	1.58	
		Declined	45.3	45.1	0.24	-2.82	3.29	-2.32	2.80	
	Physical/emotional problems limiting social activities	Improvement	44.1	45.0	-0.87	-4.15	2.41	-3.62	1.88	0.865
		Maintained	24.4	23.8	0.55	-2.36	3.45	-1.89	2.98	
		Declined	31.5	31.2	0.32	-2.93	3.57	-2.40	3.04	
	Pain limiting regular activities	Improvement	41.2	40.4	0.76	-2.64	4.17	-2.09	3.62	0.899
		Maintained	32.7	33.3	-0.65	-4.14	2.85	-3.57	2.28	
		Declined	26.2	26.3	-0.12	-3.31	3.07	-2.79	2.55	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.5	90.2	0.31	-1.84	2.47	-1.49	2.12	0.774
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	86.9	86.3	0.54	-2.15	3.23	-1.71	2.79	0.694
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	89.8	89.7	0.12	-2.18	2.42	-1.80	2.05	0.917
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	88.8	87.2	1.64	-0.86	4.14	-0.45	3.74	0.198
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.1	89.6	0.59	-1.76	2.94	-1.38	2.56	0.621
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.3	92.3	0.94	-1.05	2.92	-0.73	2.60	0.356
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.9	84.8	1.12	-1.95	4.20	-1.46	3.70	0.474
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	71.4	68.8	2.59	-1.89	7.07	-1.16	6.35	0.256
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	57.1	56.1	1.03	-2.16	4.22	-1.64	3.70	0.526
	Rating of all care received after leaving the hospital	9-10	55.3	53.4	1.82	-1.82	5.45	-1.23	4.87	0.435
		7-8	24.9	26.9	-2.05	-5.25	1.15	-4.73	0.63	
0-6	19.9	19.6	0.23	-2.89	3.35	-2.39	2.85			

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.7: Beneficiary Survey Outcomes for PGPs, Surgical Episodes, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	78.3	78.0	0.39	-2.59	3.38	-2.11	2.89	0.957
		Maintained	7.4	7.4	0.02	-1.89	1.94	-1.58	1.63	
		Declined	14.2	14.7	-0.42	-3.20	2.37	-2.75	1.92	
	Planning regular tasks	Improvement	84.2	82.7	1.48	-1.23	4.18	-0.79	3.74	0.162
		Maintained	5.4	7.2	-1.77	-3.59	0.05	-3.30	-0.24	
		Declined	10.3	10.1	0.29	-2.11	2.70	-1.72	2.31	
	Use of mobility device	Improvement	56.8	54.1	2.69	-0.89	6.27	-0.31	5.69	0.329
		Maintained	11.6	12.2	-0.62	-3.37	2.14	-2.93	1.69	
		Declined	31.6	33.7	-2.07	-5.49	1.34	-4.93	0.79	
	Walking without rest	Improvement	56.0	54.9	1.13	-2.55	4.81	-1.96	4.21	0.714
		Maintained	17.7	17.6	0.12	-3.04	3.28	-2.53	2.77	
		Declined	26.3	27.5	-1.25	-4.29	1.80	-3.80	1.31	
	Going up or down stairs	Improvement	52.5	51.6	0.91	-3.10	4.91	-2.45	4.26	0.905
		Maintained	23.1	23.7	-0.63	-4.30	3.04	-3.71	2.44	
		Declined	24.4	24.7	-0.27	-3.39	2.85	-2.89	2.34	
	Physical/emotional problems limiting social activities	Improvement	65.4	67.9	-2.45	-6.32	1.42	-5.69	0.80	0.463
		Maintained	16.8	15.6	1.17	-2.03	4.37	-1.51	3.85	
		Declined	17.7	16.5	1.28	-1.97	4.52	-1.44	4.00	
	Pain limiting regular activities	Improvement	70.0	65.2	4.78	1.35	8.22	1.90	7.66	0.024
		Maintained	15.6	18.5	-2.84	-5.91	0.23	-5.41	-0.27	
		Declined	14.4	16.3	-1.94	-4.74	0.86	-4.29	0.40	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.9	94.1	-2.14	-4.51	0.23	-4.13	-0.16	0.076
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.5	91.9	-0.42	-2.92	2.07	-2.51	1.67	0.740
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	92.8	93.5	-0.70	-3.05	1.64	-2.67	1.26	0.557
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	92.8	93.3	-0.47	-2.84	1.90	-2.46	1.52	0.697
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.1	94.6	-1.43	-3.81	0.94	-3.43	0.56	0.237
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.5	95.5	0.02	-1.95	1.99	-1.63	1.67	0.986
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	93.1	93.6	-0.48	-2.74	1.77	-2.38	1.41	0.674
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	75.4	76.9	-1.42	-6.68	3.84	-5.82	2.98	0.596
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	71.5	74.9	-3.36	-7.02	0.31	-6.43	-0.28	0.073
	Rating of all care received after leaving the hospital	9-10	71.2	72.6	-1.45	-5.49	2.60	-4.83	1.94	0.568
		7-8	18.0	18.0	0.03	-3.49	3.55	-2.92	2.98	
0-6		10.8	9.4	1.42	-1.24	4.08	-0.81	3.64		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.8: Beneficiary Survey Outcomes for Hospitals, Cardiac Care CESLG, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	59.3	61.1	-1.78	-5.26	1.70	-4.69	1.14	0.462
		Maintained	19.5	18.0	1.55	-1.28	4.38	-0.82	3.92	
		Declined	21.2	20.9	0.23	-3.26	3.72	-2.70	3.16	
	Planning regular tasks	Improvement	61.2	64.4	-3.23	-6.59	0.13	-6.05	-0.42	0.140
		Maintained	14.8	14.3	0.43	-2.46	3.32	-1.99	2.85	
		Declined	24.1	21.2	2.80	-0.51	6.12	0.02	5.58	
	Use of mobility device	Improvement	37.9	40.3	-2.46	-5.67	0.75	-5.15	0.23	0.185
		Maintained	14.9	15.6	-0.69	-3.42	2.05	-2.98	1.61	
		Declined	47.2	44.1	3.14	-0.30	6.58	0.26	6.03	
	Walking without rest	Improvement	27.9	30.2	-2.34	-5.69	1.00	-5.14	0.46	0.349
		Maintained	27.6	27.3	0.31	-2.94	3.55	-2.41	3.02	
		Declined	44.5	42.5	2.03	-1.44	5.51	-0.88	4.94	
	Going up or down stairs	Improvement	28.0	29.6	-1.65	-4.98	1.67	-4.44	1.14	0.184
		Maintained	29.4	26.2	3.21	-0.25	6.67	0.31	6.11	
		Declined	42.6	44.2	-1.55	-5.31	2.20	-4.70	1.59	
	Physical/emotional problems limiting social activities	Improvement	48.9	48.1	0.82	-3.62	5.27	-2.90	4.55	0.916
		Maintained	23.2	24.0	-0.73	-4.61	3.16	-3.98	2.53	
		Declined	27.9	28.0	-0.10	-4.18	3.98	-3.52	3.32	
Pain limiting regular activities	Improvement	43.1	45.0	-1.90	-6.37	2.56	-5.64	1.84	0.702	
	Maintained	32.1	31.3	0.80	-3.22	4.83	-2.57	4.18		
	Declined	24.8	23.7	1.10	-2.88	5.08	-2.24	4.44		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	92.0	92.4	-0.36	-2.75	2.03	-2.37	1.64	0.766
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	86.8	86.0	0.83	-2.59	4.24	-2.04	3.69	0.635
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.9	90.5	-1.68	-4.66	1.31	-4.18	0.83	0.271
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.3	88.9	0.45	-2.61	3.51	-2.12	3.02	0.773
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.8	90.1	0.70	-2.11	3.51	-1.65	3.06	0.623
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.6	92.6	0.00	-2.46	2.46	-2.06	2.06	0.999
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	84.9	83.3	1.57	-2.07	5.21	-1.48	4.62	0.398
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.4	67.4	3.04	-2.73	8.80	-1.80	7.87	0.302
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	56.0	55.0	1.00	-3.03	5.03	-2.38	4.37	0.627
	Rating of all care received after leaving the hospital	9-10	57.6	53.2	4.44	-0.20	9.07	0.55	8.32	0.125
		7-8	24.8	26.1	-1.26	-5.38	2.86	-4.71	2.19	
0-6	17.6	20.8	-3.18	-6.89	0.53	-6.29	-0.07			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.9: Beneficiary Survey Outcomes for Hospitals, Gastrointestinal Care CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	68.6	69.5	-0.89	-5.95	4.17	-5.13	3.35	0.083
		Maintained	11.2	14.3	-3.12	-6.61	0.37	-6.04	-0.20	
		Declined	20.1	16.1	4.01	-0.51	8.53	0.22	7.79	
	Planning regular tasks	Improvement	66.5	67.8	-1.32	-5.61	2.96	-4.91	2.27	0.829
		Maintained	16.0	15.6	0.43	-3.10	3.96	-2.52	3.38	
		Declined	17.5	16.6	0.89	-2.99	4.77	-2.36	4.14	
	Use of mobility device	Improvement	44.6	49.6	-4.99	-9.72	-0.26	-8.95	-1.02	0.010
		Maintained	14.6	17.0	-2.38	-6.25	1.49	-5.63	0.86	
		Declined	40.8	33.4	7.37	2.63	12.11	3.40	11.34	
	Walking without rest	Improvement	36.9	36.1	0.79	-3.86	5.44	-3.10	4.68	0.874
		Maintained	30.3	29.8	0.53	-3.67	4.72	-2.98	4.04	
		Declined	32.8	34.1	-1.32	-6.30	3.67	-5.49	2.86	
	Going up or down stairs	Improvement	35.9	40.5	-4.59	-9.85	0.67	-8.99	-0.18	0.065
		Maintained	28.2	29.1	-0.95	-5.91	4.00	-5.10	3.19	
		Declined	35.9	30.4	5.54	0.72	10.37	1.50	9.58	
	Physical/emotional problems limiting social activities	Improvement	48.7	50.7	-1.97	-8.07	4.13	-7.08	3.14	0.551
		Maintained	21.8	23.2	-1.45	-6.48	3.58	-5.66	2.76	
		Declined	29.5	26.1	3.42	-2.76	9.61	-1.76	8.60	
	Pain limiting regular activities	Improvement	43.5	45.3	-1.78	-8.56	4.99	-7.46	3.89	0.644
		Maintained	30.9	28.1	2.75	-3.02	8.52	-2.08	7.59	
		Declined	25.6	26.5	-0.97	-7.31	5.37	-6.28	4.34	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.1	92.7	-1.58	-5.28	2.13	-4.68	1.53	0.404
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	87.7	89.7	-1.92	-6.55	2.72	-5.79	1.96	0.417
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	90.3	90.9	-0.62	-4.70	3.46	-4.04	2.80	0.765
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.2	91.1	-1.91	-6.10	2.29	-5.42	1.61	0.372
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	89.9	93.5	-3.64	-7.12	-0.15	-6.56	-0.72	0.041
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.9	95.1	-1.24	-4.15	1.67	-3.68	1.20	0.404
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	80.9	84.7	-3.78	-10.18	2.62	-9.14	1.58	0.247
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	62.9	67.6	-4.70	-12.90	3.50	-11.56	2.16	0.260
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	66.0	63.4	2.64	-3.26	8.55	-2.30	7.59	0.380
	Rating of all care received after leaving the hospital	9-10	60.0	59.9	0.05	-6.67	6.77	-5.58	5.68	0.363
		7-8	25.5	22.4	3.07	-2.65	8.78	-1.72	7.86	
0-6	14.6	17.7	-3.12	-8.29	2.05	-7.45	1.21			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.10: Beneficiary Survey Outcomes for Hospitals, Medical and Critical Care CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	56.7	56.0	0.62	-2.37	3.62	-1.89	3.14	0.902
		Maintained	15.6	15.6	0.03	-2.48	2.54	-2.07	2.14	
		Declined	27.7	28.4	-0.66	-3.72	2.41	-3.23	1.91	
	Planning regular tasks	Improvement	56.4	57.3	-0.99	-4.04	2.06	-3.55	1.56	0.798
		Maintained	13.7	13.2	0.59	-1.83	3.00	-1.44	2.61	
		Declined	29.9	29.5	0.41	-2.49	3.30	-2.02	2.84	
	Use of mobility device	Improvement	36.2	35.7	0.41	-2.48	3.30	-2.02	2.83	0.508
		Maintained	13.8	12.7	1.14	-1.11	3.39	-0.75	3.02	
		Declined	50.0	51.6	-1.55	-4.62	1.52	-4.12	1.03	
	Walking without rest	Improvement	28.7	29.3	-0.55	-3.57	2.48	-3.08	1.99	0.836
		Maintained	23.2	23.6	-0.39	-3.24	2.47	-2.78	2.01	
		Declined	48.1	47.1	0.93	-2.12	3.99	-1.63	3.49	
	Going up or down stairs	Improvement	27.2	30.0	-2.87	-5.96	0.22	-5.46	-0.28	0.162
		Maintained	24.4	23.8	0.60	-2.33	3.53	-1.85	3.06	
		Declined	48.5	46.2	2.27	-0.76	5.30	-0.27	4.81	
	Physical/emotional problems limiting social activities	Improvement	43.7	46.3	-2.61	-6.29	1.08	-5.70	0.48	0.372
		Maintained	24.1	23.3	0.76	-2.71	4.23	-2.15	3.67	
		Declined	32.2	30.4	1.85	-1.86	5.55	-1.26	4.95	
	Pain limiting regular activities	Improvement	41.0	42.1	-1.11	-4.94	2.72	-4.32	2.10	0.815
		Maintained	30.7	29.7	1.00	-2.67	4.66	-2.07	4.07	
		Declined	28.3	28.2	0.11	-3.67	3.90	-3.06	3.29	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	88.1	89.8	-1.69	-4.38	1.01	-3.95	0.57	0.220
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	81.5	85.4	-3.87	-7.15	-0.59	-6.62	-1.12	0.021
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	87.4	88.1	-0.69	-3.62	2.23	-3.15	1.76	0.643
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	87.6	88.1	-0.46	-3.36	2.44	-2.89	1.97	0.756
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	87.4	88.6	-1.24	-4.30	1.82	-3.80	1.33	0.427
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.3	92.2	1.11	-1.24	3.46	-0.86	3.08	0.353
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	83.2	87.3	-4.18	-7.40	-0.95	-6.88	-1.47	0.011
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.2	71.4	-1.17	-5.95	3.60	-5.17	2.83	0.629
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	54.6	55.6	-1.03	-4.81	2.74	-4.20	2.13
Rating of all care received after leaving the hospital		9-10	50.7	56.2	-5.55	-9.62	-1.48	-8.96	-2.14	0.005
		7-8	26.0	25.8	0.15	-3.50	3.79	-2.91	3.20	
	0-6	23.3	17.9	5.40	1.94	8.87	2.50	8.31		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.11: Beneficiary Survey Outcomes for Hospitals, Neurological CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	54.9	48.9	5.97	0.76	11.18	1.61	10.33	0.037
		Maintained	9.2	12.3	-3.03	-6.43	0.37	-5.88	-0.18	
		Declined	35.9	38.8	-2.94	-8.43	2.55	-7.54	1.66	
	Planning regular tasks	Improvement	47.0	44.0	3.05	-2.24	8.33	-1.38	7.48	0.480
		Maintained	11.0	10.8	0.16	-3.67	3.98	-3.05	3.36	
		Declined	42.0	45.2	-3.21	-8.74	2.33	-7.84	1.43	
	Use of mobility device	Improvement	38.3	38.8	-0.59	-6.10	4.93	-5.20	4.03	0.562
		Maintained	9.8	7.9	1.86	-1.54	5.26	-0.99	4.71	
		Declined	52.0	53.2	-1.27	-7.29	4.74	-6.31	3.76	
	Walking without rest	Improvement	33.3	28.8	4.45	-0.69	9.58	0.14	8.75	0.192
		Maintained	16.0	15.8	0.19	-3.57	3.95	-2.96	3.34	
		Declined	50.7	55.3	-4.63	-9.98	0.71	-9.11	-0.15	
	Going up or down stairs	Improvement	32.4	27.0	5.42	0.52	10.31	1.32	9.52	0.061
		Maintained	19.5	19.2	0.27	-4.14	4.68	-3.42	3.97	
		Declined	48.1	53.8	-5.69	-10.99	-0.40	-10.13	-1.26	
	Physical/emotional problems limiting social activities	Improvement	42.0	36.9	5.13	-0.90	11.15	0.08	10.17	0.248
		Maintained	19.6	20.8	-1.20	-6.47	4.08	-5.62	3.22	
		Declined	38.4	42.4	-3.93	-10.68	2.83	-9.59	1.73	
	Pain limiting regular activities	Improvement	39.6	36.4	3.20	-3.07	9.47	-2.05	8.45	0.490
		Maintained	28.3	27.6	0.68	-5.00	6.37	-4.07	5.44	
		Declined	32.2	36.0	-3.89	-10.61	2.84	-9.52	1.75	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	87.9	81.1	6.81	1.45	12.16	2.32	11.29	0.013
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	87.1	85.2	1.98	-2.67	6.63	-1.91	5.88	0.403
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.6	85.9	2.70	-1.76	7.15	-1.04	6.43	0.235
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.0	86.0	3.00	-1.32	7.33	-0.62	6.62	0.173
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	88.2	87.1	1.08	-3.37	5.53	-2.65	4.80	0.634
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.6	91.7	0.89	-2.92	4.71	-2.30	4.09	0.646
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.9	86.4	-0.49	-5.53	4.55	-4.71	3.73	0.847
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	67.4	73.2	-5.78	-13.37	1.82	-12.13	0.58	0.136
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	52.5	53.5	-0.94	-7.05	5.16	-6.05	4.17	0.762
	Rating of all care received after leaving the hospital	9-10	55.5	53.1	2.41	-4.24	9.05	-3.16	7.97	0.675
		7-8	24.1	23.9	0.15	-5.90	6.19	-4.92	5.21	
0-6		20.4	22.9	-2.56	-8.57	3.46	-7.60	2.49		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.12: Beneficiary Survey Outcomes for Hospitals, Cardiac Procedures CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	86.3	85.9	0.38	-2.64	3.41	-2.15	2.92	0.967
		Maintained	5.0	5.2	-0.19	-2.16	1.79	-1.84	1.47	
		Declined	8.7	8.9	-0.20	-2.92	2.53	-2.47	2.08	
	Planning regular tasks	Improvement	81.4	82.9	-1.45	-5.07	2.16	-4.48	1.57	0.719
		Maintained	7.2	6.7	0.42	-2.32	3.17	-1.87	2.72	
		Declined	11.4	10.4	1.03	-1.97	4.03	-1.48	3.54	
	Use of mobility device	Improvement	68.2	70.2	-2.05	-5.55	1.45	-4.98	0.88	0.188
		Maintained	13.3	10.6	2.65	-0.25	5.55	0.22	5.07	
		Declined	18.6	19.2	-0.60	-3.96	2.76	-3.41	2.21	
	Walking without rest	Improvement	59.0	59.7	-0.66	-5.26	3.95	-4.51	3.20	0.883
		Maintained	24.2	23.1	1.05	-3.10	5.21	-2.43	4.53	
		Declined	16.8	17.2	-0.40	-4.16	3.37	-3.55	2.75	
	Going up or down stairs	Improvement	52.3	52.0	0.35	-4.78	5.47	-3.94	4.64	0.812
		Maintained	28.3	27.5	0.75	-3.37	4.87	-2.70	4.20	
		Declined	19.4	20.5	-1.10	-4.78	2.58	-4.18	1.98	
	Physical/emotional problems limiting social activities	Improvement	65.9	66.0	-0.03	-4.86	4.79	-4.08	4.01	0.677
		Maintained	19.7	18.3	1.39	-2.53	5.31	-1.89	4.67	
		Declined	14.4	15.8	-1.36	-5.22	2.51	-4.59	1.88	
	Pain limiting regular activities	Improvement	56.3	55.6	0.73	-4.60	6.06	-3.73	5.19	0.942
		Maintained	25.5	26.4	-0.95	-6.37	4.47	-5.49	3.59	
		Declined	18.2	18.0	0.22	-3.84	4.27	-3.17	3.61	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	97.6	97.3	0.35	-1.17	1.87	-0.92	1.62	0.650
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	94.0	92.0	1.97	-1.09	5.03	-0.59	4.53	0.206
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	94.4	93.2	1.26	-1.56	4.08	-1.10	3.62	0.380
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	95.9	93.6	2.26	-0.42	4.93	0.02	4.50	0.098
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	94.2	93.8	0.42	-2.17	3.02	-1.75	2.59	0.749
	Able to manage your health needs since returning home	Strongly Agree or Agree	96.7	98.2	-1.56	-3.34	0.22	-3.05	-0.07	0.086
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	90.1	89.3	0.78	-3.42	4.98	-2.74	4.30	0.716
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.0	64.0	5.99	-2.86	14.85	-1.41	13.39	0.184
	Overall satisfaction with recovery	Quite a bit or Extreme	76.2	77.2	-0.98	-5.51	3.55	-4.77	2.81	0.672
Satisfaction with Care	Rating of all care received after leaving the hospital	9-10	70.1	72.1	-1.98	-6.99	3.02	-6.17	2.21	0.401
		7-8	19.7	16.7	3.06	-1.50	7.63	-0.76	6.88	
		0-6	10.2	11.3	-1.08	-4.52	2.36	-3.96	1.80	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.13: Beneficiary Survey Outcomes for Hospitals, Orthopedics CESLG, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	66.7	68.8	-2.18	-5.25	0.88	-4.75	0.39	0.375
		Maintained	9.8	9.2	0.65	-1.80	3.11	-1.40	2.71	
		Declined	23.5	22.0	1.53	-1.79	4.85	-1.26	4.31	
	Planning regular tasks	Improvement	71.9	76.1	-4.16	-7.21	-1.11	-6.71	-1.60	0.028
		Maintained	8.4	7.0	1.36	-0.86	3.58	-0.50	3.22	
		Declined	19.7	16.9	2.80	-0.06	5.65	0.40	5.19	
	Use of mobility device	Improvement	42.0	41.4	0.61	-3.00	4.22	-2.42	3.63	0.919
		Maintained	9.9	10.3	-0.41	-2.79	1.96	-2.40	1.58	
		Declined	48.1	48.3	-0.19	-3.79	3.40	-3.20	2.82	
	Walking without rest	Improvement	42.9	44.7	-1.74	-5.42	1.94	-4.83	1.35	0.637
		Maintained	13.7	13.3	0.46	-2.70	3.61	-2.19	3.10	
		Declined	43.4	42.1	1.28	-2.17	4.74	-1.61	4.18	
	Going up or down stairs	Improvement	41.5	41.5	-0.02	-3.78	3.75	-3.17	3.14	0.138
		Maintained	17.9	20.9	-3.00	-6.34	0.34	-5.80	-0.20	
		Declined	40.6	37.6	3.02	-0.68	6.72	-0.08	6.12	
	Physical/emotional problems limiting social activities	Improvement	54.1	56.6	-2.52	-6.15	1.10	-5.56	0.51	0.379
		Maintained	16.8	16.1	0.67	-2.54	3.88	-2.02	3.36	
		Declined	29.1	27.3	1.85	-1.67	5.37	-1.10	4.80	
	Pain limiting regular activities	Improvement	56.3	57.2	-0.83	-5.07	3.41	-4.39	2.72	0.506
		Maintained	18.7	16.8	1.96	-1.48	5.39	-0.92	4.83	
		Declined	24.9	26.1	-1.12	-4.67	2.42	-4.10	1.85	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.2	90.2	-0.91	-3.40	1.57	-3.00	1.17	0.471
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.0	91.3	-0.32	-3.15	2.51	-2.69	2.05	0.825
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.9	92.5	-0.58	-3.06	1.89	-2.66	1.49	0.643
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	92.7	93.7	-0.98	-3.33	1.36	-2.94	0.98	0.409
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.3	92.8	0.48	-1.92	2.89	-1.53	2.50	0.692
	Able to manage your health needs since returning home	Strongly Agree or Agree	96.6	96.8	-0.18	-1.71	1.35	-1.46	1.10	0.815
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	91.2	92.9	-1.69	-4.37	0.98	-3.93	0.55	0.215
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	81.9	77.7	4.13	-0.82	9.08	-0.02	8.27	0.102
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	65.3	70.1	-4.78	-8.53	-1.04	-7.92	-1.65
Rating of all care received after leaving the hospital		9-10	65.6	67.9	-2.26	-6.36	1.85	-5.69	1.18	0.376
		7-8	21.5	19.1	2.48	-1.02	5.98	-0.45	5.41	
		0-6	12.8	13.1	-0.22	-3.28	2.84	-2.78	2.34	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.14: Beneficiary Survey Outcomes for Hospitals, Spinal Procedures CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	74.0	75.5	-1.48	-6.04	3.07	-5.30	2.33	0.754
		Maintained	12.4	12.3	0.17	-3.49	3.83	-2.90	3.23	
		Declined	13.6	12.3	1.32	-2.34	4.97	-1.75	4.38	
	Planning regular tasks	Improvement	79.4	82.3	-2.87	-6.69	0.94	-6.07	0.32	0.299
		Maintained	9.6	8.9	0.72	-2.21	3.64	-1.73	3.16	
		Declined	11.0	8.8	2.16	-0.99	5.31	-0.48	4.79	
	Use of mobility device	Improvement	56.3	52.0	4.36	-0.43	9.16	0.35	8.38	0.203
		Maintained	14.7	16.2	-1.53	-4.72	1.66	-4.20	1.14	
		Declined	29.0	31.8	-2.83	-7.18	1.51	-6.47	0.80	
	Walking without rest	Improvement	59.7	57.4	2.26	-2.47	6.98	-1.70	6.21	0.154
		Maintained	21.3	19.5	1.79	-2.32	5.90	-1.65	5.23	
		Declined	19.0	23.1	-4.05	-8.17	0.08	-7.50	-0.60	
	Going up or down stairs	Improvement	55.1	55.1	-0.02	-5.48	5.44	-4.59	4.55	0.108
		Maintained	26.4	22.6	3.79	-0.94	8.52	-0.17	7.75	
		Declined	18.5	22.3	-3.77	-7.95	0.41	-7.27	-0.27	
	Physical/emotional problems limiting social activities	Improvement	63.0	64.2	-1.22	-6.22	3.78	-5.41	2.96	0.447
		Maintained	20.6	17.8	2.76	-1.65	7.17	-0.93	6.45	
		Declined	16.4	18.0	-1.54	-5.77	2.69	-5.08	2.01	
	Pain limiting regular activities	Improvement	71.1	69.3	1.80	-3.09	6.69	-2.30	5.89	0.306
		Maintained	14.2	17.2	-3.08	-7.05	0.89	-6.40	0.25	
		Declined	14.7	13.5	1.28	-2.75	5.31	-2.09	4.66	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.0	90.8	0.29	-2.67	3.24	-2.19	2.76	0.850
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	89.1	90.4	-1.34	-4.93	2.25	-4.35	1.66	0.462
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.5	90.7	0.73	-2.16	3.61	-1.69	3.14	0.621
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	92.3	94.0	-1.66	-4.54	1.22	-4.07	0.75	0.258
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	92.5	92.7	-0.19	-2.92	2.54	-2.47	2.10	0.893
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.8	95.3	-1.44	-4.05	1.17	-3.63	0.74	0.278
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	90.4	92.0	-1.61	-4.87	1.65	-4.34	1.12	0.332
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	71.2	70.3	0.91	-6.93	8.76	-5.65	7.47	0.819
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	61.2	61.7	-0.54	-6.03	4.95	-5.14	4.06
Rating of all care received after leaving the hospital		9-10	62.6	67.2	-4.64	-10.26	0.98	-9.35	0.07	0.270
		7-8	22.4	19.7	2.71	-1.88	7.29	-1.13	6.55	
		0-6	15.0	13.0	1.93	-2.08	5.95	-1.43	5.30	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.15: Beneficiary Survey Outcomes for PGPs, Cardiac Care CESLG, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	61.0	59.4	1.61	-3.69	6.91	-2.83	6.04	0.487
		Maintained	18.0	20.6	-2.60	-6.86	1.66	-6.16	0.97	
		Declined	21.0	20.0	0.99	-4.14	6.12	-3.31	5.29	
	Planning regular tasks	Improvement	65.4	62.8	2.57	-2.65	7.79	-1.80	6.95	0.284
		Maintained	13.2	16.3	-3.10	-7.05	0.84	-6.41	0.20	
		Declined	21.4	20.9	0.53	-4.57	5.63	-3.75	4.80	
	Use of mobility device	Improvement	37.6	37.8	-0.24	-4.96	4.49	-4.19	3.72	0.269
		Maintained	14.1	17.2	-3.10	-7.15	0.95	-6.49	0.29	
		Declined	48.3	45.0	3.33	-1.80	8.46	-0.96	7.63	
	Walking without rest	Improvement	28.3	31.1	-2.80	-8.04	2.45	-7.19	1.59	0.578
		Maintained	30.4	29.1	1.33	-3.80	6.46	-2.97	5.63	
		Declined	41.3	39.8	1.47	-3.85	6.79	-2.99	5.93	
	Going up or down stairs	Improvement	28.4	31.9	-3.55	-8.94	1.83	-8.06	0.96	0.206
		Maintained	28.6	24.2	4.36	-0.77	9.49	0.07	8.65	
		Declined	43.1	43.9	-0.81	-6.37	4.76	-5.47	3.85	
	Physical/emotional problems limiting social activities	Improvement	43.8	44.0	-0.20	-6.46	6.06	-5.45	5.04	0.983
		Maintained	26.6	27.0	-0.33	-5.97	5.32	-5.05	4.40	
		Declined	29.6	29.1	0.53	-5.37	6.43	-4.41	5.47	
Pain limiting regular activities	Improvement	41.2	40.3	0.92	-4.97	6.80	-4.01	5.84	0.624	
	Maintained	34.9	33.0	1.86	-3.73	7.45	-2.82	6.54		
	Declined	23.9	26.7	-2.78	-8.58	3.02	-7.63	2.08		



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.4	91.6	-0.16	-3.68	3.35	-3.11	2.78	0.927
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	89.1	85.8	3.23	-1.55	8.02	-0.77	7.24	0.185
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.9	91.0	0.98	-2.84	4.80	-2.22	4.18	0.614
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.9	90.4	-0.48	-4.63	3.68	-3.95	3.00	0.821
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.5	92.6	-2.19	-5.99	1.62	-5.37	1.00	0.259
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.9	92.3	1.64	-2.36	5.64	-1.71	4.98	0.421
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.3	83.8	1.47	-4.01	6.96	-3.12	6.06	0.598
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	69.4	70.0	-0.69	-8.29	6.90	-7.05	5.66	0.858
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	55.2	55.2	-0.06	-5.91	5.80	-4.96	4.85
Rating of all care received after leaving the hospital		9-10	58.6	58.8	-0.12	-6.57	6.32	-5.52	5.27	0.842
		7-8	23.0	21.7	1.34	-3.98	6.65	-3.11	5.79	
0-6	18.3	19.5	-1.21	-6.62	4.19	-5.74	3.31			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.16: Beneficiary Survey Outcomes for PGPs, Medical and Critical Care CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	57.1	59.2	-2.12	-5.80	1.56	-5.20	0.97	0.032
		Maintained	19.2	15.1	4.06	1.03	7.08	1.52	6.59	
		Declined	23.7	25.7	-1.94	-5.58	1.71	-4.99	1.12	
	Planning regular tasks	Improvement	55.9	56.8	-0.88	-4.38	2.63	-3.81	2.06	0.856
		Maintained	13.6	13.7	-0.13	-2.77	2.50	-2.34	2.08	
		Declined	30.5	29.5	1.01	-2.66	4.68	-2.07	4.09	
	Use of mobility device	Improvement	36.5	36.8	-0.35	-3.78	3.08	-3.22	2.52	0.247
		Maintained	13.1	15.1	-2.00	-4.68	0.69	-4.25	0.26	
		Declined	50.4	48.0	2.34	-1.10	5.79	-0.54	5.23	
	Walking without rest	Improvement	27.8	30.0	-2.18	-5.60	1.24	-5.05	0.69	0.391
		Maintained	26.0	25.7	0.33	-3.06	3.73	-2.51	3.18	
		Declined	46.1	44.3	1.85	-1.44	5.14	-0.91	4.61	
	Going up or down stairs	Improvement	30.1	29.2	0.88	-2.65	4.41	-2.08	3.84	0.884
		Maintained	23.4	23.7	-0.30	-3.82	3.21	-3.25	2.64	
		Declined	46.5	47.1	-0.58	-4.06	2.91	-3.49	2.34	
	Physical/emotional problems limiting social activities	Improvement	44.4	44.8	-0.37	-4.33	3.58	-3.69	2.94	0.852
		Maintained	24.8	23.7	1.10	-2.72	4.91	-2.10	4.29	
		Declined	30.8	31.5	-0.72	-4.96	3.51	-4.27	2.82	
	Pain limiting regular activities	Improvement	41.4	41.0	0.44	-3.89	4.77	-3.19	4.07	0.882
		Maintained	31.8	32.9	-1.09	-5.46	3.29	-4.75	2.58	
		Declined	26.8	26.2	0.65	-3.27	4.56	-2.64	3.93	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.0	88.7	1.34	-1.56	4.25	-1.09	3.77	0.365
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	85.7	86.1	-0.34	-3.81	3.12	-3.25	2.56	0.845
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.9	89.3	-0.41	-3.39	2.58	-2.91	2.10	0.790
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	87.7	85.9	1.85	-1.51	5.21	-0.96	4.66	0.280
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	89.1	88.3	0.82	-2.29	3.93	-1.79	3.43	0.606
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.4	92.1	1.30	-1.10	3.70	-0.71	3.31	0.289
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.6	84.6	0.91	-2.90	4.72	-2.28	4.11	0.639
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	72.1	70.5	1.61	-3.82	7.04	-2.93	6.16	0.560
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	57.8	54.8	3.05	-0.98	7.08	-0.33	6.43
Rating of all care received after leaving the hospital		9-10	53.4	51.8	1.63	-2.92	6.17	-2.18	5.43	0.343
		7-8	25.8	28.8	-2.99	-7.04	1.07	-6.38	0.41	
		0-6	20.7	19.4	1.36	-2.45	5.16	-1.83	4.55	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.17: Beneficiary Survey Outcomes for PGPs, Orthopedics CESLG, Waves 2 and 3  
(July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	77.4	77.8	-0.42	-3.77	2.92	-3.23	2.38	0.860
		Maintained	7.2	6.6	0.63	-1.62	2.87	-1.25	2.51	
		Declined	15.4	15.6	-0.20	-3.38	2.98	-2.87	2.46	
	Planning regular tasks	Improvement	83.3	82.3	0.99	-2.03	4.01	-1.54	3.52	0.216
		Maintained	5.6	7.4	-1.82	-3.89	0.25	-3.55	-0.09	
		Declined	11.1	10.3	0.83	-1.81	3.47	-1.38	3.05	
	Use of mobility device	Improvement	55.1	52.0	3.11	-0.91	7.13	-0.26	6.48	0.313
		Maintained	10.5	11.8	-1.31	-4.55	1.93	-4.02	1.40	
		Declined	34.4	36.2	-1.80	-5.74	2.13	-5.10	1.50	
	Walking without rest	Improvement	55.6	54.7	0.93	-3.30	5.17	-2.61	4.48	0.696
		Maintained	16.0	15.4	0.59	-3.06	4.25	-2.47	3.65	
		Declined	28.4	29.9	-1.53	-5.06	2.00	-4.48	1.43	
	Going up or down stairs	Improvement	51.8	50.3	1.51	-3.14	6.16	-2.39	5.41	0.814
		Maintained	21.9	23.0	-1.04	-5.22	3.15	-4.54	2.47	
		Declined	26.2	26.7	-0.47	-4.08	3.13	-3.49	2.55	
	Physical/emotional problems limiting social activities	Improvement	65.0	67.7	-2.76	-7.11	1.59	-6.40	0.88	0.264
		Maintained	15.4	15.7	-0.30	-3.95	3.35	-3.36	2.76	
		Declined	19.6	16.6	3.06	-0.70	6.82	-0.09	6.21	
	Pain limiting regular activities	Improvement	69.8	64.3	5.48	1.54	9.42	2.18	8.78	0.025
		Maintained	14.7	17.8	-3.09	-6.58	0.40	-6.02	-0.16	
		Declined	15.4	17.8	-2.39	-5.67	0.89	-5.14	0.35	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.1	94.1	-3.04	-5.69	-0.39	-5.26	-0.82	0.025
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.5	92.2	-0.66	-3.36	2.04	-2.92	1.60	0.631
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	92.7	94.3	-1.58	-4.13	0.97	-3.72	0.55	0.223
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	92.1	93.8	-1.65	-4.29	0.99	-3.86	0.56	0.220
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	92.7	94.5	-1.79	-4.52	0.93	-4.08	0.49	0.197
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.7	95.9	-0.22	-2.35	1.91	-2.00	1.56	0.840
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	93.8	94.1	-0.25	-2.63	2.14	-2.24	1.75	0.840
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	77.1	78.2	-1.07	-6.92	4.78	-5.97	3.83	0.719
	Overall satisfaction with recovery	Quite a bit or Extreme	71.6	74.8	-3.16	-7.37	1.04	-6.69	0.36	0.140
Satisfaction with Care	Rating of all care received after leaving the hospital	9-10	72.0	72.5	-0.46	-5.08	4.16	-4.33	3.41	0.932
		7-8	17.8	18.0	-0.12	-4.27	4.02	-3.59	3.35	
		0-6	10.1	9.5	0.59	-2.49	3.67	-1.99	3.17	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.18: Beneficiary Survey Outcomes for PGP, Spinal Procedures CESLG, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	80.5	79.4	1.13	-5.26	7.52	-4.21	6.47	0.701
		Maintained	9.9	11.8	-1.93	-6.70	2.85	-5.92	2.06	
		Declined	9.6	8.8	0.80	-3.79	5.38	-3.04	4.63	
	Planning regular tasks	Improvement	90.6	86.4	4.20	-1.08	9.49	-0.21	8.62	0.251
		Maintained	3.7	6.8	-3.02	-6.93	0.88	-6.29	0.24	
		Declined	5.6	6.8	-1.18	-4.87	2.52	-4.27	1.91	
	Use of mobility device	Improvement	61.6	61.2	0.38	-7.45	8.22	-6.17	6.93	0.703
		Maintained	14.3	12.6	1.69	-3.27	6.65	-2.46	5.84	
		Declined	24.2	26.2	-2.07	-8.88	4.74	-7.76	3.62	
	Walking without rest	Improvement	61.9	56.0	5.86	-2.37	14.08	-1.02	12.73	0.368
		Maintained	21.5	24.6	-3.12	-9.06	2.81	-8.09	1.84	
		Declined	16.6	19.3	-2.73	-9.30	3.83	-8.22	2.76	
	Going up or down stairs	Improvement	58.2	59.6	-1.32	-9.78	7.14	-8.39	5.75	0.824
		Maintained	26.3	24.2	2.07	-4.69	8.83	-3.58	7.72	
		Declined	15.5	16.2	-0.75	-6.78	5.29	-5.79	4.30	
	Physical/emotional problems limiting social activities	Improvement	69.7	68.7	0.99	-7.29	9.27	-5.93	7.91	0.463
		Maintained	19.3	16.9	2.38	-4.56	9.33	-3.42	8.19	
		Declined	11.0	14.3	-3.37	-9.17	2.43	-8.22	1.48	
Pain limiting regular activities	Improvement	75.0	73.5	1.47	-6.08	9.03	-4.84	7.78	0.770	
	Maintained	16.5	18.8	-2.24	-8.77	4.30	-7.70	3.22		
	Declined	8.5	7.7	0.77	-3.76	5.30	-3.02	4.55		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	93.2	92.9	0.27	-3.81	4.36	-3.14	3.69	0.895
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	89.8	90.0	-0.16	-5.15	4.82	-4.33	4.00	0.949
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	92.8	91.7	1.08	-2.78	4.94	-2.15	4.30	0.584
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	96.3	92.6	3.71	0.30	7.11	0.86	6.55	0.033
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	95.2	93.6	1.59	-2.08	5.26	-1.48	4.66	0.395
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.0	92.7	2.35	-1.66	6.37	-1.00	5.71	0.250
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	90.9	90.3	0.62	-3.96	5.21	-3.21	4.45	0.789
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	66.9	70.7	-3.75	-14.40	6.91	-12.63	5.14	0.489
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	70.6	72.9	-2.24	-9.93	5.46	-8.67	4.19
Rating of all care received after leaving the hospital		9-10	68.8	75.5	-6.72	-13.91	0.47	-12.73	-0.71	0.055
		7-8	17.8	16.5	1.30	-4.92	7.53	-3.90	6.51	
		0-6	13.4	7.9	5.41	0.79	10.03	1.55	9.28	

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.19: Sample Sizes for Beneficiaries from Historically Underserved Populations, Waves 2 and 3 Pooled (July-August 2021; July-August 2022)**

Population		BPCI Advanced Respondents (N)	Comparison Respondents (N)
Hospital	Black or African American	720	745
	Dually Eligible	973	1,103
	Hispanic	611	667
PGP	Dually Eligible	430	412

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit M.20: Beneficiary Survey Outcomes for Hospitals, Black or African American Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	61.0	56.9	4.09	-2.00	10.18	-1.02	9.20	0.124
		Maintained	10.6	14.2	-3.58	-7.36	0.19	-6.75	-0.42	
		Declined	28.3	28.8	-0.51	-6.74	5.73	-5.74	4.72	
	Planning regular tasks	Improvement	55.3	58.5	-3.18	-8.88	2.52	-7.96	1.60	0.458
		Maintained	12.2	12.8	-0.60	-4.68	3.49	-4.02	2.83	
		Declined	32.5	28.7	3.78	-2.27	9.82	-1.29	8.85	
	Use of mobility device	Improvement	36.8	39.3	-2.52	-8.59	3.55	-7.61	2.57	0.364
		Maintained	15.4	12.5	2.88	-1.26	7.02	-0.59	6.35	
		Declined	47.9	48.2	-0.36	-6.51	5.79	-5.52	4.80	
	Walking without rest	Improvement	33.7	34.7	-1.06	-7.48	5.37	-6.45	4.33	0.844
		Maintained	20.2	21.1	-0.85	-6.03	4.33	-5.20	3.49	
		Declined	46.1	44.2	1.91	-4.59	8.41	-3.54	7.36	
	Going up or down stairs	Improvement	27.7	36.9	-9.14	-16.08	-2.20	-14.96	-3.32	0.035
		Maintained	29.0	25.5	3.53	-2.51	9.58	-1.54	8.60	
		Declined	43.3	37.7	5.61	-0.73	11.95	0.29	10.93	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Physical/emotional problems limiting social activities	Improvement	42.4	47.8	-5.45	-12.76	1.86	-11.58	0.68	0.300
		Maintained	24.1	23.3	0.80	-5.47	7.06	-4.46	6.05	
		Declined	33.5	28.9	4.66	-2.30	11.62	-1.18	10.49	
	Pain limiting regular activities	Improvement	39.5	44.5	-4.96	-12.43	2.51	-11.23	1.31	0.094
		Maintained	34.6	26.7	7.96	0.79	15.14	1.95	13.98	
		Declined	25.9	28.9	-3.00	-9.80	3.79	-8.71	2.70	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	88.8	89.8	-0.98	-5.81	3.86	-5.03	3.08	0.694
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	80.9	86.9	-5.95	-11.81	-0.09	-10.86	-1.03	0.047
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	89.6	87.9	1.72	-3.26	6.69	-2.45	5.89	0.498
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	87.0	87.8	-0.80	-6.12	4.52	-5.26	3.66	0.768
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.5	89.3	1.25	-3.34	5.84	-2.60	5.10	0.593
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.6	92.7	-0.08	-3.57	3.41	-3.00	2.85	0.965
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.0	87.7	-2.69	-8.11	2.73	-7.23	1.86	0.331
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	72.0	68.6	3.45	-5.01	11.90	-3.64	10.53	0.424

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	55.2	61.3	-6.11	-12.77	0.54	-11.70	-0.53	0.072
	Rating of all care received after leaving the hospital	9-10	55.4	56.1	-0.67	-8.24	6.90	-7.02	5.68	0.961
		7-8	26.5	26.7	-0.19	-7.03	6.65	-5.92	5.55	
		0-6	18.1	17.2	0.86	-5.14	6.85	-4.17	5.89	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.21: Beneficiary Survey Outcomes for Hospitals, Hispanic Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	57.8	61.1	-3.34	-10.20	3.51	-9.09	2.41	0.631
		Maintained	14.7	13.8	0.87	-3.50	5.25	-2.80	4.55	
		Declined	27.5	25.1	2.47	-3.64	8.58	-2.65	7.59	
	Planning regular tasks	Improvement	53.1	58.3	-5.17	-11.92	1.57	-10.83	0.48	0.289
		Maintained	13.0	10.9	2.04	-1.98	6.07	-1.33	5.42	
		Declined	33.9	30.8	3.13	-3.32	9.58	-2.28	8.54	
	Use of mobility device	Improvement	46.2	42.8	3.42	-3.91	10.74	-2.73	9.56	0.641
		Maintained	13.9	14.1	-0.20	-5.77	5.36	-4.87	4.46	
		Declined	39.9	43.1	-3.21	-10.88	4.45	-9.64	3.22	
	Walking without rest	Improvement	38.5	37.4	1.09	-7.27	9.45	-5.93	8.10	0.141
		Maintained	25.0	20.5	4.58	-1.51	10.67	-0.53	9.69	
		Declined	36.5	42.1	-5.67	-12.69	1.35	-11.56	0.22	
	Going up or down stairs	Improvement	34.5	33.5	0.95	-6.96	8.87	-5.69	7.59	0.476
		Maintained	25.3	22.2	3.13	-3.20	9.46	-2.18	8.44	
		Declined	40.2	44.3	-4.08	-11.73	3.57	-10.49	2.33	
Physical/emotional problems limiting social activities	Improvement	46.4	50.4	-4.00	-11.57	3.56	-10.35	2.34	0.293	
	Maintained	20.7	16.3	4.39	-1.30	10.08	-0.38	9.17		
	Declined	32.9	33.2	-0.39	-7.57	6.79	-6.41	5.63		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	42.9	43.6	-0.61	-8.44	7.22	-7.18	5.96	0.536
		Maintained	29.3	25.7	3.63	-3.72	10.99	-2.54	9.81	
		Declined	27.7	30.8	-3.03	-9.73	3.68	-8.65	2.59	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	87.5	90.2	-2.75	-7.64	2.15	-6.86	1.36	0.271
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	84.1	89.8	-5.75	-11.34	-0.16	-10.44	-1.06	0.044
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	89.9	93.9	-3.99	-8.22	0.24	-7.54	-0.44	0.065
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.8	93.1	-3.29	-7.61	1.03	-6.91	0.33	0.135
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.9	93.0	-2.11	-6.53	2.31	-5.82	1.59	0.349
	Able to manage your health needs since returning home	Strongly Agree or Agree	94.2	96.0	-1.83	-5.03	1.38	-4.52	0.86	0.264
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	86.6	90.9	-4.30	-9.28	0.68	-8.48	-0.13	0.090
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	64.9	72.0	-7.08	-15.79	1.63	-14.38	0.23	0.111

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	57.5	58.7	-1.16	-8.99	6.68	-7.73	5.41	0.772
	Rating of all care received after leaving the hospital	9-10	58.3	62.3	-3.92	-11.37	3.54	-10.17	2.34	0.574
		7-8	25.3	23.3	2.00	-4.87	8.86	-3.76	7.75	
		0-6	16.4	14.5	1.92	-3.58	7.42	-2.69	6.53	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.22: Beneficiary Survey Outcomes for Hospitals, Dually Eligible Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	53.0	55.3	-2.29	-7.05	2.48	-6.28	1.71	0.636
		Maintained	14.6	14.1	0.52	-2.21	3.25	-1.77	2.81	
		Declined	32.3	30.6	1.76	-3.10	6.63	-2.32	5.84	
	Planning regular tasks	Improvement	52.5	57.5	-5.00	-9.61	-0.40	-8.87	-1.14	0.062
		Maintained	12.7	12.9	-0.22	-3.17	2.72	-2.69	2.25	
		Declined	34.8	29.5	5.23	0.79	9.67	1.50	8.95	
	Use of mobility device	Improvement	39.8	41.9	-2.11	-7.28	3.06	-6.45	2.22	0.514
		Maintained	14.4	12.6	1.82	-1.56	5.19	-1.01	4.64	
		Declined	45.8	45.5	0.30	-4.80	5.39	-3.98	4.57	
	Walking without rest	Improvement	30.6	32.3	-1.73	-7.16	3.70	-6.29	2.82	0.738
		Maintained	23.6	23.8	-0.21	-5.18	4.76	-4.38	3.96	
		Declined	45.8	43.9	1.94	-3.24	7.12	-2.40	6.29	
	Going up or down stairs	Improvement	30.0	34.6	-4.58	-10.46	1.29	-9.51	0.35	0.207
		Maintained	25.3	24.8	0.50	-4.63	5.63	-3.80	4.80	
		Declined	44.7	40.6	4.08	-0.89	9.06	-0.09	8.26	
Physical/emotional problems limiting social activities	Improvement	46.6	49.9	-3.24	-9.31	2.83	-8.33	1.85	0.549	
	Maintained	22.8	21.9	0.90	-3.93	5.73	-3.15	4.95		
	Declined	30.6	28.2	2.34	-2.66	7.34	-1.85	6.53		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	39.5	38.9	0.60	-5.34	6.54	-4.38	5.58	0.777
		Maintained	32.9	31.7	1.23	-4.10	6.56	-3.24	5.70	
		Declined	27.5	29.4	-1.83	-7.12	3.47	-6.27	2.61	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.1	90.9	0.16	-2.94	3.25	-2.44	2.75	0.921
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	85.8	86.9	-1.08	-5.20	3.04	-4.53	2.38	0.608
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	90.8	90.3	0.51	-2.90	3.92	-2.35	3.37	0.770
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	91.5	91.8	-0.31	-3.62	2.99	-3.09	2.46	0.852
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	91.8	91.1	0.70	-2.85	4.25	-2.28	3.68	0.699
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.2	93.2	-0.01	-2.79	2.76	-2.35	2.32	0.992
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	85.1	87.4	-2.36	-7.15	2.44	-6.38	1.66	0.335
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	74.6	75.4	-0.76	-6.98	5.46	-5.98	4.45	0.810

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	60.6	61.4	-0.79	-6.18	4.59	-5.31	3.72	0.773
	Rating of all care received after leaving the hospital	9-10	51.4	54.3	-2.94	-9.09	3.21	-8.10	2.22	0.641
		7-8	26.7	24.8	1.94	-3.52	7.39	-2.64	6.51	
		0-6	21.9	20.9	1.00	-3.78	5.78	-3.01	5.01	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.23: Beneficiary Survey Outcomes for PGPs, Dually Eligible Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	61.6	66.3	-4.62	-11.02	1.78	-9.98	0.75	0.003
		Maintained	16.7	9.8	6.89	2.93	10.85	3.57	10.21	
		Declined	21.7	24.0	-2.27	-8.09	3.55	-7.15	2.61	
	Planning regular tasks	Improvement	62.8	66.1	-3.30	-9.35	2.74	-8.37	1.76	0.016
		Maintained	9.8	13.5	-3.73	-7.55	0.08	-6.93	-0.53	
		Declined	27.5	20.4	7.04	1.50	12.57	2.39	11.68	
	Use of mobility device	Improvement	39.2	42.4	-3.19	-10.40	4.02	-9.24	2.85	0.623
		Maintained	15.6	15.5	0.07	-5.80	5.93	-4.85	4.99	
		Declined	45.3	42.1	3.13	-3.70	9.95	-2.60	8.85	
	Walking without rest	Improvement	36.4	43.7	-7.27	-15.04	0.51	-13.79	-0.75	0.033
		Maintained	22.0	23.2	-1.16	-7.70	5.38	-6.65	4.33	
		Declined	41.6	33.1	8.43	2.03	14.82	3.06	13.79	
	Going up or down stairs	Improvement	36.0	31.4	4.60	-3.55	12.75	-2.23	11.44	0.538
		Maintained	26.1	29.1	-2.95	-10.69	4.80	-9.44	3.55	
		Declined	37.9	39.6	-1.66	-8.85	5.54	-7.69	4.38	
Physical/emotional problems limiting social activities	Improvement	46.7	51.8	-5.13	-12.89	2.62	-11.64	1.37	0.389	
	Maintained	24.6	21.0	3.54	-2.88	9.96	-1.84	8.92		
	Declined	28.7	27.1	1.59	-5.29	8.48	-4.18	7.37		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	48.6	50.0	-1.41	-9.55	6.73	-8.23	5.42	0.878
		Maintained	27.1	27.3	-0.23	-6.91	6.46	-5.83	5.38	
		Declined	24.3	22.7	1.63	-4.66	7.93	-3.65	6.91	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.9	88.0	2.93	-2.11	7.97	-1.30	7.15	0.255
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	86.6	83.5	3.11	-3.02	9.24	-2.03	8.25	0.320
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.3	90.0	1.30	-4.04	6.63	-3.18	5.77	0.633
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.9	87.9	1.94	-3.87	7.75	-2.93	6.81	0.512
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	91.5	90.3	1.25	-3.77	6.26	-2.96	5.45	0.625
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.6	93.0	2.55	-1.47	6.58	-0.82	5.93	0.214
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	89.5	85.4	4.12	-1.98	10.22	-1.00	9.23	0.186
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.3	73.1	-2.80	-11.62	6.02	-10.19	4.60	0.534

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	64.2	61.9	2.30	-4.98	9.57	-3.81	8.40	0.536
	Rating of all care received after leaving the hospital	9-10	60.5	60.3	0.20	-8.23	8.62	-6.87	7.26	0.541
		7-8	20.2	23.1	-2.92	-9.64	3.80	-8.56	2.72	
		0-6	19.3	16.6	2.72	-3.62	9.07	-2.59	8.04	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.24: Beneficiary Survey Outcomes for Hospitals, Difference Between BPCI Advanced and Comparison, Black or African American Respondents Relative to White Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	Difference (Black or African American) (pp)	Difference (White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	4.09	0.12	3.97	-2.62	10.56	-1.56	9.50	0.150
		Maintained	-3.58	0.33	-3.91	-8.13	0.30	-7.45	-0.38	
		Declined	-0.51	-0.45	-0.06	-6.81	6.69	-5.72	5.60	
	Planning regular tasks	Improvement	-3.18	-0.73	-2.45	-8.61	3.71	-7.62	2.71	0.488
		Maintained	-0.60	0.86	-1.46	-5.95	3.04	-5.23	2.32	
		Declined	3.78	-0.13	3.91	-2.54	10.35	-1.50	9.31	
	Use of mobility device	Improvement	-2.52	-0.65	-1.87	-8.31	4.56	-7.28	3.53	0.448
		Maintained	2.88	0.00	2.88	-1.61	7.37	-0.89	6.65	
		Declined	-0.36	0.65	-1.01	-7.51	5.49	-6.46	4.45	
	Walking without rest	Improvement	-1.06	-1.24	0.19	-6.54	6.91	-5.46	5.83	0.951
		Maintained	-0.85	0.03	-0.88	-6.46	4.71	-5.56	3.80	
		Declined	1.91	1.22	0.69	-6.20	7.59	-5.09	6.48	
	Going up or down stairs	Improvement	-9.14	-2.49	-6.65	-13.93	0.63	-12.76	-0.55	0.200
		Maintained	3.53	0.74	2.79	-3.55	9.13	-2.53	8.11	
		Declined	5.61	1.75	3.86	-2.79	10.52	-1.72	9.45	
Physical/emotional problems limiting social activities	Improvement	-5.45	-1.19	-4.26	-12.14	3.62	-10.87	2.35	0.550	
	Maintained	0.80	-0.07	0.87	-5.86	7.60	-4.78	6.51		
	Declined	4.66	1.26	3.39	-4.25	11.03	-3.02	9.80		



Outcome		Response Category	Difference (Black or African American) (pp)	Difference (White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	-4.96	-1.13	-3.83	-11.74	4.08	-10.46	2.81	0.168
		Maintained	7.96	0.53	7.44	-0.31	15.18	0.94	13.93	
		Declined	-3.00	0.60	-3.61	-10.81	3.59	-9.64	2.43	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	-0.98	-0.77	-0.21	-5.41	4.99	-4.57	4.15	0.937
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	-5.95	-1.49	-4.46	-10.70	1.79	-9.69	0.78	0.162
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	1.72	-1.14	2.86	-2.54	8.26	-1.67	7.39	0.299
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	-0.80	0.29	-1.09	-6.87	4.69	-5.94	3.76	0.711
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	1.25	-1.00	2.26	-2.73	7.24	-1.93	6.44	0.375
	Able to manage your health needs since returning home	Strongly Agree or Agree	-0.08	0.43	-0.50	-4.37	3.37	-3.75	2.74	0.799
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	-2.69	-2.05	-0.64	-6.39	5.11	-5.46	4.18	0.828
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	3.45	-0.30	3.75	-5.08	12.57	-3.65	11.15	0.405

Outcome		Response Category	Difference (Black or African American) (pp)	Difference (White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	-6.11	-0.42	-5.69	-12.90	1.52	-11.74	0.36	0.122
	Rating of all care received after leaving the hospital	9-10	-0.67	-3.38	2.71	-5.57	11.00	-4.24	9.67	
		7-8	-0.19	0.59	-0.78	-8.04	6.49	-6.87	5.32	
		0-6	0.86	2.80	-1.94	-8.46	4.58	-7.41	3.53	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.25: Beneficiary Survey Outcomes for Hospitals, Difference Between BPCI Advanced and Comparison, Hispanic Respondents Relative to Non-Hispanic White Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	Difference (Hispanic) (pp)	Difference (Non-Hispanic White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	-3.34	0.12	-3.46	-10.70	3.78	-9.53	2.61	0.625
		Maintained	0.87	0.33	0.54	-4.21	5.29	-3.44	4.53	
		Declined	2.47	-0.45	2.92	-3.61	9.44	-2.56	8.39	
	Planning regular tasks	Improvement	-5.17	-0.73	-4.45	-11.50	2.61	-10.36	1.47	0.464
		Maintained	2.04	0.86	1.19	-3.20	5.58	-2.49	4.87	
		Declined	3.13	-0.13	3.26	-3.56	10.08	-2.46	8.98	
	Use of mobility device	Improvement	3.42	-0.65	4.06	-3.62	11.74	-2.38	10.50	0.558
		Maintained	-0.20	0.00	-0.20	-6.01	5.61	-5.07	4.67	
		Declined	-3.21	0.65	-3.86	-11.75	4.04	-10.48	2.76	
	Walking without rest	Improvement	1.09	-1.24	2.33	-6.10	10.76	-4.74	9.40	0.117
		Maintained	4.58	0.03	4.55	-1.83	10.94	-0.80	9.91	
		Declined	-5.67	1.22	-6.88	-14.23	0.47	-13.05	-0.72	
	Going up or down stairs	Improvement	0.95	-2.49	3.44	-4.87	11.76	-3.53	10.42	0.349
		Maintained	3.13	0.74	2.39	-4.24	9.01	-3.17	7.94	
		Declined	-4.08	1.75	-5.83	-13.78	2.12	-12.49	0.84	
	Physical/emotional problems limiting social activities	Improvement	-4.00	-1.19	-2.81	-10.88	5.26	-9.58	3.95	0.358
		Maintained	4.39	-0.07	4.46	-1.64	10.57	-0.66	9.58	
		Declined	-0.39	1.26	-1.65	-9.16	5.85	-7.95	4.64	

Outcome		Response Category	Difference (Hispanic) (pp)	Difference (Non-Hispanic White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	-0.61	-1.13	0.52	-7.81	8.86	-6.47	7.51	0.556
		Maintained	3.63	0.53	3.11	-4.79	11.00	-3.52	9.73	
		Declined	-3.03	0.60	-3.63	-10.74	3.48	-9.60	2.34	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	-2.75	-0.77	-1.98	-7.18	3.21	-6.34	2.37	0.454
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	-5.75	-1.49	-4.26	-10.32	1.81	-9.34	0.83	0.169
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	-3.99	-1.14	-2.85	-7.42	1.72	-6.68	0.98	0.222
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	-3.29	0.29	-3.58	-8.34	1.17	-7.57	0.40	0.139
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	-2.11	-1.00	-1.11	-6.00	3.79	-5.21	3.00	0.657
	Able to manage your health needs since returning home	Strongly Agree or Agree	-1.83	0.43	-2.25	-5.87	1.37	-5.29	0.78	0.222
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	-4.30	-2.05	-2.25	-7.79	3.29	-6.90	2.40	0.426
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	-7.08	-0.30	-6.78	-16.13	2.58	-14.62	1.07	0.155
	Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	-1.16	-0.42	-0.73	-9.00	7.53	-7.67	6.20
Rating of all care received after leaving the hospital		9-10	-3.92	-3.38	-0.53	-8.50	7.44	-7.22	6.15	0.919
		7-8	2.00	0.59	1.41	-6.04	8.86	-4.84	7.66	
		0-6	1.92	2.80	-0.87	-6.87	5.12	-5.90	4.16	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.26: Beneficiary Survey Outcomes for Hospitals, Difference Between BPCI Advanced and Comparison, Dually Eligible Respondents Relative to Non-Dually Eligible Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	-2.29	0.38	-2.67	-7.83	2.49	-7.00	1.66	0.560
		Maintained	0.52	-0.48	1.00	-2.25	4.26	-1.73	3.73	
		Declined	1.76	0.10	1.67	-3.72	7.05	-2.85	6.18	
	Planning regular tasks	Improvement	-5.00	0.00	-5.01	-10.09	0.08	-9.27	-0.74	0.062
		Maintained	-0.22	0.84	-1.06	-4.50	2.38	-3.95	1.82	
		Declined	5.23	-0.84	6.07	1.02	11.12	1.83	10.31	
	Use of mobility device	Improvement	-2.11	-0.17	-1.94	-7.44	3.56	-6.56	2.67	0.588
		Maintained	1.82	-0.01	1.83	-1.88	5.54	-1.29	4.94	
		Declined	0.30	0.18	0.11	-5.27	5.50	-4.40	4.63	
	Walking without rest	Improvement	-1.73	-0.42	-1.31	-7.03	4.41	-6.11	3.49	0.835
		Maintained	-0.21	0.16	-0.37	-5.66	4.92	-4.81	4.07	
		Declined	1.94	0.27	1.68	-3.96	7.31	-3.05	6.40	
	Going up or down stairs	Improvement	-4.58	-0.94	-3.64	-9.82	2.53	-8.82	1.53	0.393
		Maintained	0.50	0.30	0.20	-5.21	5.60	-4.34	4.73	
		Declined	4.08	0.64	3.45	-1.93	8.82	-1.06	7.95	
	Physical/emotional problems limiting social activities	Improvement	-3.24	-0.73	-2.51	-9.04	4.03	-7.98	2.97	0.747
		Maintained	0.90	0.06	0.84	-4.39	6.07	-3.54	5.23	
		Declined	2.34	0.68	1.66	-3.91	7.24	-3.01	6.34	
	Pain limiting regular activities	Improvement	0.60	-0.81	1.40	-5.08	7.89	-4.03	6.84	0.856
		Maintained	1.23	1.08	0.15	-5.78	6.09	-4.82	5.13	
		Declined	-1.83	-0.27	-1.56	-7.30	4.18	-6.37	3.25	

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	0.16	-0.95	1.10	-2.44	4.65	-1.87	4.08	0.541
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	-1.08	-2.29	1.21	-3.45	5.87	-2.70	5.12	0.610
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	0.51	-1.33	1.84	-2.10	5.77	-1.46	5.14	0.360
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	-0.31	-0.70	0.38	-3.43	4.20	-2.82	3.58	0.844
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	0.70	-1.48	2.18	-1.76	6.12	-1.12	5.49	0.277
	Able to manage your health needs since returning home	Strongly Agree or Agree	-0.01	-0.03	0.02	-3.20	3.23	-2.68	2.71	0.992
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	-2.36	-2.58	0.22	-4.89	5.34	-4.06	4.51	0.932
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	-0.76	-0.75	-0.01	-6.92	6.91	-5.81	5.79	0.998
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	-0.79	-0.03	-0.76	-6.67	5.15	-5.72	4.20	0.801
	Rating of all care received after leaving the hospital	9-10	-2.94	-3.24	0.30	-6.25	6.85	-5.20	5.79	0.932
		7-8	1.94	1.26	0.67	-5.26	6.61	-4.31	5.65	
0-6		1.00	1.97	-0.97	-6.30	4.35	-5.44	3.50		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.27: Beneficiary Survey Outcomes for PGP, Difference Between BPCI Advanced and Comparison Outcomes Among Dually Eligible Relative to Non-Dually Eligible Respondents, Waves 2 and 3 (July-August 2021; July-August 2022)**

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	-4.62	-1.01	-3.60	-10.26	3.06	-9.19	1.98	0.003
		Maintained	6.89	-0.51	7.40	3.15	11.65	3.84	10.96	
		Declined	-2.27	1.52	-3.80	-9.92	2.32	-8.93	1.33	
	Planning regular tasks	Improvement	-3.30	0.77	-4.08	-10.53	2.37	-9.49	1.33	0.050
		Maintained	-3.73	-0.99	-2.74	-6.86	1.38	-6.20	0.72	
		Declined	7.04	0.22	6.82	0.98	12.65	1.92	11.71	
	Use of mobility device	Improvement	-3.19	0.19	-3.38	-10.97	4.21	-9.74	2.98	0.679
		Maintained	0.07	-1.48	1.54	-4.53	7.62	-3.55	6.64	
		Declined	3.13	1.29	1.84	-5.34	9.01	-4.18	7.85	
	Walking without rest	Improvement	-7.27	-0.87	-6.40	-14.45	1.64	-13.15	0.34	0.047
		Maintained	-1.16	1.19	-2.35	-9.29	4.58	-8.17	3.46	
		Declined	8.43	-0.33	8.76	1.80	15.71	2.93	14.59	
	Going up or down stairs	Improvement	4.60	0.61	3.99	-4.46	12.44	-3.10	11.08	0.648
		Maintained	-2.95	-0.42	-2.53	-10.55	5.49	-9.25	4.19	
		Declined	-1.66	-0.19	-1.46	-9.03	6.11	-7.81	4.88	
	Physical/emotional problems limiting social activities	Improvement	-5.13	-0.69	-4.44	-12.66	3.78	-11.34	2.45	0.469
		Maintained	3.54	-0.36	3.90	-3.05	10.84	-1.92	9.72	
		Declined	1.59	1.05	0.54	-6.80	7.89	-5.61	6.70	
	Pain limiting regular activities	Improvement	-1.41	1.94	-3.35	-11.89	5.19	-10.51	3.81	0.654
		Maintained	-0.23	-0.67	0.44	-6.65	7.53	-5.51	6.39	
		Declined	1.63	-1.28	2.91	-3.69	9.51	-2.63	8.45	

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	2.93	-0.52	3.44	-1.81	8.70	-0.96	7.85	0.199
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	3.11	-0.75	3.86	-2.53	10.25	-1.50	9.22	0.236
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	1.30	-0.49	1.79	-3.81	7.38	-2.90	6.48	0.531
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	1.94	0.31	1.64	-4.50	7.77	-3.51	6.78	0.601
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	1.25	-0.25	1.50	-3.79	6.78	-2.93	5.93	0.579
	Able to manage your health needs since returning home	Strongly Agree or Agree	2.55	0.03	2.52	-1.79	6.82	-1.09	6.13	0.251
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	4.12	0.50	3.61	-2.70	9.93	-1.68	8.91	0.262
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	-2.80	1.87	-4.67	-13.96	4.62	-12.45	3.12	0.324
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	2.30	-0.98	3.27	-4.50	11.05	-3.25	9.79	0.409
	Rating of all care received after leaving the hospital	9-10	0.20	0.73	-0.53	-9.50	8.43	-8.05	6.98	0.762
		7-8	-2.92	-1.24	-1.68	-8.97	5.62	-7.80	4.44	
0-6		2.72	0.51	2.21	-4.42	8.84	-3.35	7.77		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.28: Beneficiary Survey Sample Sizes, Wave 3 (July-August 2022)**

Analytic Sample		BPCI Advanced Respondents (N)	Comparison Respondents (N)
Hospital	All Hospital Episodes	3,451	3,619
	All Medical CESLGs	1,989	2,075
	All Surgical CESLGs	1,462	1,544
	Cardiac Care	529	548
	Cardiac Procedures	410	453
	Gastrointestinal Care	485	556
	Medical and Critical Care	539	543
	Neurological	436	428
	Orthopedics	523	572
	Spinal Procedures	465	467
PGP	All PGP Episodes	1,608	1,694
	All Medical CESLGs	820	862
	All Surgical CESLGs	788	832
	Medical and Critical Care	428	467
	Orthopedics	510	544

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit M.29: Beneficiary Survey Outcomes for Hospitals, Pooled Across all Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	59.5	56.8	2.69	-0.43	5.82	0.07	5.31	0.234
		Maintained	15.3	15.9	-0.63	-3.33	2.07	-2.89	1.64	
		Declined	25.2	27.3	-2.06	-5.30	1.17	-4.78	0.65	
	Planning regular tasks	Improvement	59.3	61.3	-2.04	-5.39	1.30	-4.85	0.76	0.485
		Maintained	12.4	11.8	0.67	-1.87	3.21	-1.46	2.80	
		Declined	28.3	26.9	1.37	-2.02	4.77	-1.48	4.22	
	Use of mobility device	Improvement	38.8	39.2	-0.48	-3.44	2.48	-2.96	2.00	0.151
		Maintained	14.6	12.1	2.53	-0.05	5.10	0.37	4.69	
		Declined	46.6	48.6	-2.05	-5.33	1.23	-4.80	0.70	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Walking without rest	Improvement	31.6	32.6	-1.02	-4.15	2.12	-3.64	1.61	0.707
		Maintained	24.5	23.3	1.14	-1.84	4.12	-1.36	3.64	
		Declined	43.9	44.0	-0.12	-3.44	3.20	-2.91	2.66	
	Going up or down stairs	Improvement	29.9	30.0	-0.10	-3.19	2.98	-2.69	2.48	0.990
		Maintained	25.9	26.1	-0.13	-3.28	3.03	-2.77	2.52	
		Declined	44.2	43.9	0.23	-3.01	3.47	-2.49	2.95	
	Physical/emotional problems limiting social activities	Improvement	45.4	45.8	-0.44	-4.45	3.58	-3.81	2.93	0.858
		Maintained	23.9	24.6	-0.73	-4.67	3.21	-4.04	2.57	
		Declined	30.8	29.6	1.17	-3.05	5.39	-2.37	4.71	
	Pain limiting regular activities	Improvement	46.2	44.2	2.00	-2.04	6.04	-1.39	5.38	0.612
		Maintained	27.1	27.6	-0.57	-4.31	3.17	-3.71	2.57	
		Declined	26.7	28.1	-1.43	-5.35	2.50	-4.72	1.86	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	88.2	90.2	-2.00	-4.75	0.74	-4.31	0.30	0.152
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	84.4	85.6	-1.19	-4.70	2.32	-4.13	1.75	0.506
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	87.7	89.0	-1.30	-4.16	1.55	-3.70	1.09	0.370
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	88.6	88.4	0.21	-2.84	3.26	-2.35	2.77	0.892
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	87.8	89.0	-1.14	-4.34	2.05	-3.82	1.53	0.483
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.4	92.7	-0.25	-2.90	2.41	-2.47	1.98	0.856

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience (continued)	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	83.5	86.4	-2.92	-6.60	0.76	-6.00	0.17	0.120
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	71.6	69.0	2.59	-2.82	8.00	-1.94	7.12	0.348
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	56.3	56.5	-0.25	-4.40	3.91	-3.73	3.24	0.907
	Rating of all care received after leaving the hospital	9-10	51.0	56.2	-5.25	-9.52	-0.98	-8.83	-1.67	0.042
		7-8	26.0	24.5	1.49	-2.37	5.36	-1.75	4.73	
		0-6	23.0	19.3	3.75	-0.03	7.53	0.58	6.92	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.30: Beneficiary Survey Outcomes for Hospitals, Medical Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	57.0	53.7	3.28	-0.34	6.89	0.25	6.31	0.203
		Maintained	16.2	17.1	-0.82	-3.94	2.29	-3.44	1.79	
		Declined	26.7	29.2	-2.45	-6.18	1.28	-5.58	0.68	
	Planning regular tasks	Improvement	56.3	58.1	-1.78	-5.66	2.10	-5.03	1.48	0.664
		Maintained	13.2	12.5	0.63	-2.29	3.54	-1.82	3.07	
		Declined	30.6	29.4	1.15	-2.77	5.08	-2.14	4.44	
	Use of mobility device	Improvement	36.5	36.8	-0.36	-3.81	3.10	-3.25	2.54	0.089
		Maintained	15.3	12.1	3.22	0.28	6.15	0.76	5.68	
		Declined	48.2	51.1	-2.86	-6.67	0.94	-6.05	0.33	
	Walking without rest	Improvement	28.3	29.1	-0.82	-4.44	2.79	-3.86	2.21	0.847
		Maintained	25.5	24.6	0.90	-2.53	4.32	-1.97	3.77	
		Declined	46.3	46.3	-0.07	-3.91	3.77	-3.29	3.15	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Going up or down stairs	Improvement	26.8	26.8	-0.03	-3.57	3.51	-3.00	2.94	1.000
		Maintained	26.6	26.6	0.00	-3.62	3.61	-3.03	3.03	
		Declined	46.7	46.6	0.03	-3.71	3.78	-3.11	3.17	
	Physical/emotional problems limiting social activities	Improvement	43.0	43.2	-0.24	-4.89	4.42	-4.14	3.67	0.885
		Maintained	24.9	25.8	-0.91	-5.46	3.63	-4.72	2.90	
		Declined	32.2	31.0	1.15	-3.74	6.04	-2.95	5.25	
	Pain limiting regular activities	Improvement	43.6	41.6	2.05	-2.62	6.73	-1.87	5.97	0.668
		Maintained	28.6	29.1	-0.44	-4.76	3.88	-4.06	3.18	
		Declined	27.8	29.4	-1.61	-6.17	2.94	-5.43	2.21	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	87.5	89.7	-2.22	-5.38	0.94	-4.87	0.43	0.169
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	83.2	84.7	-1.56	-5.61	2.49	-4.96	1.83	0.449
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	86.9	88.3	-1.40	-4.72	1.93	-4.18	1.39	0.410
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	87.8	87.3	0.46	-3.13	4.05	-2.55	3.47	0.803
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	86.9	88.0	-1.14	-4.88	2.61	-4.27	2.00	0.551
	Able to manage your health needs since returning home	Strongly Agree or Agree	91.8	91.9	-0.07	-3.16	3.02	-2.66	2.52	0.965
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	82.1	85.3	-3.19	-7.50	1.11	-6.80	0.42	0.146

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience (continued)	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.4	68.0	2.42	-3.75	8.60	-2.75	7.60	0.441
	Overall satisfaction with recovery	Quite a bit or Extreme	54.1	54.1	0.00	-4.81	4.80	-4.03	4.03	1.000
Satisfaction with Care	Rating of all care received after leaving the hospital	9-10	48.8	54.1	-5.28	-10.20	-0.36	-9.41	-1.16	0.066
		7-8	26.4	25.5	0.89	-3.58	5.35	-2.86	4.63	
		0-6	24.8	20.4	4.40	0.05	8.74	0.75	8.04	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.31: Beneficiary Survey Outcomes for Hospitals, Surgical Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	75.0	75.6	-0.55	-3.30	2.20	-2.85	1.76	0.728
		Maintained	9.6	8.8	0.82	-1.20	2.83	-0.87	2.51	
		Declined	15.4	15.6	-0.27	-2.77	2.23	-2.37	1.83	
	Planning regular tasks	Improvement	77.7	80.9	-3.25	-6.06	-0.44	-5.61	-0.89	0.071
		Maintained	8.0	7.2	0.79	-1.15	2.73	-0.83	2.42	
		Declined	14.4	11.9	2.46	-0.02	4.94	0.38	4.54	
	Use of mobility device	Improvement	53.0	53.7	-0.69	-4.03	2.66	-3.49	2.12	0.340
		Maintained	10.7	12.0	-1.32	-3.72	1.08	-3.33	0.69	
		Declined	36.2	34.2	2.01	-1.11	5.12	-0.60	4.62	
	Walking without rest	Improvement	51.6	53.5	-1.91	-5.06	1.23	-4.55	0.72	0.133
		Maintained	18.7	15.9	2.78	0.06	5.51	0.50	5.07	
		Declined	29.8	30.6	-0.87	-3.69	1.95	-3.23	1.49	
Going up or down stairs	Improvement	48.7	49.1	-0.39	-4.28	3.49	-3.65	2.86	0.556	
	Maintained	22.0	23.1	-1.11	-4.36	2.14	-3.83	1.61		
	Declined	29.2	27.7	1.50	-1.50	4.51	-1.01	4.02		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Physical/emotional problems limiting social activities	Improvement	60.4	61.6	-1.27	-4.85	2.32	-4.27	1.74	0.787
		Maintained	17.9	17.3	0.57	-2.34	3.47	-1.87	3.00	
		Declined	21.8	21.1	0.70	-2.53	3.93	-2.01	3.41	
	Pain limiting regular activities	Improvement	62.2	60.4	1.80	-1.74	5.34	-1.16	4.77	0.574
		Maintained	17.5	18.9	-1.43	-4.61	1.76	-4.10	1.25	
		Declined	20.3	20.7	-0.38	-3.35	2.60	-2.87	2.12	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	92.5	93.0	-0.49	-2.52	1.54	-2.19	1.21	0.637
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.9	90.7	1.23	-1.38	3.83	-0.96	3.41	0.356
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	92.6	92.9	-0.27	-2.47	1.92	-2.12	1.57	0.807
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.3	94.2	-0.96	-2.95	1.03	-2.63	0.71	0.344
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.2	94.2	-0.97	-3.28	1.35	-2.91	0.97	0.413
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.7	96.7	-1.05	-2.59	0.49	-2.34	0.24	0.180
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	91.1	92.3	-1.28	-3.56	1.01	-3.19	0.64	0.273
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	78.8	74.9	3.85	-1.31	9.01	-0.47	8.17	0.144

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	69.8	71.6	-1.82	-5.19	1.56	-4.64	1.01	0.291
	Rating of all care received after leaving the hospital	9-10	64.4	69.3	-4.99	-8.58	-1.39	-8.00	-1.97	0.007
		7-8	23.7	18.6	5.18	1.94	8.43	2.46	7.91	
		0-6	11.9	12.1	-0.20	-2.65	2.26	-2.26	1.86	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.32: Beneficiary Survey Outcomes for PGP, Pooled Across all Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	68.7	68.2	0.46	-2.52	3.44	-2.04	2.96	0.355
		Maintained	13.1	11.7	1.33	-0.99	3.65	-0.61	3.28	
		Declined	18.2	20.0	-1.79	-4.65	1.06	-4.18	0.60	
	Planning regular tasks	Improvement	70.9	70.9	0.00	-2.66	2.66	-2.23	2.23	0.846
		Maintained	9.3	9.9	-0.54	-2.55	1.48	-2.23	1.15	
		Declined	19.8	19.3	0.54	-2.02	3.10	-1.61	2.69	
	Use of mobility device	Improvement	46.7	45.2	1.46	-1.59	4.50	-1.10	4.01	0.592
		Maintained	13.1	13.9	-0.84	-3.09	1.42	-2.72	1.05	
		Declined	40.2	40.8	-0.62	-3.67	2.43	-3.18	1.93	
	Walking without rest	Improvement	43.0	43.7	-0.73	-4.00	2.55	-3.47	2.02	0.750
		Maintained	21.6	20.5	1.08	-1.71	3.86	-1.26	3.41	
		Declined	35.5	35.8	-0.35	-3.25	2.55	-2.78	2.08	
	Going up or down stairs	Improvement	43.4	39.5	3.91	0.34	7.47	0.92	6.89	0.049
		Maintained	22.5	23.2	-0.73	-3.83	2.38	-3.33	1.88	
		Declined	34.1	37.3	-3.18	-6.03	-0.32	-5.57	-0.79	
Physical/emotional problems limiting social activities	Improvement	56.0	55.9	0.10	-3.53	3.72	-2.94	3.13	0.983	
	Maintained	20.5	20.3	0.21	-2.88	3.30	-2.38	2.80		
	Declined	23.5	23.8	-0.30	-3.82	3.21	-3.25	2.64		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	55.0	55.2	-0.20	-3.83	3.43	-3.24	2.84	0.246
		Maintained	26.0	23.4	2.57	-0.94	6.09	-0.38	5.52	
		Declined	19.0	21.4	-2.37	-5.68	0.93	-5.15	0.40	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	92.8	92.3	0.56	-1.46	2.58	-1.13	2.25	0.586
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	89.3	88.6	0.71	-2.07	3.50	-1.62	3.05	0.615
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.3	91.1	0.21	-2.35	2.77	-1.93	2.36	0.871
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	91.2	89.2	1.95	-0.76	4.66	-0.32	4.22	0.159
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	92.0	91.7	0.23	-2.14	2.60	-1.76	2.21	0.851
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.5	94.7	0.82	-0.98	2.61	-0.69	2.32	0.372
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	89.7	89.5	0.17	-2.56	2.90	-2.12	2.45	0.905
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	68.5	76.5	-7.99	-12.69	-3.29	-11.93	-4.05	0.001

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	63.4	64.4	-0.99	-4.47	2.50	-3.91	1.94	0.579
	Rating of all care received after leaving the hospital	9-10	63.1	63.7	-0.58	-4.47	3.31	-3.84	2.69	0.957
		7-8	21.8	21.4	0.40	-3.00	3.80	-2.45	3.25	
		0-6	15.1	14.9	0.18	-2.89	3.25	-2.40	2.76	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.33: Beneficiary Survey Outcomes for PGPs, Medical Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	55.5	58.0	-2.50	-6.86	1.86	-6.16	1.15	0.201
		Maintained	19.7	16.5	3.25	-0.43	6.92	0.17	6.33	
		Declined	24.8	25.5	-0.75	-5.16	3.67	-4.44	2.95	
	Planning regular tasks	Improvement	55.1	57.5	-2.41	-6.60	1.78	-5.92	1.10	0.528
		Maintained	14.3	13.5	0.81	-2.44	4.06	-1.91	3.53	
		Declined	30.6	29.0	1.60	-2.47	5.68	-1.81	5.01	
	Use of mobility device	Improvement	34.4	34.5	-0.02	-3.97	3.92	-3.33	3.28	0.412
		Maintained	13.7	15.7	-2.02	-5.13	1.09	-4.63	0.58	
		Declined	51.9	49.9	2.05	-2.24	6.33	-1.54	5.64	
	Walking without rest	Improvement	26.0	29.2	-3.19	-7.86	1.49	-7.10	0.73	0.306
		Maintained	24.6	24.5	0.06	-3.92	4.04	-3.27	3.39	
		Declined	49.5	46.3	3.13	-1.19	7.44	-0.49	6.74	
	Going up or down stairs	Improvement	29.8	27.3	2.50	-1.99	7.00	-1.26	6.27	0.467
		Maintained	22.0	24.1	-2.04	-6.03	1.95	-5.39	1.30	
		Declined	48.2	48.6	-0.46	-4.93	4.01	-4.20	3.28	
	Physical/emotional problems limiting social activities	Improvement	44.1	43.3	0.76	-4.66	6.19	-3.78	5.30	0.891
		Maintained	25.4	24.8	0.65	-3.78	5.08	-3.06	4.36	
		Declined	30.5	31.9	-1.41	-7.23	4.41	-6.29	3.47	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status (continued)	Pain limiting regular activities	Improvement	38.2	41.8	-3.67	-8.96	1.63	-8.10	0.77	0.123
		Maintained	36.2	30.5	5.68	0.16	11.19	1.05	10.30	
		Declined	25.7	27.7	-2.01	-7.33	3.32	-6.47	2.45	
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.7	90.7	0.03	-3.34	3.39	-2.79	2.84	0.988
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	86.9	86.5	0.39	-4.02	4.80	-3.31	4.08	0.863
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	89.3	89.2	0.15	-4.08	4.38	-3.39	3.69	0.944
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.0	84.9	4.08	-0.47	8.62	0.27	7.88	0.079
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.1	89.3	0.87	-2.80	4.54	-2.20	3.95	0.641
	Able to manage your health needs since returning home	Strongly Agree or Agree	94.5	93.5	0.99	-1.88	3.86	-1.41	3.39	0.498
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	88.0	85.2	2.82	-1.63	7.26	-0.90	6.54	0.213
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	66.4	72.4	-5.99	-12.32	0.33	-11.28	-0.70	0.063
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	53.0	53.5	-0.50	-5.90	4.90	-5.03	4.03	0.856
	Rating of all care received after leaving the hospital	9-10	54.3	52.8	1.45	-4.22	7.13	-3.30	6.21	0.808
		7-8	26.7	26.6	0.14	-4.90	5.18	-4.08	4.36	
		0-6	19.0	20.6	-1.60	-6.59	3.40	-5.78	2.59	

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.34: Beneficiary Survey Outcomes for PGPs, Surgical Episodes, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	81.9	78.6	3.29	-0.45	7.02	0.16	6.42	0.151
		Maintained	6.7	6.6	0.03	-2.29	2.35	-1.91	1.97	
		Declined	11.4	14.8	-3.32	-6.71	0.07	-6.16	-0.48	
	Planning regular tasks	Improvement	86.9	84.4	2.52	-0.31	5.36	0.15	4.90	0.119
		Maintained	4.3	6.1	-1.85	-3.99	0.29	-3.64	-0.06	
		Declined	8.9	9.5	-0.67	-3.48	2.14	-3.03	1.68	
	Use of mobility device	Improvement	59.1	56.1	2.98	-1.55	7.51	-0.81	6.78	0.273
		Maintained	12.6	12.2	0.39	-2.92	3.69	-2.38	3.16	
		Declined	28.3	31.7	-3.37	-7.51	0.77	-6.83	0.10	
	Walking without rest	Improvement	60.2	58.5	1.77	-2.50	6.04	-1.81	5.35	0.103
		Maintained	18.5	16.3	2.20	-1.55	5.96	-0.94	5.35	
		Declined	21.2	25.2	-3.97	-7.71	-0.24	-7.10	-0.85	
	Going up or down stairs	Improvement	56.7	52.0	4.72	-0.53	9.98	0.32	9.13	0.002
		Maintained	23.4	22.0	1.40	-3.24	6.05	-2.49	5.29	
		Declined	19.9	26.0	-6.13	-9.56	-2.69	-9.00	-3.25	
	Physical/emotional problems limiting social activities	Improvement	68.2	68.9	-0.66	-5.15	3.83	-4.42	3.10	0.943
		Maintained	15.6	15.5	0.06	-3.75	3.88	-3.13	3.26	
		Declined	16.2	15.6	0.59	-3.06	4.25	-2.47	3.65	
Pain limiting regular activities	Improvement	72.1	68.3	3.78	-0.49	8.05	0.21	7.36	0.114	
	Maintained	15.8	16.4	-0.56	-4.49	3.37	-3.85	2.73		
	Declined	12.1	15.3	-3.22	-6.62	0.17	-6.06	-0.38		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	95.0	94.0	1.00	-1.20	3.20	-0.84	2.84	0.373
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.6	90.7	0.96	-2.23	4.16	-1.71	3.64	0.553
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	93.1	92.7	0.32	-2.60	3.24	-2.12	2.76	0.830
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.1	93.3	-0.20	-2.95	2.55	-2.51	2.10	0.886
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.7	93.9	-0.23	-2.95	2.48	-2.51	2.04	0.865
	Able to manage your health needs since returning home	Strongly Agree or Agree	96.4	95.8	0.63	-1.40	2.67	-1.07	2.34	0.543
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	91.3	93.1	-1.72	-4.80	1.36	-4.30	0.86	0.273
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.8	80.5	-9.78	-15.94	-3.62	-14.94	-4.62	0.002
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	73.8	75.4	-1.56	-6.18	3.06	-5.43	2.31	0.507
	Rating of all care received after leaving the hospital	9-10	72.0	74.6	-2.64	-7.52	2.25	-6.73	1.46	0.442
		7-8	16.8	16.2	0.62	-3.75	5.00	-3.04	4.29	
0-6	11.2	9.2	2.01	-1.43	5.45	-0.87	4.89			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.35: Beneficiary Survey Outcomes for Hospitals, Cardiac Care CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	60.9	61.4	-0.44	-5.81	4.93	-4.93	4.06	0.986
		Maintained	19.0	19.0	0.07	-4.10	4.24	-3.42	3.56	
		Declined	20.0	19.7	0.37	-4.75	5.49	-3.92	4.66	
	Planning regular tasks	Improvement	63.3	67.2	-3.93	-9.24	1.39	-8.38	0.52	0.232
		Maintained	14.3	14.1	0.20	-4.15	4.55	-3.45	3.84	
		Declined	22.4	18.7	3.73	-0.81	8.27	-0.07	7.53	
	Use of mobility device	Improvement	39.4	40.8	-1.38	-6.23	3.46	-5.44	2.67	0.745
		Maintained	16.9	15.5	1.38	-2.74	5.51	-2.07	4.84	
		Declined	43.7	43.7	0.00	-5.43	5.42	-4.54	4.54	
	Walking without rest	Improvement	30.6	31.1	-0.59	-5.75	4.56	-4.91	3.73	0.974
		Maintained	29.4	29.3	0.13	-4.59	4.85	-3.82	4.09	
		Declined	40.0	39.6	0.46	-4.89	5.81	-4.02	4.94	
	Going up or down stairs	Improvement	27.8	30.0	-2.18	-7.66	3.29	-6.77	2.40	0.703
		Maintained	30.5	29.1	1.43	-3.69	6.55	-2.86	5.72	
		Declined	41.7	40.9	0.75	-5.36	6.86	-4.36	5.87	
	Physical/emotional problems limiting social activities	Improvement	50.3	46.4	3.87	-2.96	10.70	-1.84	9.58	0.538
		Maintained	24.3	26.4	-2.03	-7.99	3.92	-7.02	2.95	
		Declined	25.3	27.2	-1.84	-7.81	4.13	-6.84	3.16	
Pain limiting regular activities	Improvement	41.3	46.2	-4.92	-11.57	1.73	-10.48	0.65	0.279	
	Maintained	33.5	28.9	4.58	-1.68	10.85	-0.66	9.83		
	Declined	25.3	24.9	0.33	-5.26	5.92	-4.35	5.01		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.6	90.4	-0.72	-5.01	3.57	-4.31	2.88	0.742
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	86.5	84.0	2.50	-3.13	8.14	-2.21	7.22	0.383
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.9	89.5	-0.56	-4.72	3.59	-4.04	2.92	0.790
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.3	89.5	-0.26	-4.81	4.29	-4.06	3.55	0.911
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.8	89.8	0.93	-3.22	5.09	-2.55	4.41	0.660
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.0	93.3	-1.24	-5.07	2.60	-4.45	1.97	0.526
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	84.6	83.1	1.53	-4.08	7.13	-3.17	6.22	0.593
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	72.7	65.3	7.37	-0.74	15.48	0.59	14.15	0.075
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	55.1	55.9	-0.84	-7.17	5.49	-6.14	4.46	0.794
	Rating of all care received after leaving the hospital	9-10	51.8	52.8	-0.98	-7.85	5.89	-6.73	4.77	0.074
		7-8	29.3	23.1	6.18	0.05	12.32	1.05	11.32	
0-6	18.9	24.1	-5.20	-11.02	0.61	-10.07	-0.33			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.36: Beneficiary Survey Outcomes for Hospitals, Gastrointestinal Care CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	67.9	69.4	-1.53	-6.55	3.48	-5.73	2.67	0.597
		Maintained	10.7	11.6	-0.85	-4.81	3.11	-4.16	2.47	
		Declined	21.4	19.0	2.38	-2.24	7.00	-1.49	6.25	
	Planning regular tasks	Improvement	62.4	67.8	-5.43	-10.80	-0.07	-9.92	-0.94	0.140
		Maintained	12.2	10.7	1.50	-2.39	5.38	-1.76	4.75	
		Declined	25.4	21.4	3.93	-1.28	9.15	-0.43	8.30	
	Use of mobility device	Improvement	44.4	46.2	-1.76	-7.23	3.70	-6.34	2.81	0.777
		Maintained	14.4	13.2	1.16	-2.92	5.23	-2.26	4.57	
		Declined	41.2	40.6	0.61	-4.69	5.90	-3.82	5.04	
	Walking without rest	Improvement	34.2	36.9	-2.68	-7.63	2.27	-6.82	1.47	0.016
		Maintained	31.6	24.1	7.51	2.40	12.61	3.23	11.78	
		Declined	34.2	39.1	-4.83	-10.18	0.52	-9.31	-0.35	
	Going up or down stairs	Improvement	35.5	37.1	-1.62	-6.87	3.64	-6.02	2.78	0.469
		Maintained	26.2	28.0	-1.82	-7.16	3.52	-6.29	2.65	
		Declined	38.3	34.9	3.44	-2.04	8.92	-1.15	8.03	
	Physical/emotional problems limiting social activities	Improvement	44.7	50.2	-5.45	-11.64	0.74	-10.63	-0.27	0.206
		Maintained	27.2	26.1	1.17	-4.40	6.75	-3.50	5.84	
		Declined	28.1	23.8	4.28	-1.86	10.41	-0.86	9.41	
	Pain limiting regular activities	Improvement	44.0	46.2	-2.26	-8.64	4.12	-7.60	3.08	0.702
		Maintained	29.0	29.1	-0.12	-6.31	6.06	-5.30	5.05	
		Declined	27.1	24.7	2.39	-3.75	8.52	-2.75	7.52	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	94.1	93.3	0.76	-2.23	3.76	-1.75	3.28	0.617
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	85.9	89.3	-3.41	-8.35	1.52	-7.55	0.72	0.175
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	90.8	90.0	0.75	-3.38	4.88	-2.71	4.21	0.721
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	89.3	87.7	1.65	-2.91	6.21	-2.17	5.46	0.478
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	88.4	89.2	-0.78	-5.39	3.82	-4.64	3.07	0.738
	Able to manage your health needs since returning home	Strongly Agree or Agree	94.2	92.7	1.54	-2.02	5.10	-1.44	4.52	0.397
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	83.2	84.5	-1.31	-6.94	4.33	-6.02	3.41	0.648
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	64.2	61.7	2.48	-5.76	10.73	-4.41	9.37	0.554
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	58.5	63.9	-5.39	-11.64	0.86	-10.63	-0.16	0.091
	Rating of all care received after leaving the hospital	9-10	52.8	55.6	-2.81	-9.66	4.05	-8.55	2.93	0.357
		7-8	29.8	25.3	4.50	-1.69	10.69	-0.69	9.68	
0-6	17.4	19.1	-1.69	-7.11	3.73	-6.23	2.84			

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.37: Beneficiary Survey Outcomes for Hospitals, Medical and Critical Care CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	55.3	50.1	5.21	0.07	10.36	0.90	9.52	0.123
		Maintained	16.4	17.3	-0.84	-5.22	3.55	-4.51	2.84	
		Declined	28.2	32.6	-4.38	-9.55	0.80	-8.71	-0.04	
	Planning regular tasks	Improvement	54.6	55.9	-1.33	-6.73	4.07	-5.85	3.20	0.848
		Maintained	13.3	12.4	0.92	-3.12	4.96	-2.46	4.30	
		Declined	32.1	31.7	0.41	-5.25	6.06	-4.33	5.14	
	Use of mobility device	Improvement	34.5	34.1	0.40	-4.51	5.31	-3.71	4.51	0.107
		Maintained	15.4	11.3	4.15	0.05	8.26	0.72	7.59	
		Declined	50.1	54.6	-4.55	-10.00	0.90	-9.12	0.01	
	Walking without rest	Improvement	26.7	27.2	-0.45	-5.48	4.58	-4.66	3.76	0.981
		Maintained	24.2	24.2	-0.03	-4.93	4.88	-4.14	4.08	
		Declined	49.1	48.6	0.48	-5.02	5.97	-4.12	5.08	
	Going up or down stairs	Improvement	25.1	24.5	0.53	-4.64	5.70	-3.80	4.86	0.970
		Maintained	25.9	26.5	-0.56	-5.62	4.50	-4.79	3.67	
		Declined	49.0	49.0	0.03	-5.29	5.35	-4.43	4.49	
	Physical/emotional problems limiting social activities	Improvement	41.1	42.2	-1.13	-7.45	5.18	-6.42	4.15	0.863
		Maintained	25.1	25.8	-0.72	-7.21	5.78	-6.15	4.72	
		Declined	33.8	32.0	1.85	-4.93	8.63	-3.83	7.53	
Pain limiting regular activities	Improvement	44.6	39.7	4.93	-1.66	11.51	-0.59	10.44	0.328	
	Maintained	27.3	28.8	-1.45	-7.54	4.63	-6.55	3.64		
	Declined	28.1	31.6	-3.48	-9.92	2.97	-8.87	1.92		



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	85.7	89.7	-4.00	-8.36	0.37	-7.65	-0.34	0.073
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	81.8	84.1	-2.37	-8.08	3.34	-7.15	2.41	0.415
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	85.6	87.6	-2.01	-6.91	2.90	-6.11	2.10	0.422
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	86.8	86.2	0.54	-4.61	5.69	-3.78	4.85	0.837
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	85.6	86.9	-1.28	-6.99	4.42	-6.06	3.49	0.658
	Able to manage your health needs since returning home	Strongly Agree or Agree	91.4	91.5	-0.09	-4.24	4.06	-3.56	3.38	0.966
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	80.4	85.6	-5.14	-11.39	1.11	-10.37	0.10	0.107
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	69.7	69.0	0.69	-7.87	9.25	-6.47	7.86	0.874
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	53.5	52.4	1.12	-5.57	7.82	-4.48	6.73	0.742
	Rating of all care received after leaving the hospital	9-10	46.5	54.2	-7.70	-14.82	-0.59	-13.66	-1.74	0.027
		7-8	25.8	26.1	-0.32	-6.69	6.06	-5.66	5.02	
	0-6	27.7	19.7	8.02	1.84	14.19	2.85	13.19		

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.38: Beneficiary Survey Outcomes for Hospitals, Neurological CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	53.8	52.5	1.26	-4.79	7.32	-3.80	6.33	0.077
		Maintained	10.0	15.8	-5.85	-10.93	-0.78	-10.10	-1.61	
		Declined	36.2	31.6	4.59	-2.29	11.47	-1.17	10.35	
	Planning regular tasks	Improvement	46.6	46.1	0.54	-5.48	6.56	-4.50	5.58	0.969
		Maintained	9.9	10.3	-0.45	-4.53	3.64	-3.87	2.97	
		Declined	43.5	43.6	-0.09	-6.47	6.29	-5.43	5.25	
	Use of mobility device	Improvement	40.1	41.5	-1.38	-7.40	4.65	-6.42	3.66	0.275
		Maintained	11.6	8.6	2.99	-0.67	6.64	-0.07	6.04	
		Declined	48.3	49.9	-1.61	-7.98	4.76	-6.94	3.72	
	Walking without rest	Improvement	32.0	32.9	-0.93	-6.19	4.33	-5.33	3.47	0.375
		Maintained	20.3	16.7	3.70	-1.50	8.90	-0.66	8.05	
		Declined	47.7	50.4	-2.77	-8.79	3.25	-7.81	2.27	
	Going up or down stairs	Improvement	31.8	29.7	2.10	-3.03	7.22	-2.20	6.39	0.716
		Maintained	20.5	21.5	-1.05	-6.23	4.13	-5.39	3.29	
		Declined	47.7	48.7	-1.05	-7.09	5.00	-6.10	4.01	
	Physical/emotional problems limiting social activities	Improvement	38.9	37.2	1.77	-5.01	8.56	-3.91	7.45	0.872
		Maintained	22.8	23.1	-0.39	-6.32	5.55	-5.35	4.58	
		Declined	38.3	39.7	-1.39	-8.23	5.46	-7.11	4.34	
	Pain limiting regular activities	Improvement	41.3	42.3	-0.92	-7.83	5.99	-6.70	4.87	0.215
		Maintained	27.3	31.9	-4.53	-11.55	2.48	-10.41	1.34	
		Declined	31.3	25.9	5.45	-0.95	11.85	0.09	10.81	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	91.7	86.5	5.21	0.45	9.97	1.23	9.19	0.032
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	84.0	88.5	-4.54	-9.73	0.64	-8.89	-0.20	0.086
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	88.1	89.8	-1.78	-6.85	3.30	-6.03	2.47	0.491
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	88.1	92.2	-4.14	-8.72	0.44	-7.97	-0.31	0.076
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	87.2	90.2	-2.93	-7.85	1.99	-7.05	1.19	0.243
	Able to manage your health needs since returning home	Strongly Agree or Agree	92.8	92.1	0.65	-3.49	4.79	-2.81	4.11	0.758
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	89.0	89.3	-0.33	-5.13	4.47	-4.34	3.69	0.893
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	73.2	73.6	-0.41	-8.26	7.43	-6.97	6.15	0.918
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	51.4	57.7	-6.29	-13.48	0.89	-12.31	-0.28	0.086
	Rating of all care received after leaving the hospital	9-10	56.8	55.4	1.35	-5.87	8.58	-4.70	7.40	0.650
		7-8	21.9	24.9	-2.92	-9.18	3.35	-8.16	2.33	
0-6	21.3	19.7	1.56	-4.88	8.00	-3.83	6.95			

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.39: Beneficiary Survey Outcomes for Hospitals, Cardiac Procedures CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	83.9	85.6	-1.75	-5.59	2.10	-4.96	1.47	0.498
		Maintained	5.7	5.8	-0.17	-3.58	3.23	-3.02	2.67	
		Declined	10.4	8.5	1.92	-1.38	5.23	-0.84	4.68	
	Planning regular tasks	Improvement	80.3	83.7	-3.43	-7.65	0.79	-6.96	0.10	0.274
		Maintained	8.0	6.2	1.80	-1.67	5.28	-1.10	4.71	
		Declined	11.7	10.1	1.63	-2.19	5.45	-1.56	4.82	
	Use of mobility device	Improvement	66.1	69.5	-3.39	-7.21	0.43	-6.58	-0.20	0.162
		Maintained	12.6	11.9	0.68	-2.96	4.31	-2.36	3.72	
		Declined	21.4	18.7	2.71	-0.71	6.13	-0.15	5.57	
	Walking without rest	Improvement	57.5	60.4	-2.89	-8.52	2.74	-7.59	1.82	0.306
		Maintained	25.1	20.8	4.27	-1.17	9.71	-0.28	8.82	
		Declined	17.4	18.8	-1.38	-6.05	3.28	-5.29	2.52	
	Going up or down stairs	Improvement	52.4	51.6	0.79	-5.50	7.07	-4.47	6.04	0.856
		Maintained	29.8	29.4	0.38	-5.05	5.81	-4.16	4.92	
		Declined	17.8	19.0	-1.17	-5.31	2.97	-4.63	2.29	
	Physical/emotional problems limiting social activities	Improvement	65.5	65.0	0.46	-5.80	6.72	-4.77	5.70	0.822
		Maintained	18.6	20.0	-1.41	-6.51	3.68	-5.67	2.84	
		Declined	15.9	14.9	0.95	-3.71	5.61	-2.95	4.85	
Pain limiting regular activities	Improvement	52.7	58.4	-5.68	-12.22	0.86	-11.14	-0.21	0.107	
	Maintained	24.2	23.8	0.39	-5.84	6.63	-4.82	5.61		
	Declined	23.1	17.8	5.28	-0.14	10.71	0.75	9.82		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	97.7	97.3	0.37	-2.03	2.77	-1.64	2.38	0.762
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	94.6	90.8	3.81	-0.48	8.11	0.22	7.41	0.082
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	96.6	92.2	4.40	1.09	7.70	1.64	7.16	0.009
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	96.4	95.4	1.06	-1.43	3.55	-1.02	3.14	0.404
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	96.4	95.8	0.55	-2.43	3.54	-1.94	3.05	0.715
	Able to manage your health needs since returning home	Strongly Agree or Agree	95.2	97.7	-2.50	-5.06	0.06	-4.64	-0.36	0.056
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	91.4	91.7	-0.34	-4.41	3.73	-3.74	3.06	0.869
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	72.2	65.5	6.70	-4.54	17.95	-2.66	16.07	0.241
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	77.1	77.5	-0.46	-6.60	5.69	-5.60	4.68	0.883
	Rating of all care received after leaving the hospital	9-10	68.9	70.0	-1.10	-7.91	5.70	-6.79	4.59	0.559
		7-8	20.6	18.0	2.65	-3.05	8.35	-2.11	7.42	
0-6	10.4	12.0	-1.55	-6.02	2.92	-5.29	2.19			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.40: Beneficiary Survey Outcomes for Hospitals, Orthopedics CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	70.0	71.6	-1.54	-5.71	2.64	-5.03	1.96	0.380
		Maintained	10.9	9.0	1.97	-0.85	4.79	-0.39	4.33	
		Declined	19.0	19.4	-0.43	-4.53	3.66	-3.86	2.99	
	Planning regular tasks	Improvement	74.5	78.7	-4.14	-8.32	0.03	-7.64	-0.65	0.142
		Maintained	8.1	7.3	0.87	-2.20	3.93	-1.70	3.43	
		Declined	17.3	14.1	3.27	-0.63	7.18	0.01	6.54	
	Use of mobility device	Improvement	43.2	45.4	-2.12	-7.50	3.27	-6.62	2.39	0.296
		Maintained	9.6	11.3	-1.66	-5.54	2.22	-4.91	1.59	
		Declined	47.2	43.4	3.78	-1.17	8.73	-0.37	7.92	
	Walking without rest	Improvement	45.5	48.1	-2.55	-7.05	1.96	-6.32	1.22	0.421
		Maintained	14.7	12.4	2.29	-1.60	6.18	-0.97	5.54	
		Declined	39.8	39.6	0.26	-4.05	4.57	-3.35	3.87	
	Going up or down stairs	Improvement	44.1	44.6	-0.47	-6.29	5.36	-5.34	4.41	0.321
		Maintained	18.1	20.9	-2.73	-7.53	2.06	-6.75	1.28	
		Declined	37.8	34.6	3.20	-1.70	8.10	-0.90	7.30	
	Physical/emotional problems limiting social activities	Improvement	55.8	58.0	-2.22	-7.47	3.04	-6.61	2.18	0.710
		Maintained	17.5	16.7	0.88	-3.41	5.17	-2.71	4.47	
		Declined	26.7	25.4	1.34	-3.70	6.37	-2.88	5.55	
	Pain limiting regular activities	Improvement	61.3	57.9	3.38	-2.12	8.88	-1.22	7.98	0.418
		Maintained	16.7	17.5	-0.79	-5.71	4.12	-4.91	3.32	
		Declined	21.9	24.5	-2.59	-7.18	2.01	-6.43	1.26	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.9	90.8	-0.90	-4.54	2.74	-3.94	2.15	0.628
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	92.3	91.8	0.55	-3.47	4.57	-2.82	3.91	0.789
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	91.7	93.1	-1.38	-5.03	2.26	-4.43	1.66	0.456
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.4	93.8	-0.37	-3.41	2.66	-2.91	2.17	0.809
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.3	93.3	-0.03	-3.73	3.66	-3.13	3.06	0.986
	Able to manage your health needs since returning home	Strongly Agree or Agree	96.9	96.8	0.05	-2.40	2.50	-2.00	2.10	0.968
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	91.0	93.1	-2.15	-5.52	1.22	-4.97	0.67	0.211
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	82.9	79.9	2.98	-4.02	9.99	-2.88	8.85	0.403
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	67.9	73.5	-5.57	-10.67	-0.47	-9.84	-1.30	0.032
	Rating of all care received after leaving the hospital	9-10	63.6	71.2	-7.58	-13.22	-1.93	-12.30	-2.85	0.007
		7-8	25.2	17.2	7.97	2.93	13.00	3.75	12.18	
0-6	11.2	11.6	-0.39	-4.30	3.52	-3.67	2.89			

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.41: Beneficiary Survey Outcomes for Hospitals, Spinal Procedures CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	77.0	74.7	2.28	-3.17	7.73	-2.28	6.84	0.545
		Maintained	12.0	11.8	0.15	-3.69	3.99	-3.06	3.36	
		Declined	11.0	13.5	-2.43	-6.77	1.90	-6.06	1.19	
	Planning regular tasks	Improvement	82.6	83.5	-0.95	-5.69	3.78	-4.91	3.01	0.925
		Maintained	7.0	6.7	0.34	-2.83	3.52	-2.31	3.00	
		Declined	10.4	9.8	0.61	-3.53	4.75	-2.85	4.07	
	Use of mobility device	Improvement	62.2	56.7	5.51	-0.23	11.24	0.71	10.30	0.142
		Maintained	10.4	12.8	-2.44	-5.91	1.03	-5.34	0.46	
		Declined	27.4	30.5	-3.07	-8.31	2.17	-7.45	1.31	
	Walking without rest	Improvement	61.2	59.1	2.08	-3.85	8.01	-2.88	7.04	0.702
		Maintained	19.4	19.5	-0.08	-4.70	4.54	-3.94	3.79	
		Declined	19.4	21.4	-2.01	-6.84	2.83	-6.05	2.04	
	Going up or down stairs	Improvement	57.2	57.7	-0.50	-7.17	6.16	-6.08	5.07	0.984
		Maintained	21.6	21.5	0.08	-5.31	5.46	-4.42	4.58	
		Declined	21.2	20.8	0.42	-4.53	5.38	-3.72	4.57	
	Physical/emotional problems limiting social activities	Improvement	65.9	66.9	-1.02	-7.34	5.29	-6.30	4.26	0.554
		Maintained	18.1	15.6	2.49	-2.56	7.54	-1.74	6.71	
		Declined	16.0	17.5	-1.47	-6.04	3.11	-5.29	2.36	
Pain limiting regular activities	Improvement	74.1	68.3	5.88	0.07	11.69	1.02	10.74	0.109	
	Maintained	13.3	17.4	-4.14	-8.67	0.39	-7.93	-0.35		
	Declined	12.6	14.3	-1.74	-6.38	2.90	-5.62	2.14		



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	92.2	93.1	-0.84	-4.42	2.74	-3.84	2.15	0.644
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	87.7	88.0	-0.35	-4.82	4.12	-4.09	3.39	0.878
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	90.8	91.6	-0.85	-4.76	3.06	-4.12	2.42	0.668
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	91.2	93.6	-2.42	-5.93	1.09	-5.35	0.51	0.175
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	91.6	93.4	-1.75	-5.17	1.67	-4.61	1.11	0.314
	Able to manage your health needs since returning home	Strongly Agree or Agree	94.4	95.2	-0.83	-4.19	2.54	-3.64	1.99	0.629
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	90.7	90.9	-0.18	-4.24	3.88	-3.58	3.21	0.929
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	70.1	66.7	3.40	-6.11	12.91	-4.55	11.34	0.482
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	65.6	61.8	3.78	-2.91	10.47	-1.81	9.38	0.267
	Rating of all care received after leaving the hospital	9-10	62.8	66.8	-4.04	-10.55	2.46	-9.48	1.40	0.340
		7-8	22.9	19.2	3.74	-1.39	8.86	-0.55	8.02	
0-6		14.3	14.0	0.31	-4.53	5.14	-3.74	4.35		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.42: Beneficiary Survey Outcomes for PGPs, Medical and Critical Care CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	51.3	54.0	-2.67	-7.73	2.39	-6.90	1.56	0.194
		Maintained	21.3	17.3	4.05	-0.41	8.52	0.31	7.79	
		Declined	27.3	28.7	-1.38	-6.60	3.84	-5.75	2.98	
	Planning regular tasks	Improvement	51.8	54.6	-2.76	-7.72	2.21	-6.91	1.40	0.510
		Maintained	13.8	13.7	0.05	-3.92	4.02	-3.27	3.37	
		Declined	34.4	31.7	2.71	-2.39	7.80	-1.56	6.97	
	Use of mobility device	Improvement	32.9	32.2	0.64	-3.88	5.17	-3.15	4.43	0.761
		Maintained	13.5	14.9	-1.48	-5.43	2.47	-4.78	1.82	
		Declined	53.7	52.8	0.84	-4.20	5.88	-3.38	5.06	
	Walking without rest	Improvement	23.7	28.1	-4.33	-9.38	0.72	-8.56	-0.10	0.143
		Maintained	23.3	24.2	-0.88	-5.84	4.08	-5.03	3.27	
		Declined	53.0	47.8	5.21	-0.42	10.85	0.50	9.93	
	Going up or down stairs	Improvement	27.9	24.3	3.60	-1.77	8.98	-0.89	8.10	0.097
		Maintained	19.0	24.3	-5.35	-10.26	-0.43	-9.46	-1.23	
		Declined	53.1	51.3	1.74	-3.61	7.10	-2.74	6.23	
	Physical/emotional problems limiting social activities	Improvement	44.4	41.3	3.11	-3.29	9.50	-2.25	8.46	0.633
		Maintained	25.3	26.5	-1.28	-7.06	4.50	-6.11	3.56	
		Declined	30.3	32.1	-1.83	-8.60	4.94	-7.50	3.84	
	Pain limiting regular activities	Improvement	36.2	39.7	-3.44	-9.79	2.91	-8.76	1.87	0.392
		Maintained	35.0	30.7	4.35	-2.36	11.07	-1.27	9.97	
		Declined	28.8	29.7	-0.91	-7.52	5.70	-6.44	4.62	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.0	88.8	1.18	-3.44	5.80	-2.69	5.04	0.617
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	83.0	87.1	-4.12	-9.47	1.23	-8.59	0.36	0.131
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	86.6	90.5	-3.89	-9.06	1.27	-8.21	0.43	0.139
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	86.5	84.1	2.46	-3.50	8.41	-2.53	7.44	0.418
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	88.3	89.5	-1.18	-6.14	3.77	-5.33	2.96	0.639
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.4	93.6	-0.22	-3.92	3.47	-3.31	2.87	0.906
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	86.6	84.0	2.61	-3.36	8.58	-2.38	7.60	0.390
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	65.3	74.9	-9.55	-17.32	-1.79	-16.04	-3.07	0.016
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	53.5	54.3	-0.84	-7.53	5.84	-6.44	4.75	0.804
	Rating of all care received after leaving the hospital	9-10	49.6	51.4	-1.78	-8.71	5.16	-7.58	4.03	0.866
		7-8	28.8	27.5	1.34	-4.81	7.49	-3.81	6.48	
0-6		21.6	21.1	0.44	-5.92	6.80	-4.89	5.77		

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.43: Beneficiary Survey Outcomes for PGP, Orthopedics CESLG, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	81.7	80.1	1.59	-2.42	5.59	-1.76	4.94	0.574
		Maintained	6.1	5.7	0.39	-2.30	3.08	-1.86	2.64	
		Declined	12.2	14.2	-1.98	-5.65	1.70	-5.05	1.10	
	Planning regular tasks	Improvement	86.2	85.3	0.94	-2.00	3.87	-1.52	3.39	0.679
		Maintained	4.5	5.5	-1.03	-3.47	1.41	-3.07	1.02	
		Declined	9.3	9.2	0.09	-2.84	3.01	-2.36	2.54	
	Use of mobility device	Improvement	57.9	55.1	2.87	-2.16	7.90	-1.34	7.08	0.501
		Maintained	11.6	12.0	-0.46	-4.20	3.28	-3.59	2.67	
		Declined	30.5	32.9	-2.41	-6.97	2.15	-6.23	1.40	
	Walking without rest	Improvement	59.6	59.6	0.03	-4.79	4.85	-4.00	4.07	0.236
		Maintained	17.4	14.3	3.11	-1.24	7.46	-0.53	6.75	
		Declined	22.9	26.1	-3.14	-7.47	1.19	-6.76	0.48	
	Going up or down stairs	Improvement	56.4	52.6	3.82	-2.22	9.86	-1.23	8.87	0.010
		Maintained	22.4	20.3	2.09	-3.30	7.49	-2.42	6.61	
		Declined	21.2	27.1	-5.92	-9.73	-2.10	-9.11	-2.72	
	Physical/emotional problems limiting social activities	Improvement	68.5	69.6	-1.09	-6.21	4.03	-5.37	3.20	0.621
		Maintained	13.7	14.7	-0.99	-5.23	3.24	-4.54	2.55	
		Declined	17.8	15.7	2.08	-2.19	6.35	-1.50	5.66	
Pain limiting regular activities	Improvement	71.2	69.5	1.75	-3.12	6.62	-2.33	5.82	0.424	
	Maintained	15.9	15.1	0.79	-3.62	5.21	-2.90	4.49		
	Declined	12.9	15.5	-2.54	-6.35	1.27	-5.73	0.65		

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	95.0	93.6	1.34	-1.24	3.92	-0.82	3.50	0.309
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	91.7	90.7	1.02	-2.53	4.57	-1.95	3.99	0.573
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	93.6	93.6	-0.06	-3.10	2.99	-2.60	2.49	0.971
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.0	94.1	-1.14	-4.07	1.79	-3.59	1.31	0.445
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	93.6	94.1	-0.45	-3.34	2.44	-2.87	1.97	0.760
	Able to manage your health needs since returning home	Strongly Agree or Agree	96.9	96.1	0.85	-1.31	3.01	-0.96	2.66	0.440
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	92.1	93.8	-1.72	-4.96	1.52	-4.43	0.99	0.298
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	72.0	84.1	-12.07	-18.84	-5.29	-17.74	-6.40	0.001
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	75.1	75.6	-0.57	-5.69	4.55	-4.86	3.72	0.826
	Rating of all care received after leaving the hospital	9-10	73.1	77.0	-3.89	-9.27	1.50	-8.39	0.62	0.361
		7-8	16.8	14.5	2.30	-2.52	7.13	-1.73	6.34	
0-6		10.1	8.5	1.58	-2.08	5.25	-1.48	4.65		

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.44: Sample Sizes of Beneficiaries From Historically Underserved Population Groups, Wave 3 (July-August 2022)**

Population		BPCI Advanced Respondents (N)	Comparison Respondents (N)
Hospital	Black or African American	359	365
	Dually Eligible	406	454

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit M.45: Beneficiary Survey Outcomes for Hospitals, Black or African American Respondents, Wave 3(July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	58.5	60.9	-2.39	-11.24	6.45	-9.81	5.02	0.862
		Maintained	11.6	11.4	0.12	-4.64	4.87	-3.87	4.10	
		Declined	30.0	27.7	2.28	-6.36	10.91	-4.96	9.51	
	Planning regular tasks	Improvement	55.7	62.6	-6.86	-15.27	1.54	-13.91	0.19	0.278
		Maintained	13.2	11.8	1.41	-4.89	7.70	-3.87	6.69	
		Declined	31.1	25.6	5.45	-3.72	14.63	-2.24	13.15	
	Use of mobility device	Improvement	38.5	40.5	-2.05	-11.11	7.02	-9.65	5.55	0.451
		Maintained	15.6	11.8	3.75	-2.07	9.57	-1.13	8.63	
		Declined	46.0	47.7	-1.70	-10.55	7.15	-9.12	5.72	
	Walking without rest	Improvement	34.3	42.2	-7.87	-17.70	1.97	-16.12	0.38	0.208
		Maintained	20.6	20.7	-0.11	-8.33	8.10	-7.00	6.77	
		Declined	45.1	37.1	7.98	-1.56	17.52	-0.02	15.98	
	Going up or down stairs	Improvement	26.8	42.1	-15.31	-25.72	-4.91	-24.04	-6.59	0.015
		Maintained	31.3	25.4	5.88	-2.63	14.38	-1.26	13.01	
		Declined	41.9	32.5	9.44	0.57	18.30	2.01	16.87	
	Physical/emotional problems limiting social activities	Improvement	40.0	46.9	-6.93	-18.44	4.57	-16.58	2.72	0.195
		Maintained	24.1	26.2	-2.08	-11.27	7.11	-9.79	5.62	
		Declined	35.9	26.9	9.02	-0.76	18.79	0.82	17.21	
	Pain limiting regular activities	Improvement	39.9	47.2	-7.32	-18.41	3.77	-16.62	1.98	0.271
		Maintained	35.1	26.6	8.56	-2.04	19.16	-0.33	17.45	
		Declined	24.9	26.2	-1.24	-10.10	7.62	-8.67	6.19	

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	89.1	90.9	-1.79	-8.70	5.12	-7.59	4.00	0.611
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	84.3	86.4	-2.08	-10.03	5.88	-8.75	4.60	0.609
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	84.6	86.4	-1.74	-10.40	6.91	-9.00	5.51	0.693
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	86.7	87.0	-0.28	-9.02	8.46	-7.61	7.05	0.950
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	90.3	87.2	3.16	-4.48	10.79	-3.25	9.56	0.418
	Able to manage your health needs since returning home	Strongly Agree or Agree	93.1	92.5	0.60	-4.90	6.09	-4.01	5.20	0.832
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	86.9	85.4	1.51	-6.27	9.29	-5.01	8.03	0.703
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	75.9	69.1	6.83	-4.68	18.34	-2.82	16.48	0.244
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	55.9	63.8	-7.91	-17.75	1.92	-16.16	0.33	0.115
	Rating of all care received after leaving the hospital	9-10	57.4	58.3	-0.94	-11.90	10.02	-10.13	8.25	0.905
		7-8	26.8	24.5	2.25	-8.53	13.04	-6.79	11.29	
0-6		15.9	17.2	-1.31	-9.48	6.86	-8.16	5.54		

Note: See the first page of this appendix for data sources and more information.

**Exhibit M.46: Beneficiary Survey Outcomes for Hospitals, Dually Eligible Respondents, Wave 3 (July-August 2022)**

Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
<b>Change in Functional Status</b>	Bathing, dressing, using the toilet, or eating	Improvement	55.7	56.8	-1.10	-7.88	5.67	-6.78	4.58	0.930
		Maintained	15.1	14.4	0.65	-3.51	4.80	-2.84	4.13	
		Declined	29.2	28.8	0.46	-6.12	7.04	-5.06	5.97	
	Planning regular tasks	Improvement	55.8	61.4	-5.70	-12.31	0.91	-11.24	-0.15	0.234
		Maintained	11.2	9.6	1.62	-2.37	5.62	-1.72	4.97	
		Declined	33.0	29.0	4.07	-2.34	10.49	-1.31	9.45	
	Use of mobility device	Improvement	43.0	43.2	-0.22	-8.15	7.70	-6.87	6.42	0.692
		Maintained	16.2	14.0	2.26	-3.30	7.81	-2.40	6.92	
		Declined	40.8	42.9	-2.03	-9.48	5.42	-8.28	4.21	
	Walking without rest	Improvement	31.0	31.4	-0.47	-8.87	7.92	-7.51	6.57	0.977
		Maintained	27.3	26.4	0.87	-7.08	8.82	-5.79	7.54	
		Declined	41.7	42.1	-0.40	-8.46	7.66	-7.16	6.36	
	Going up or down stairs	Improvement	31.3	27.5	3.82	-5.11	12.74	-3.67	11.30	0.661
		Maintained	25.8	28.7	-2.96	-10.86	4.94	-9.58	3.67	
		Declined	42.9	43.8	-0.86	-9.21	7.50	-7.86	6.15	
	Physical/emotional problems limiting social activities	Improvement	43.5	47.0	-3.45	-13.29	6.39	-11.70	4.80	0.749
		Maintained	24.9	24.5	0.43	-7.05	7.90	-5.84	6.70	
		Declined	31.5	28.5	3.02	-5.42	11.46	-4.05	10.10	
	Pain limiting regular activities	Improvement	44.3	36.6	7.68	-1.17	16.52	0.26	15.09	0.215
		Maintained	27.5	32.6	-5.05	-13.07	2.97	-11.78	1.68	
		Declined	28.2	30.8	-2.63	-11.03	5.78	-9.67	4.42	



Outcome		Response Category	BPCI Advanced Rate (%)	Comparison Rate (%)	Difference in Rate (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	90.9	93.5	-2.61	-7.02	1.80	-6.31	1.09	0.246
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	85.4	85.0	0.40	-6.06	6.87	-5.02	5.83	0.902
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	89.6	87.8	1.78	-4.20	7.75	-3.23	6.79	0.560
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	93.5	91.0	2.50	-2.72	7.72	-1.88	6.88	0.348
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	91.5	89.3	2.14	-3.35	7.62	-2.46	6.73	0.445
	Able to manage your health needs since returning home	Strongly Agree or Agree	91.7	92.3	-0.65	-5.46	4.17	-4.69	3.39	0.792
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	86.2	87.0	-0.78	-7.88	6.32	-6.73	5.17	0.830
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	74.0	71.6	2.41	-7.92	12.73	-6.25	11.07	0.647
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	58.9	59.2	-0.32	-9.38	8.75	-7.92	7.29	0.945
	Rating of all care received after leaving the hospital	9-10	49.9	47.4	2.56	-6.40	11.51	-4.95	10.06	0.845
		7-8	26.7	27.6	-0.89	-9.35	7.57	-7.98	6.20	
0-6		23.4	25.1	-1.66	-9.55	6.22	-8.27	4.94		

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.47: Beneficiary Survey Outcomes for Hospitals, Difference Between BPCI Advanced and Comparison Outcomes Among Black or African American Respondents Relative to White Respondents, Wave 3 (July-August 2022)**

Outcome		Response Category	Difference (Black or African American) (pp)	Difference (White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	-2.39	2.92	-5.32	-14.91	4.28	-13.36	2.73	0.533
		Maintained	0.12	-0.24	0.36	-5.21	5.92	-4.31	5.02	
		Declined	2.28	-2.69	4.96	-4.27	14.19	-2.78	12.70	
	Planning regular tasks	Improvement	-6.86	-0.79	-6.07	-15.17	3.03	-13.70	1.56	0.426
		Maintained	1.41	0.22	1.19	-5.74	8.11	-4.62	6.99	
		Declined	5.45	0.57	4.88	-4.99	14.75	-3.39	13.16	
	Use of mobility device	Improvement	-2.05	-1.90	-0.14	-10.18	9.89	-8.56	8.27	0.947
		Maintained	3.75	2.70	1.04	-5.55	7.63	-4.49	6.57	
		Declined	-1.70	-0.80	-0.90	-10.27	8.47	-8.76	6.96	
	Walking without rest	Improvement	-7.87	-2.30	-5.57	-15.95	4.81	-14.27	3.13	0.428
		Maintained	-0.11	0.90	-1.02	-9.89	7.85	-8.45	6.42	
		Declined	7.98	1.40	6.59	-3.65	16.83	-2.00	15.17	
	Going up or down stairs	Improvement	-15.31	-0.65	-14.66	-25.45	-3.87	-23.71	-5.61	0.029
		Maintained	5.88	-0.73	6.61	-2.49	15.72	-1.02	14.25	
		Declined	9.44	1.39	8.05	-1.50	17.60	0.04	16.06	
	Physical/emotional problems limiting social activities	Improvement	-6.93	0.32	-7.25	-19.55	5.05	-17.56	3.07	0.252
		Maintained	-2.08	-0.57	-1.51	-11.70	8.68	-10.06	7.03	
		Declined	9.02	0.25	8.76	-1.65	19.17	0.03	17.49	
	Pain limiting regular activities	Improvement	-7.32	0.10	-7.42	-19.42	4.59	-17.49	2.65	0.387
		Maintained	8.56	0.99	7.57	-3.95	19.08	-2.09	17.22	
		Declined	-1.24	-1.09	-0.15	-9.95	9.65	-8.37	8.07	

Outcome		Response Category	Difference (Black or African American) (pp)	Difference (White) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	-1.79	-3.16	1.36	-6.30	9.03	-5.06	7.79	0.727
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	-2.08	-0.77	-1.30	-9.83	7.23	-8.45	5.85	0.765
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	-1.74	-2.37	0.63	-8.53	9.79	-7.05	8.31	0.893
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	-0.28	0.20	-0.48	-9.80	8.84	-8.30	7.34	0.920
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	3.16	-2.01	5.16	-3.43	13.76	-2.04	12.37	0.239
	Able to manage your health needs since returning home	Strongly Agree or Agree	0.60	-1.35	1.95	-4.36	8.25	-3.34	7.23	0.545
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	1.51	-4.65	6.16	-2.69	15.02	-1.26	13.59	0.172
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	6.83	1.31	5.53	-7.34	18.40	-5.26	16.32	0.400
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	-7.91	-0.03	-7.88	-18.67	2.90	-16.93	1.16	0.152
	Rating of all care received after leaving the hospital	9-10	-0.94	-6.76	5.82	-6.44	18.07	-4.46	16.09	0.380
		7-8	2.25	2.02	0.23	-11.69	12.16	-9.77	10.23	
0-6		-1.31	4.74	-6.05	-15.03	2.93	-13.58	1.48		

**Note:** See the first page of this appendix for data sources and more information.

**Exhibit M.48: Beneficiary Survey Outcomes for Hospitals, Difference Between BPCI Advanced and Comparison Outcomes Among Dually Eligible Respondents Relative to Non-Dually Eligible Respondents, Wave 3 (July-August 2022)**

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Change in Functional Status	Bathing, dressing, using the toilet, or eating	Improvement	-1.10	2.08	-3.19	-10.71	4.33	-9.49	3.12	0.574
		Maintained	0.65	-1.51	2.16	-2.66	6.97	-1.88	6.19	
		Declined	0.46	-0.57	1.03	-6.50	8.56	-5.28	7.34	
	Planning regular tasks	Improvement	-5.70	-0.21	-5.49	-13.04	2.06	-11.82	0.84	0.360
		Maintained	1.62	0.66	0.97	-3.86	5.79	-3.08	5.01	
		Declined	4.07	-0.45	4.53	-2.89	11.94	-1.70	10.75	
	Use of mobility device	Improvement	-0.22	-0.88	0.66	-7.82	9.14	-6.45	7.77	0.950
		Maintained	2.26	1.67	0.58	-5.40	6.57	-4.44	5.60	
		Declined	-2.03	-0.79	-1.24	-9.30	6.81	-8.00	5.51	
	Walking without rest	Improvement	-0.47	-1.12	0.65	-8.41	9.70	-6.95	8.24	0.969
		Maintained	0.87	0.40	0.47	-8.01	8.96	-6.64	7.59	
		Declined	-0.40	0.72	-1.12	-9.81	7.57	-8.41	6.17	
	Going up or down stairs	Improvement	3.82	-0.12	3.93	-5.52	13.39	-3.99	11.86	0.702
		Maintained	-2.96	-0.45	-2.51	-10.88	5.86	-9.53	4.51	
		Declined	-0.86	0.57	-1.42	-10.36	7.51	-8.92	6.07	
	Physical/emotional problems limiting social activities	Improvement	-3.45	1.09	-4.54	-14.85	5.78	-13.18	4.11	0.687
		Maintained	0.43	-1.23	1.65	-6.36	9.66	-5.06	8.37	
		Declined	3.02	0.14	2.88	-6.05	11.82	-4.61	10.38	
	Pain limiting regular activities	Improvement	7.68	1.62	6.06	-3.77	15.88	-2.19	14.30	0.316
		Maintained	-5.05	1.49	-6.54	-15.60	2.52	-14.13	1.06	
		Declined	-2.63	-3.11	0.48	-8.76	9.73	-7.27	8.23	

Outcome		Response Category	Difference (Dually Eligible) (pp)	Difference (Non-Dually Eligible) (pp)	Relative Difference (pp)	95% LCI	95% UCI	90% LCI	90% UCI	P-Value
Care Experience	Felt prepared to leave the hospital	Very or somewhat	-2.61	-2.03	-0.58	-5.70	4.54	-4.88	3.71	0.823
	Medical staff took your preferences into account in deciding what health care services you should have after you left the hospital	Strongly Agree or Agree	0.40	-1.00	1.41	-5.84	8.65	-4.67	7.48	0.704
	Good understanding of how to take care of self before going home	Strongly Agree or Agree	1.78	-2.65	4.43	-2.23	11.08	-1.15	10.01	0.192
	Medical staff clearly explained how to take medications before going home	Strongly Agree or Agree	2.50	-1.71	4.21	-1.83	10.24	-0.85	9.27	0.172
	Medical staff clearly explained what follow-up appointments or treatments would be needed before going home	Strongly Agree or Agree	2.14	-2.70	4.83	-1.40	11.06	-0.39	10.06	0.129
	Able to manage your health needs since returning home	Strongly Agree or Agree	-0.65	-1.03	0.38	-4.97	5.72	-4.11	4.86	0.890
	Medical staff talked with you about whether you would have the help you needed when you got home	Yes	-0.78	-4.11	3.33	-4.41	11.07	-3.16	9.82	0.399
	If you needed help at home to manage your health, medical staff arranged services for you at home to help manage your health	Yes	2.41	1.81	0.60	-10.54	11.75	-8.74	9.95	0.915
Satisfaction with Care	Overall satisfaction with recovery	Quite a bit or Extreme	-0.32	0.50	-0.82	-10.66	9.03	-9.07	7.44	0.871
	Rating of all care received after leaving the hospital	9-10	2.56	-6.43	8.98	-0.78	18.74	0.79	17.17	0.197
		7-8	-0.89	4.08	-4.98	-14.16	4.21	-12.68	2.72	
0-6	-1.66	2.34	-4.01	-12.46	4.44	-11.09	3.08			

Note: See the first page of this appendix for data sources and more information.

## Appendix N: Supplemental Medicare Program Savings Results

The following tables display Medicare program savings results assessed in this report. The estimate of the reduction in non-standardized payments is based on a risk-adjusted DiD model.<sup>1</sup> Net savings to Medicare is the estimated reduction in non-standardized payments minus reconciliation payments paid to or received from participants. We calculated two different versions of total reconciliation amounts, adjusted and unadjusted. We used adjusted reconciliation amounts to calculate net savings to Medicare for the pooled groupings and CESLG-level results (Exhibits N.1 – N.6). We used unadjusted reconciliation amounts to calculate the net savings to Medicare at the clinical episode level because target prices are created at the clinical episode level (Exhibits N.7 – N.10). See **Appendix C** for more details. Net savings are reported such that a positive value indicates savings to Medicare and a negative value indicates losses to Medicare. Reconciliation payments are reported such that a positive value indicates payment made to CMS from participants and a negative value indicates payments made to participants from CMS. Lower and upper bounds are calculated from the 90% and 95% confidence intervals of the DiD estimate. Results expressed as a percentage are calculated as a percentage of the BPCI Advanced counterfactual.<sup>2</sup> The sample size reported in the exhibits represents the number of episodes used to estimate the reduction in non-standardized payments. The sample size as a percentage represents the share of episodes for the given result out of the total number of episodes across all clinical episodes evaluated. The sensitivity results include testing if our results are robust to using the reconciliation sample size to aggregate the per-episode reduction in non-standardized payments.

Results reflect the BPCI Advanced evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2015, and ending on or before September 30, 2018 (baseline period) and episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (Model Year 4) for BPCI Advanced episode initiators and matched comparison providers. Results are based on clinical episodes with sufficient sample size for evaluation. Reconciliation results reflect the CMS reconciliation data for BPCI Advanced hospitals and PGPs from Model Year 4, Second True-Up for Performance Periods 5, 6, and 7.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

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<sup>1</sup> The DiD model is based on standardized Part A and B Medicare paid amounts, which exclude beneficiary cost sharing.

<sup>2</sup> The counterfactual is an estimate of what payments would have been absent the BPCI Advanced Model. The BPCI Advanced counterfactual is calculated as the average BPCI Advanced non-standardized payments in the baseline plus the change in the average non-standardized payments for the comparison group from baseline to intervention.

**Exhibit N.1: Net Medicare Savings, BPCI Advanced Hospitals and PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Reduction in Non-standardized Payments (M)	Reconciliation Payments (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings as a Percentage (%)
All Evaluated Clinical Episodes (N=420,672)	\$449.91	-\$14.81	\$464.72	\$376.62	\$552.82	\$359.73	\$569.71	3.4
Medical (n=82%)	\$256.97	-\$49.00	\$305.98	\$237.50	\$374.46	\$224.37	\$387.59	2.8
Hospitals (n=65%)	\$196.57	-\$26.97	\$223.54	\$164.60	\$282.48	\$153.30	\$293.78	2.6
PGPs (n=17%)	\$62.75	-\$22.03	\$84.78	\$52.53	\$117.03	\$46.33	\$123.23	3.8
Surgical (n=18%)	\$181.32	\$34.19	\$147.12	\$111.72	\$182.52	\$104.93	\$189.32	5.3
Hospitals (n=10%)	\$83.83	\$3.90	\$79.93	\$55.96	\$103.91	\$51.35	\$108.51	5.1
PGPs (n=9%)	\$92.47	\$30.29	\$62.18	\$35.95	\$88.41	\$30.89	\$93.46	5.6

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit N.2: Net Medicare Savings, Expressed as a Percentage of the BPCI Advanced Counterfactual, BPCI Advanced Hospitals and PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Reduction in Non-standardized Payments (%)	Reconciliation Payments (%)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
All Evaluated Clinical Episodes (N=420,672)	3.3	-0.1	3.4	2.8	4.0	2.6	4.2
Medical (n=82%)	2.4	-0.4	2.8	2.2	3.4	2.1	3.6
Hospitals (n=65%)	2.3	-0.3	2.6	1.9	3.3	1.8	3.4
PGPs (n=17%)	2.8	-1.0	3.8	2.4	5.3	2.1	5.6
Surgical (n=18%)	6.5	1.2	5.3	4.0	6.5	3.8	6.8
Hospitals (n=10%)	5.3	0.2	5.1	3.5	6.6	3.2	6.9
PGPs (n=9%)	8.3	2.7	5.6	3.2	7.9	2.8	8.4

*Note:* See the first page of this appendix for data sources and more information.



**Exhibit N.3: Net Medicare Savings by Clinical Episode Service Line Group, Medical and Surgical, BPCI Advanced Hospital Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Reduction in Non-standardized Payments (M)	Reconciliation Payments (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings as a Percentage (%)
Medical	Cardiac Care (n=12%)	\$32.74	-\$14.25	\$46.99	\$31.27	\$62.72	\$28.25	\$65.74	3.2
	GI Care (n=3%)	\$6.73	\$1.56	\$5.17	-\$2.16	\$12.50	-\$3.56	\$13.91	1.5
	Medical & Critical Care (n=44%)	\$134.12	-\$11.91	\$146.02	\$97.46	\$194.59	\$88.14	\$203.91	2.4
	Neurological Care (n=5%)	\$20.40	-\$2.36	\$22.77	\$8.49	\$37.04	\$5.75	\$39.78	2.9
Surgical	Cardiac Procedures (n=2%)	\$12.51	-\$0.71	\$13.22	\$7.75	\$18.69	\$6.70	\$19.75	4.2
	GI Surgery (n=<1%)	-\$0.07	\$0.43	-\$0.50	-\$3.64	\$2.63	-\$4.24	\$3.24	-0.5
	Orthopedics (n=5%)	\$48.26	\$3.47	\$44.79	\$28.09	\$61.49	\$24.88	\$64.70	5.6
	Spinal Procedures (n=2%)	\$25.30	\$0.71	\$24.59	\$10.71	\$38.46	\$8.04	\$41.14	6.4

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit N.4: Net Percent Medicare Savings by Clinical Episode Service Line Group, Medical and Surgical, BPCI Advanced Hospital Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Reduction in Non-standardized Payments (%)	Reconciliation Payments (%)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Medical	Cardiac Care (n=12%)	2.2	-1.0	3.2	2.1	4.2	1.9	4.4
	GI Care (n=3%)	1.9	0.4	1.5	-0.6	3.6	-1.0	4.0
	Medical & Critical Care (n=44%)	2.2	-0.2	2.4	1.6	3.2	1.4	3.3
	Neurological Care (n=5%)	2.6	-0.3	2.9	1.1	4.7	0.7	5.1
Surgical	Cardiac Procedures (n=2%)	3.9	-0.2	4.2	2.4	5.9	2.1	6.2
	GI Surgery (n<1%)	-0.1	0.5	-0.5	-4.0	2.9	-4.6	3.5
	Orthopedics (n=5%)	6.0	0.4	5.6	3.5	7.7	3.1	8.1
	Spinal Procedures (n=2%)	6.6	0.2	6.4	2.8	10.0	2.1	10.7

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit N.5: Net Medicare Savings by Clinical Episode Service Line Group, Medical and Surgical Clinical, BPCI Advanced PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Reduction in Non-standardized Payments (M)	Reconciliation Payments (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings as a Percentage (%)
Medical	Cardiac Care (n=4%)	\$7.35	\$1.03	\$6.31	-\$2.50	\$15.12	-\$4.19	\$16.82	1.4
	GI Care (n=1%)	-\$0.94	-\$1.73	\$0.78	-\$2.29	\$3.85	-\$2.88	\$4.45	0.7
	Medical & Critical Care (n=11%)	\$54.85	-\$20.68	\$75.53	\$48.68	\$102.38	\$43.51	\$107.55	5.2
	Neurological Care (n=1%)	\$6.79	-\$0.66	\$7.46	\$0.72	\$14.20	-\$0.59	\$15.50	3.5
Surgical	Orthopedics (n=7%)	\$73.23	\$23.90	\$49.33	\$28.13	\$70.53	\$24.04	\$74.62	5.6
	Spinal Procedures (n=1%)	\$14.52	\$6.39	\$8.14	-\$4.40	\$20.67	-\$6.85	\$23.12	3.6

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit N.6: Net Percent Medicare Savings by Clinical Episode Service Line Group, Medical and Surgical Clinical, BPCI Advanced PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	CESLG	Reduction in Non-Standardized Payments (%)	Reconciliation Payments (%)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Medical	Cardiac Care (n=4%)	1.7	0.2	1.4	-0.6	3.4	-1.0	3.8
	GI Care (n=1%)	-0.9	-1.6	0.7	-2.1	3.6	-2.7	4.1
	Medical & Critical Care (n=11%)	3.7	-1.4	5.2	3.3	7.0	3.0	7.3
	Neurological Care (n=1%)	3.2	-0.3	3.5	0.3	6.6	-0.3	7.2
Surgical	Orthopedics (n=7%)	8.3	2.7	5.6	3.2	8.0	2.7	8.5
	Spinal Procedures (n=1%)	6.4	2.8	3.6	-1.9	9.0	-3.0	10.1

*Note:* See the first page of this appendix for data sources and more information.

**Exhibit N.7: Net Medicare Savings by Clinical Episode, Medical Clinical Episodes, BPCI Advanced Hospital Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Cardiac Care	AMI (n=2%)	\$11.92	\$5.30	\$18.54	\$4.03	\$19.81	3.8	1.7	5.8	1.3	6.2
	Cardiac Arrhythmia (n=3%)	\$9.40	\$3.09	\$15.70	\$1.88	\$16.92	3.0	1.0	4.9	0.6	5.3
	CHF (n=6%)	\$26.93	\$15.30	\$38.56	\$13.07	\$40.79	3.1	1.8	4.5	1.5	4.7
GI Care	Disorders of the Liver (n<1%)	\$0.86	-\$0.93	\$2.64	-\$1.28	\$2.99	3.4	-3.7	10.6	-5.1	12.0
	GI Hemorrhage (n=2%)	\$2.84	-\$3.58	\$9.26	-\$4.81	\$10.49	1.2	-1.5	3.9	-2.0	4.4
	GI Obstruction (n=1%)	\$0.87	-\$2.22	\$3.96	-\$2.82	\$4.55	1.0	-2.5	4.5	-3.2	5.2
Medical & Critical Care	Cellulitis (n=2%)	\$4.60	-\$0.97	\$10.16	-\$2.03	\$11.23	1.8	-0.4	4.0	-0.8	4.4
	COPD, Bronchitis & Asthma (n=3%)	\$7.96	\$1.47	\$14.44	\$0.23	\$15.69	2.5	0.5	4.5	0.1	4.9
	Renal Failure (n=5%)	\$3.31	-\$6.22	\$12.84	-\$8.04	\$14.66	0.5	-1.0	2.1	-1.3	2.4
	Sepsis (n=16%)	\$91.37	\$62.90	\$119.84	\$57.43	\$125.31	3.4	2.3	4.4	2.1	4.6
	SPRI (n=13%)	\$40.77	\$19.77	\$61.77	\$15.74	\$65.81	2.4	1.1	3.6	0.9	3.8
	UTI (n=5%)	\$13.23	\$2.77	\$23.69	\$0.76	\$25.70	2.2	0.5	4.0	0.1	4.3
Neurological Care	Stroke (n=4%)	\$21.10	\$7.78	\$34.42	\$5.22	\$36.98	3.2	1.2	5.2	0.8	5.6
	Seizures (n=1%)	\$1.44	-\$3.06	\$5.94	-\$3.92	\$6.81	1.1	-2.3	4.5	-3.0	5.2

*Note:* See the first page of this appendix for data sources and more information. The percentage of episodes (n) by clinical episode represents the share of episodes out of all BPCI Advanced episodes for hospitals and PGPs.

**Exhibit N.8: Net Medicare Savings by Clinical Episode, Surgical Clinical Episodes, BPCI Advanced Hospital Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Cardiac Procedures	CABG (n<<1%)	\$5.31	\$2.43	\$8.18	\$1.87	\$8.75	8.0	3.6	12.3	2.8	13.1
	Cardiac Defibrillator (OP) (n<<1%)	\$0.80	-\$0.29	\$1.89	-\$0.50	\$2.11	1.9	-0.7	4.4	-1.2	4.9
	Pacemaker (n<<1%)	-\$0.12	-\$1.73	\$1.48	-\$2.04	\$1.80	-0.3	-3.6	3.1	-4.3	3.8
	PCI (n=1%)	\$3.97	\$1.37	\$6.58	\$0.86	\$7.08	4.1	1.4	6.9	0.9	7.4
	PCI (OP) (n=1%)	\$1.49	\$0.14	\$2.84	-\$0.12	\$3.11	2.6	0.3	5.0	-0.2	5.5
GI Surgery	Major Bowel Procedure (n<<1%)	-\$0.37	-\$3.50	\$2.77	-\$4.11	\$3.38	-0.4	-3.8	3.0	-4.5	3.7
Orthopedics	Femur & Hip/Pelvis Fractures (n<<1%)	\$1.39	-\$0.60	\$3.38	-\$0.99	\$3.76	3.3	-1.4	8.1	-2.4	9.1
	Hip & Femur (n=1%)	\$17.45	\$9.03	\$25.88	\$7.40	\$27.50	5.1	2.6	7.6	2.2	8.0
	Lower Extremity/Humerus (n<<1%)	\$1.04	-\$1.27	\$3.36	-\$1.72	\$3.80	1.7	-2.1	5.5	-2.8	6.2
	MJRLE (n=3%)	\$26.76	\$16.85	\$36.67	\$14.93	\$38.58	6.9	4.4	9.5	3.9	10.0
Spinal Procedures	Back & Neck (OP) (n=1%)	-\$0.25	-\$1.75	\$1.24	-\$2.03	\$1.53	-0.8	-5.6	4.0	-6.5	4.9
	Spinal Fusion (n=1%)	\$26.23	\$12.36	\$40.10	\$9.68	\$42.78	7.5	3.5	11.4	2.8	12.2

**Note:** See the first page of this appendix for data sources and more information. The percentage of episodes (n) by clinical episode represents the share of episodes out of all BPCI Advanced episodes for hospitals and PGPs.

**Exhibit N.9: Net Medicare Savings by Clinical Episode, Medical Clinical Episodes, BPCI Advanced PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Cardiac Care	AMI (n=1%)	\$1.18	-\$2.95	\$5.31	-\$3.76	\$6.11	1.1	-2.9	5.1	-3.6	5.9
	Cardiac Arrhythmia (n=1%)	\$0.29	-\$3.31	\$3.89	-\$4.01	\$4.59	0.3	-3.8	4.5	-4.6	5.3
	CHF (n=2%)	\$5.10	-\$0.64	\$10.84	-\$1.76	\$11.96	2.0	-0.3	4.3	-0.7	4.8
GI Care	GI Hemorrhage (n=1%)	-\$0.75	-\$3.33	\$1.82	-\$3.84	\$2.33	-1.0	-4.3	2.3	-4.9	3.0
	GI Obstruction (n=<1%)	\$1.21	-\$0.44	\$2.87	-\$0.76	\$3.19	4.1	1.5	9.6	-2.5	10.7
Medical & Critical Care	Cellulitis (n=1%)	\$2.52	-\$0.08	\$5.13	-\$0.59	\$5.63	4.3	-0.1	8.8	-1.0	9.7
	COPD, Bronchitis & Asthma (n=1%)	\$4.54	\$2.01	\$7.07	\$1.52	\$7.57	6.5	2.9	10.2	2.2	10.9
	Renal Failure (n=1%)	\$8.38	\$3.72	\$13.04	\$2.82	\$13.94	5.8	2.6	9.0	1.9	9.6
	Sepsis (n=4%)	\$47.30	\$30.43	\$64.16	\$27.17	\$67.42	7.3	4.7	9.9	4.2	10.4
	SPRI (n=4%)	\$15.54	\$2.76	\$28.31	\$0.29	\$30.79	3.4	0.6	6.2	0.1	6.7
	UTI (n=1%)	\$4.36	\$0.22	\$8.50	-\$0.58	\$9.30	3.4	0.2	6.6	-0.5	7.2
Neurological Care	Stroke (n=1%)	\$6.47	-\$0.05	\$12.99	-\$1.32	\$14.26	3.6	0.0	7.2	-0.7	7.9
	Seizures (n=<1%)	\$2.00	\$0.47	\$3.52	\$0.17	\$3.82	6.2	1.5	11.0	0.5	12.0

**Note:** See the first page of this appendix for data sources and more information. The percentage of episodes (n) by clinical episode represents the share of episodes out of all BPCI Advanced episodes for hospitals and PGPs.

**Exhibit N.10: Net Medicare Savings by Clinical Episode, Surgical Clinical Episodes, BPCI Advanced PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

CESLG	Clinical Episode	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings to Medicare (%)	90% LCI (%)	90% UCI (%)	95% LCI (%)	95% UCI (%)
Orthopedics	Hip & Femur (n=1%)	\$8.23	-\$0.33	\$16.79	-\$2.02	\$18.48	3.2	-0.1	6.5	-0.8	7.2
	MJRLE (n=6%)	\$36.56	\$19.75	\$53.37	\$16.49	\$56.64	5.8	3.2	8.5	2.6	9.1
	MJRUE (n<1%)	\$3.17	\$0.61	\$5.73	\$0.11	\$6.23	7.7	1.5	13.9	0.3	15.1
Spinal Procedures	Back & Neck (OP) (n<1%)	\$0.51	-\$0.85	\$1.86	-\$1.12	\$2.13	2.3	-3.8	8.3	-5.0	9.5
	Spinal Fusion (n=1%)	\$8.65	-\$5.27	\$22.56	-\$8.02	\$25.31	4.0	-2.4	10.4	-3.7	11.7

*Note:* See the first page of this appendix for data sources and more information. The percentage of episodes (n) by clinical episode represents the share of episodes out of all BPCI Advanced episodes for hospitals and PGPs.



**Exhibit N.11: Net Medicare Savings, BPCI Advanced Hospital and PGP Episode Initiators, Model Years 1-2, Model Year 3, and Model Year 4 October 1, 2018 – December 31, 2021**

Clinical Episode Type	Model Years 1 and 2			Model Year 3			Model Year 4			Model Year 4 (Adjusted for Stop-Loss/ Gain and CQS)		
	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)
All Evaluated Clinical Episodes	-\$65.75	-\$152.00	\$20.50	-\$113.74	-\$207.36	-\$20.12	\$472.12	\$384.02	\$560.23	\$464.72	\$376.62	\$552.82
Medical	-\$275.02	-\$342.92	-\$207.11	-\$200.49	-\$272.76	-\$128.22	\$314.30	\$245.82	\$382.78	\$305.98	\$237.50	\$374.46
Hospitals	-\$241.93	-\$291.62	-\$192.24	-\$166.60	-\$222.05	-\$111.15	\$228.50	\$169.56	\$287.44	\$223.54	\$164.60	\$282.48
PGPs	-\$48.34	-\$93.88	-\$2.81	-\$60.41	-\$103.37	-\$17.46	\$88.15	\$55.90	\$120.40	\$84.78	\$52.53	\$117.03
Surgical	\$204.40	\$153.90	\$254.89	\$71.32	\$31.38	\$111.26	\$146.20	\$110.80	\$181.60	\$147.12	\$111.72	\$182.52
Hospitals	\$41.48	\$29.35	\$53.60	\$6.25	-\$14.05	\$26.56	\$79.92	\$55.94	\$103.89	\$79.93	\$55.96	\$103.91
PGPs	\$157.10	\$109.18	\$205.03	\$58.56	\$26.66	\$90.46	\$61.27	\$35.04	\$87.50	\$62.18	\$35.95	\$88.41

**Note:** See the first page of this appendix for data sources and more information. See The BPCI Advanced Third Evaluation Report for detailed results of the Medicare Program Savings analysis in Model Years 1 and 2. See the BPCI Advanced Fourth Evaluation Report for detailed results of the Medicare Program Savings analysis in Model Year 3. The BPCI Advanced evaluation reports are available for download at <https://www.cms.gov/priorities/innovation/innovation-models/bpci-advanced>.

**Exhibit N.12: Net Medicare Savings Sensitivity Test Results, BPCI Advanced Hospital and PGP Episode Initiators, Model Year 4, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Sample Size Used to Aggregate the Estimate of Savings	Reduction in Non-standardized Payments (M)	Reconciliation Payments (M)	Savings to Medicare (M)	90% LCI (M)	90% UCI (M)	95% LCI (M)	95% UCI (M)	Savings as a Percentage (%)
All Evaluated Clinical Episodes	Main Estimate: MPS Evaluation Episodes	\$449.91	-\$14.81	\$464.72	\$376.62	\$552.82	\$359.73	\$569.71	3.4
	Sensitivity: Reconciliation Episodes	\$303.84	-\$14.81	\$318.66	\$259.16	\$378.15	\$247.75	\$389.56	3.5
Medical	Main Estimate: MPS Evaluation Episodes	\$256.97	-\$49.00	\$305.98	\$237.50	\$374.46	\$224.37	\$387.59	2.8
	Sensitivity: Reconciliation Episodes	\$166.96	-\$49.00	\$215.96	\$171.47	\$260.46	\$162.94	\$268.99	3.0
Hospitals	Main Estimate: MPS Evaluation Episodes	\$196.57	-\$26.97	\$223.54	\$164.60	\$282.48	\$153.30	\$293.78	2.6
	Sensitivity: Reconciliation Episodes	\$127.10	-\$26.97	\$154.07	\$115.96	\$192.18	\$108.65	\$199.49	2.7
PGPs	Main Estimate: MPS Evaluation Episodes	\$62.75	-\$22.03	\$84.78	\$52.53	\$117.03	\$46.33	\$123.23	3.8
	Sensitivity: Reconciliation Episodes	\$41.52	-\$22.03	\$63.55	\$42.21	\$84.89	\$38.11	\$88.99	4.3
Surgical	Main Estimate: MPS Evaluation Episodes	\$181.32	\$34.19	\$147.12	\$111.72	\$182.52	\$104.93	\$189.32	5.3
	Sensitivity: Reconciliation Episodes	\$143.04	\$34.19	\$108.85	\$80.92	\$136.78	\$75.57	\$142.14	4.9
Hospitals	Main Estimate: MPS Evaluation Episodes	\$83.83	\$3.90	\$79.93	\$55.96	\$103.91	\$51.35	\$108.51	5.1
	Sensitivity: Reconciliation Episodes	\$68.18	\$3.90	\$64.28	\$44.78	\$83.77	\$41.03	\$87.52	5.0
PGPs	Main Estimate: MPS Evaluation Episodes	\$92.47	\$30.29	\$62.18	\$35.95	\$88.41	\$30.89	\$93.46	5.6
	Sensitivity: Reconciliation Episodes	\$70.47	\$30.29	\$40.18	\$20.19	\$60.17	\$16.34	\$64.02	4.7

*Note:* See the first page of this appendix for data sources and more information.

## Appendix O: BPCI Advanced Overlap with Accountable Care Organizations

The following tables display the overlap between BPCI Advanced and Medicare ACOs and beneficiary characteristics summarized in this report. We present tables with results for BPCI Advanced episodes, as well as for eligible Medicare FFS episodes nationwide. BPCI Advanced episodes include both episodes eligible and ineligible for reconciliation. (Episodes may be ineligible for reconciliation for a few reasons, including that the beneficiary is attributed to certain ACOs, such as the Next Generation ACO.) Results are based on the evaluation team’s analysis of Medicare claims and enrollment data for episodes with anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021 (Model Year 4). We used the MDM to compile beneficiary-level payment model data.

The race and ethnicity data come from the RTI race codes from the Master Beneficiary Summary File. The HCC score is based on the 6 months prior to the anchor hospitalization or procedure. The share of episodes with prior admissions and the number of prior admissions are based on the 180 days prior to the anchor stay or procedure. The share of episodes with PDP admissions is based on the beneficiary having any days in the hospital during the 90-day PDP. The share of episodes with prior ED visits is based on 180 days before the anchor date. The super-utilizer indicator is for beneficiaries with four or more hospital admissions or ED visits during Model Year 4.

To identify the share of BPCI Advanced episode initiators in both the BPCI Advanced Model and Medicare ACOs, we compiled a sample of BPCI Advanced attributed physician group practices (identified using TINs) and hospitals (identified using CCNs) where the episodes included anchor stays or procedures beginning on or after January 1, 2021, and ending on or before December 31, 2021. We used the Shared Savings Program and Next Generation Provider-Level RIFs to identify BPCI Advanced episode initiators also participating in Medicare ACOs using TINs and CCNs.

Please refer to **Appendix A** for the definitions of all acronyms used within the following appendix.

**Exhibit O.1: BPCI Advanced Episodes, by ACO Attribution  
January 1, 2021 – December 31, 2021**

Clinical Episode Type	Number of Model Year 4 BPCI Advanced Episodes (N)	Percentage of BPCI Advanced Episodes for Beneficiaries Attributed to Medicare ACOs			
		All Medicare ACOs (%)	Shared Savings Program (%)	Next Generation ACO (%)	GPDC (%)
<b>All Clinical Episodes</b>	521,960	33.9	29.5	3.2	1.3
<b>Medical</b>	417,256	33.1	28.7	3.0	1.3
Cardiac Care	79,278	35.8	30.9	3.6	1.3
Gastrointestinal Care	23,023	36.7	31.9	3.4	1.4
Medical & Critical Care	282,598	32.0	27.7	2.9	1.3
Neurological Care	32,357	33.5	29.7	2.6	1.2
<b>Surgical</b>	104,704	37.4	32.7	3.6	1.1
Cardiac Procedures	17,920	39.4	32.0	5.7	1.8
Gastrointestinal Surgery	3,207	35.1	31.1	3.3	0.8
Orthopedics	64,314	36.5	32.4	3.1	1.0
Spinal Procedures	19,263	39.2	34.6	3.5	1.1

*Note:* See the first page of this appendix for data sources and more information. Episodes attributed to VTAPM and CEC were not included in this exhibit due to small sample sizes.

**Exhibit O.2: All Eligible Medicare FFS Episodes, Nationwide, by ACO Attribution,  
January 1, 2021 – December 31, 2021**

Clinical Episode Type	Number of Episodes (N)	Percentage of Episodes for Beneficiaries Attributed to Medicare ACOs			
		All ACOs (%)	Shared Savings Program (%)	Next Generation ACO (%)	GPDC (%)
<b>All Clinical Episodes</b>	2,762,628	33.9	29.0	3.8	1.0
<b>Medical</b>	1,760,532	33.2	28.4	3.7	1.0
Cardiac Care	380,928	36.0	30.8	4.0	1.0
Gastrointestinal Care	174,880	35.1	30.1	3.8	1.0
Medical & Critical Care	1,040,828	31.9	27.3	3.6	1.0
Neurological Care	163,896	32.8	28.1	3.6	0.9
<b>Surgical</b>	1,002,096	35.2	30.1	3.9	1.0
Cardiac Procedures	338,781	36.4	31.4	3.8	1.0
Gastrointestinal Surgery	76,060	34.2	29.5	3.7	0.9
Orthopedics	455,643	34.4	29.2	4.0	1.0
Spinal Procedures	131,612	35.5	30.5	4.0	1.0

*Note:* See the first page of this appendix for data sources and more information. The results in this exhibit are based on eligible Medicare FFS episodes nationally. Episodes attributed to VTAPM and CEC were not included in this exhibit due to small sample sizes.

**Exhibit O.3: Beneficiary Race and Ethnicity for BPCI Advanced Episodes, by ACO Attribution, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Race and Ethnicity	BPCI Advanced Episodes Attributed to an ACO (%)	BPCI Advanced Episodes Not Attributed to an ACO (%)	Difference (pp)
<b>Medical Clinical Episodes (N=417,256)</b>	Asian/Pacific Islander	1.6	2.2	0.6*
	Black or African American	8.4	11.1	2.8*
	Hispanic	4.9	7.0	2.1*
	American Indian/Alaska Native	0.2	0.5	0.4*
	Non-Hispanic White	83.2	77.3	-5.9*
	Other	0.6	0.7	0.1*
<b>Surgical Clinical Episodes (N=104,704)</b>	Asian/Pacific Islander	1.3	1.7	0.5*
	Black or African American	3.6	4.6	0.9*
	Hispanic	2.9	4.1	1.2*
	American Indian/Alaska Native	0.1	0.6	0.5*
	Non-Hispanic White	89.3	86.3	-2.9*
	Other	0.6	0.7	0.1*

**Note:** See the first page of this appendix for data sources and more information. The sample size listed does not account for episodes with missing race or ethnicity data. Asterisk (\*) indicates a statistically significant difference in the distribution of race and ethnicity between BPCI Advanced episodes attributed to an ACO and those not attributed to an ACO at the 90% level.

**Exhibit O.4: Beneficiary Race and Ethnicity Among Eligible Medicare FFS Episodes, Nationwide, by ACO Attribution, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Race and Ethnicity	Medicare FFS Episodes Attributed to an ACO (%)	Medicare FFS Episodes Not Attributed to an ACO (%)	Difference (pp)
<b>Overall (N=2,762,628)</b>	Asian/Pacific Islander	1.6	2.0	0.5*
	Black or African American	6.3	8.1	1.9*
	Hispanic	3.6	5.6	2.0*
	American Indian/Alaska Native	0.2	0.8	0.6*
	Non-Hispanic White	86.3	81.4	-4.9*
	Other	0.6	0.7	0.1*
<b>Medical Clinical Episodes (N=1,760,532)</b>	Asian/Pacific Islander	1.7	2.2	0.5*
	Black or African American	7.6	10.0	2.3*
	Hispanic	4.1	6.3	2.2*
	American Indian/Alaska Native	0.2	0.9	0.2*
	Non-Hispanic White	84.7	78.8	-5.8*
	Other	0.6	0.7	0.5*
<b>Surgical Clinical Episodes (N=1,002,096)</b>	Asian/Pacific Islander	1.4	1.7	0.3*
	Black or African American	4.0	4.7	0.7*
	Hispanic	2.9	4.4	1.5*
	American Indian/Alaska Native	0.2	0.6	0.5*
	Non-Hispanic White	89.0	86.0	-3.0*
	Other	0.6	0.7	0.1*

**Note:** See the first page of this appendix for data sources and more information. The results in this exhibit are based on eligible Medicare FFS episodes nationally. The sample size listed does not account for episodes with missing beneficiary race or ethnicity data. Asterisk (\*) indicates a statistically significant difference in the distribution of race and ethnicity between Medicare FFS episodes attributed to an ACO and those not attributed to an ACO at the 90% level.

**Exhibit O.5: Measures of Beneficiaries’ Medical Complexity, Utilization, and Other Characteristics for BPCI Advanced Episodes, by ACO Attribution, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Measures	BPCI Advanced Episodes Attributed to an ACO	BPCI Advanced Episodes Not Attributed to an ACO	Difference
Medical Clinical Episodes (N=417,256)	HCC Score	1.9	1.9	0.01
	Dementia	22.7%	27.6%	4.9 pp*
	Share of Episodes with Prior Admission	25.0%	26.0%	1.0 pp*
	Prior Admission Number of Days	2.2	2.5	0.3*
	Share of Episodes with Admissions During 90-Day PDP	28.7%	28.9%	0.3 pp*
	Number of Admissions During 30-Day PDP	1.0	1.0	0.07*
	Number of Admissions During 90-Day PDP	2.3	2.5	0.2*
	Share of Episodes with Prior ED Visits	33.5%	33.9%	0.4 pp*
	Share of Episodes with ED Visits During 30-Day PDP	11.2%	11.4%	0.2 pp
	Share of Episodes with ED Visits During 90-Day PDP	21.8%	21.9%	0.1 pp
	Dual Eligibility	17.8%	28.2%	10.4 pp*
	Rural	5.5%	7.8%	2.2 pp*
	Super-Utilizer	19.8%	19.5%	-0.3 pp*
Surgical Clinical Episodes (N=104,704)	HCC Score	1.1	1.1	-0.03*
	Dementia	9.4%	11.9%	2.6 pp*
	Share of Episodes with Prior Admission	9.4%	9.8%	0.3 pp*
	Prior Admission Number of Days	0.5	0.6	0.1*
	Share of Episodes with Admissions During 90-Day PDP	12.1%	12.4%	0.4 pp*
	Number of Admissions During 30-Day PDP	0.4	0.4	-0.01
	Number of Admissions During 90-Day PDP	0.8	0.8	0.01
	Share of Episodes with Prior ED Visits	19.8%	20.8%	1.0 pp*
	Share of Episodes with ED Visits During 30-day PDP	8.6%	8.9%	0.3 pp
	Share of Episodes with ED Visits During 90-Day PDP	15.6%	16.0%	0.4 pp
	Dual Eligibility	6.7%	11.0%	4.4 pp*
	Rural	3.4%	5.2%	1.8 pp*
	Super-Utilizer	5.6%	5.7%	0.1 pp

**Note:** See the first page of this appendix for data sources and more information. The sample size listed does not account for episodes with missing beneficiary data. Asterisk (\*) indicates the difference in distribution or mean difference is statistically significant between BPCI Advanced episodes attributed to an ACO and BPCI Advanced episodes not attributed to an ACO at the 90% level.

**Exhibit O.6: Measures of Beneficiaries’ Medical Complexity, Utilization, and Other Characteristics  
Among Eligible Medicare FFS Episodes, Nationwide, by ACO Attribution, January 1, 2021 – December 31, 2021**

Clinical Episode Type	Measures	Medicare FFS Episodes Attributed to an ACO	Medicare FFS Episodes not Attributed to an ACO	Difference
Overall (N=2,762,628)	HCC Score	1.7	1.7	< -0.01*
	Dementia Indicator	16.8%	20.0%	3.2 pp*
	Share of Episodes with Prior Admission	20.1%	20.8%	0.7 pp*
	Prior Admission Number of Days	1.7	1.8	0.2*
	Share of Episodes with Admissions During 90-day PDP	22.6%	23.0%	0.4 pp*
	Number of Admissions During 30-Day PDP	0.7	0.8	0.1*
	Number of Admissions During 90-Day PDP	1.7	1.9	0.1*
	Share of Episodes with Prior ED Visits	29.9%	30.7%	0.8 pp*
	Share of Episodes with ED Visits During 30-Day PDP	11.0%	11.1%	0.2 pp*
	Share of Episodes with ED Visits During 90-Day PDP	20.6%	20.8%	0.2 pp*
	Dual Eligibility	14.9%	22.5%	7.6 pp*
	Rural	9.2%	11.5%	2.3 pp*
	Super-Utilizer	14.8%	14.5%	-0.2 pp*
Medical Clinical Episodes (N=1,760,532)	HCC Score	1.9	1.9	-0.02*
	Dementia	21.4%	25.1%	3.7 pp*
	Share of Episodes with Prior Admission	25.3%	25.8%	0.4 pp*
	Prior Admission Number of Days	2.3	2.5	0.2*
	Share of Episodes with Admissions During 90-Day PDP	28.4%	28.2%	-0.1 pp*
	Number of Admissions During 30-Day PDP	1.0	1.0	0.1*
	Number of Admissions During 90-Day PDP	2.3	2.4	0.1*
	Share of Episodes with Prior ED Visits	34.5%	34.9%	0.3 pp*
	Share of Episodes with ED Visits During 30-Day PDP	11.8%	11.9%	0.1 pp*
	Share of Episodes with ED Visits During 90-Day PDP	22.7%	22.7%	-0.1 pp
	Dual Eligibility	18.8%	27.8%	8.9 pp*
	Rural	10.6%	13.0%	2.4 pp*
	Super-Utilizer	19.7%	18.9%	-0.8 pp*



Clinical Episode Type	Measures	Medicare FFS Episodes Attributed to an ACO	Medicare FFS Episodes not Attributed to an ACO	Difference
Surgical Clinical Episodes (N=1,002,096)	HCC Score	1.2	1.2	-0.03*
	Dementia Indicator	9.3%	10.7%	1.4 pp*
	Share of Episodes with Prior Admission	11.5%	11.6%	0.2 pp
	Prior Admission Number of Days	0.7	0.7	0.04*
	Share of Episodes with Admissions During 90-Day PDP	13.1%	13.4%	0.3 pp*
	Number of Admissions During 30-Day PDP	0.4	0.4	0.01*
	Number of Admissions During 90-Day PDP	0.9	0.9	0.04*
	Share of Episodes with Prior ED Visits	22.2%	23.1%	0.9 pp*
	Share of Episodes with ED Visits During 30-Day PDP	9.5%	9.7%	0.2 pp*
	Share of Episodes with ED Visits During 90-Day PDP	17.1%	17.3%	0.3 pp*
	Dual Eligibility	8.5%	12.9%	4.4 pp*
	Rural	7.0%	8.8%	1.8 pp*
	Super-Utilizer	6.6%	6.5%	-0.1 pp*

**Note:** See the first page of this appendix for data sources and more information. The results in this exhibit are based on eligible Medicare FFS episodes nationally. The sample size listed does not account for episodes with missing beneficiary data. Asterisk (\*) indicates the difference in distribution or mean difference is statistically significant between Medicare FFS episodes attributed to an ACO and Medicare FFS episodes not attributed to an ACO at the 90% level.

## Appendix P: Beneficiary Survey Instrument



# Health Care Experience Survey

We are interested in the quality of care you received at the hospital listed in the cover letter, and how your recovery has been going. We understand that this was probably a difficult time for you and your family. We appreciate you taking the time to tell us about your health care experiences. Please be assured that all responses are confidential.

There are four sections of this survey. The first section asks about *how you were feeling just before* you went to the hospital listed in the cover letter. The second section asks about *how you are currently feeling*. The third section asks about *your experience and satisfaction* with the hospital and any other places where you received care after you left the hospital. The last questions in the survey are about you.

### Instructions:

- Please read each question carefully and respond by marking the box next to the response that most closely represents your opinion.
- Please mark only one box for each question, unless it tells you to “Choose all that apply.”
- Many people use a PENCIL in case they want to change their answers. Please erase cleanly or white out any marks you wish to change. Please do NOT use a felt tip pen.
- Please do not make any stray marks on the form.

### 1. First, please indicate who is completing this survey.

- Person named in the cover letter
- Person named in the cover letter, with help from a family member, friend or caregiver
- A family member, friend, or caregiver of the person named in the cover letter
- Someone else who is not a family member, friend, or caregiver of the person named in the cover letter
- If the person to whom this was mailed cannot complete the survey, and there is no one else who can do it for him or her**, please mark this response and return the blank survey to Abt Associates, P.O. Box 5720, Hopkins, MN 55343 using the postage-paid envelope provided.

## Section 1. Before the Hospital

We would like to know how you were doing before you went to the hospital listed in the cover letter. Please think about your overall health and all of your medical needs at that time, and not just the reason you went to the hospital listed in your cover letter.

2. Thinking about the week before you went to the hospital, how much help did you need from another person with *bathing, dressing, using the toilet, or eating*?
  - No help needed from another person
  - Some help needed from another person
  - Complete help needed from another person
  - Don't know/Don't remember
  
3. Thinking about the week before you went to the hospital, how much help did you need from another person with *planning regular tasks*, such as making a grocery list or remembering to take medication?
  - No help needed from another person
  - Some help needed from another person
  - Complete help needed from another person
  - Don't know/Don't remember
  
4. Thinking about the week before you went to the hospital, what best describes your *use of a mobility device* such as a wheelchair, scooter, walker, or cane?
  - I never used a mobility device
  - I sometimes used a mobility device
  - I always used a mobility device
  - Don't know/Don't remember
  
5. Thinking about the week before you went to the hospital, what best describes your ability to *walk by yourself* without resting? That is, without the help of another person or the help of a mobility device.
  - I could walk several blocks by myself without resting or using a mobility device
  - I could walk one block by myself without resting or using a mobility device
  - I could walk from one room to another by myself without resting or using a mobility device
  - I was not able to walk by myself without resting or using a mobility device
  - Don't know/Don't remember

6. Thinking about the week before you went to the hospital, how much difficulty did you have *walking up or down 12 stairs*?

- I had no difficulty walking up or down 12 stairs
- I had some difficulty walking up or down 12 stairs
- I had a lot of difficulty walking up or down 12 stairs
- I was not able to walk up or down 12 stairs
- Don't know/Don't remember

7. Thinking about the week before you went to the hospital, how often did your *physical health or emotional problems* interfere with your social activities (like visiting friends, relatives, etc.)?

- All of the time
- Most of the time
- Some of the time
- A little of the time
- None of the time
- Don't know/Don't remember

8. Thinking about the week before you went to the hospital, how much did *pain* interfere with your normal activities?

- All of the time
- Most of the time
- Some of the time
- A little of the time
- None of the time
- Don't know/Don't remember

## Section 2. After the Hospital

It has been a few months since your hospital care and we would like to know how you are doing *today*. Please think about your overall health and all of your medical needs, and not just the reason you went to the hospital listed in your cover letter.

9. How much help do you currently need from another person with *bathing, dressing, using the toilet, or eating*?

- No help needed from another person
- Some help needed from another person
- Complete help needed from another person
- Don't know/Don't remember

10. How much help do you currently need from another person with *planning regular tasks*, such as making a grocery list or remembering to take medication?
- No help needed from another person
  - Some help needed from another person
  - Complete help needed from another person
  - Don't know/Don't remember
11. What currently best describes your *use of a mobility device* such as a wheelchair, scooter, walker, or cane?
- I never use a mobility device
  - I sometimes use a mobility device
  - I always use a mobility device
  - Don't know/Don't remember
12. What best describes your current ability to *walk by yourself* without resting? That is, without the help of another person or the help of a mobility device.
- I can walk several blocks by myself without resting or using a mobility device
  - I can walk one block by myself without resting or using a mobility device
  - I can walk from one room to another by myself without resting or using a mobility device
  - I am not able to walk by myself without resting or using a mobility device
  - Don't know/Don't remember
13. Do you currently have difficulty *walking up or down 12 stairs*?
- I have no difficulty walking up or down 12 stairs
  - I have some difficulty walking up or down 12 stairs
  - I have a lot of difficulty walking up or down 12 stairs
  - I am not able to walk up or down 12 stairs
  - Don't know/Don't remember
14. How often does your *physical health or emotional problems* currently interfere with your social activities (like visiting friends, relatives, etc.)?
- All of the time
  - Most of the time
  - Some of the time
  - A little of the time
  - None of the time
  - Don't know/Don't remember

15. How much does *pain* currently interfere with your normal activities?

- All of the time
- Most of the time
- Some of the time
- A little of the time
- None of the time
- Don't know/Don't remember

16. Overall, since you left the hospital, how satisfied are you *with your recovery*?

- Not at all satisfied
- Slightly satisfied
- Moderately satisfied
- Quite a bit satisfied
- Extremely satisfied
- Don't know/Don't remember

### Section 3. Health Care Experiences

Now, we would like to hear about your experiences while you were at the hospital listed in the cover letter and any other place where you received care after the hospital.

In the following questions, the term “medical staff” means doctors, nurses, physical or occupational therapists and any other medical professionals who helped take care of you at the hospital and afterwards, in other facilities or at home. For example, after leaving the hospital you may have received care from medical staff in a nursing home, rehabilitation facility, assisted living facility, a doctor's office, or at home.

We'd like to learn about your experience as you were leaving the hospital in the cover letter.

17. Looking back to the time you left the hospital, overall, *how prepared did you feel to leave*?

- Unprepared
- Moderately prepared
- Very prepared
- Don't know/Don't remember

Thinking about when you left the hospital listed in the cover letter, *how much do you agree or disagree with the following statement?*

18. The medical staff took your preferences and those of your family or your caregiver into account in deciding what health care services you should have after you left the hospital.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree
- Don't Know/Don't Remember
- Not Applicable

19. Where do you reside now?

- At my own home, in someone else's home, or in an assisted living facility (**Continue with the next section by following the arrow**)
- In a rehabilitation center, nursing home, or other health care facility (**Skip to Question 26 located on Page 6**)

Thinking about when you left the hospital listed in the cover letter, *how much do you agree or disagree with the following statements?*

20. Before you prepared to go home (or to someone else's home, or to an assisted living facility), you and your family or caregiver had a *good understanding of how to take care of yourself*.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree
- Don't Know/Don't Remember
- Not Applicable

21. Before you prepared to go home (or to someone else's home, or to an assisted living facility), *medical staff clearly explained how to take your medications*.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree
- Don't Know/Don't Remember
- Not Applicable, did not receive new medications

22. Before you prepared to go home (or to someone else's home, or to an assisted living facility), *medical staff clearly explained what follow-up appointments or treatments would be needed.*
- Strongly Disagree
  - Disagree
  - Agree
  - Strongly Agree
  - Don't Know/Don't Remember
  - Not Applicable
23. Overall, since you returned home (or to someone else's home, or to an assisted living facility), *you and your caregivers have been able to manage your health needs.*
- Strongly Disagree
  - Disagree
  - Agree
  - Strongly Agree
  - Don't Know/Don't Remember
  - Not applicable
24. Before you prepared to go home (or to someone else's home, or to an assisted living facility), *did doctors, nurses, or other staff talk with you about whether you would have the help you needed when you got home?*
- Yes
  - No
  - Don't Know/Don't Remember
  - Not applicable
25. Since leaving the hospital, if you needed help at home to manage your health, *did medical staff arrange services for you at home to help manage your health?*
- Yes
  - No
  - Don't Know/Don't Remember
  - Not Applicable, did not require help at home



26. Now we would like you to think about all of the healthcare you received *after* leaving the hospital. Using any number from 0 to 10, where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate *all* of your health care *after* leaving the hospital?

- |   |                            |   |
|---|----------------------------|---|
| <input type="checkbox"/> 0 (Worst possible) | <input type="checkbox"/> 4 | <input type="checkbox"/> 8                  |
| <input type="checkbox"/> 1                  | <input type="checkbox"/> 5 | <input type="checkbox"/> 9                  |
| <input type="checkbox"/> 2                  | <input type="checkbox"/> 6 | <input type="checkbox"/> 10 (Best possible) |
| <input type="checkbox"/> 3                  | <input type="checkbox"/> 7 |   |

**Section 4. Personal Characteristics**

27. What is the highest grade or level of school that you completed?

- 8th grade or less
- Some high school, but did not graduate
- High school graduate or GED
- Some college or 2-year (associate’s) degree
- 4-year (bachelor’s) college degree or equivalent
- More than 4-year college degree (such as a master’s or doctoral degree)

28. We may like to call you in the future for a 5 to 10 minute follow-up regarding your care experience. Participation is completely voluntary. May we have your permission to call you for a brief survey in the future?

- Yes, you may contact me for another brief survey in the future
- No, you may not contact me for another brief survey in the future

**IF YOU’D LIKE TO BE CONTACTED IN THE FUTURE**

29. So that we have the most up to date contact information for you in the future, please provide the best telephone number to reach you:

Telephone number with area code:  
 \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

***Thank you for completing the survey!***  
***Please mail it back in the enclosed postage-paid envelope***  
**Abt Associates, P.O. Box 5720, Hopkins, MN 55343**