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September 14, 2007

Carol M. Bazell, M.D., M.P.H.
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Attention: CMS–1392-P
7500 Security Blvd.
Baltimore, MD 21244-1850

Re: Medicare Program: Proposed Changes to the Hospital Outpatient Prospective Payment System and CY 2008 Payment Rates; Proposed Changes to the Ambulatory Surgical Center Payment System and CY 2008 Payment Rates [CMS-1392-P]

Dear Dr. Bazell:

Medtronic is the world's leading medical technology company specializing in implantable and interventional therapies that alleviate pain, restore health, and extend life. We recognize the importance of working with hospitals and ambulatory surgical centers in their critical role as providers of appropriate, high quality patient care, including innovative device technologies. In this interest, we appreciate the opportunity to comment on the CY 2008 proposed hospital outpatient and ambulatory surgical center rule.

Medtronic strongly supports the goal of payment accuracy. We recognize and appreciate the significant efforts CMS has employed in the development of the Hospital Outpatient Prospective Payment System (OPPS) and the Ambulatory Surgical Center (ASC) proposed rule. We also appreciate CMS's willingness to work with us and other stakeholders in support of accurate payments to ensure appropriate beneficiary access to a full range of treatment options in the outpatient and ambulatory settings.

We have extensively reviewed the OPPS data and methodologies used to set payment rates for device-dependent procedures in these settings in 2008. Again this year, CMS has undertaken efforts to improve the accuracy of the median cost calculations for device dependent APCs by ensuring the payment rates are derived from only correctly coded claims. We believe these efforts improve the rate-setting methodologies and result in continued improvement in the accuracy of the payment rates for many device-dependent APCs under the OPPS and ASC programs.

In addition to these improvements, Medtronic believes more work is necessary to refine the rate setting methodologies and ensure that payments for device-dependent APCs are appropriate and accurate. We remain concerned that accuracy of payments for device-dependent services continues to suffer as a result of the problem of charge compression,

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and we believe that until this long-standing issue is addressed under OPPS, the payment rates will continue to be out of alignment with hospital costs.

In addition, Medtronic is critically concerned about the proposed clinical APC assignment of rechargeable neurostimulators for CY 2008. We believe the proposed APC assignment does not sufficiently recognize the distinct therapeutic benefits nor the differences in resources associated with the technology and may therefore disrupt beneficiary access to this important new therapy. Our comments focus on methods of addressing this and other issues to ensure accurate payments in the outpatient hospital and ambulatory settings.

Implantation of Spinal Neurostimulators - Rechargeable Neurostimulators

Since January 1, 2006, CMS has granted pass-through status to rechargeable neurostimulators (C1820). Medtronic appreciates CMS's recognition of the significant cost difference and substantial clinical improvement of rechargeable neurostimulator technologies in appropriately selected patient populations by allocating pass through status to these devices.

On December 31, 2007, the pass-through status for rechargeable neurostimulators will expire. In anticipation of the expiration of the pass-through status, Medtronic and the other manufacturers of rechargeable technology met with CMS and recommended the creation and assignment of rechargeable neurostimulators to a new APC. However, in the CY 2008 proposed rule, CMS proposed to assign procedures involving rechargeable neurostimulators to APC 0222 *(Implantation of Neurological Device)*, the same APC as all other non-rechargeable peripheral and spinal neurostimulators.

In the proposed rule, CMS raised a number of concerns regarding the creation of a separate APC for rechargeable neurostimulators. The specific concerns expressed by CMS included the following:

- Cost Differential and 2-Times Rule
- Availability of Coding and Coding Burden on Hospitals
- Increased Packaging
- Product Mix
- Efficient Use of Resources
- Comparable Treatment Across APCs

During the comment period, Medtronic and the other manufacturers met jointly again with CMS to address these concerns and to reiterate the need and justification for a separate APC assignment for rechargeable neurostimulators. Our comments in this letter focus on information shared during that meeting and continue to recommend a separate

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APC assignment for rechargeable neurostimulators. A copy of the meeting presentation is provided as a reference in the attachments to this letter.

Cost Differential and the 2-Times Rule: In the proposed rule, CMS states that while there is a cost difference between procedures with rechargeable and non-rechargeable devices, a separate APC for rechargeable neurostimulators is not warranted because the difference in costs "is not so great" that it causes a 2-times violation if both types of devices are retained in a combined APC. Table 1 below shows the cost findings for APC 0222 presented by CMS in the proposed rule. The outpatient claims data show a median cost difference of nearly $6,500 (or 56%) between rechargeable and non-rechargeable neurostimulators.

Table 1

APC 0222 Configurations	CY 2006 Count of Hospitals Billing	CY 2006 Pass Edit, Nontoken No FB Single Bills	CY 2006 Pass Edit, No FB Median Cost
APC 0222B, including only claims with rechargeble neurostimulators	238	422	$18,088.71
APC 0222, including claims with both rechargeable and nonrechargeable neurostimulators	868	2,830	$12,161.64
APC 0222A, including only claims with nonrechargeable neurostimulators	781	2,412	$11,607.75

External cost data from IMS Health, shown in Table 2, confirm the differential between rechargeable and non-rechargeable devices and demonstrate that the costs of both types of devices are likely underestimated in the CY 2006 claims data. (Analysis provided later in our comments suggests that the differences in cost findings between OPPS claims data and IMS Health are largely due to the problem of charge compression.) Aside from rechargeable procedures, the third party data suggest that even non-rechargeable device and procedural costs may not be adequately paid in APC 0222.

Table 2

Neurostimulator System	Median CY 2006 Average Sales Price[1]				CMS Device Cost Estimate (83.29%)[2]	Difference b/w CMS and IMS data
	Generator	Programmer	Recharger	Total Device Cost		
Rechargeable	$14,721	$1,086	$2,173	$17,980	$15,066	($2,914)
Non Rechargeable	$10,732	$989	NA	$11,721	$9,668	($2,053)
Difference b/w rechargeable and non-rechargeble				$6,260	$5,398	($862)

[1] IMS HEALTH, Hospital Supply Index of non-federal, short-term acute care hospital purchases for Jan 1, 2006 - Dec 31, 2006, median average sales price

[2] Federal Register/ Vol. 72 No.148/August 2, 2007/ Proposed Changes to Outpatient Hospital Prospective Payment System and CY 2008 Payment Rates; Table 35*CY 2008 Proposed Reduction for Full Credit Case APC 0222

Though the 2-times rule is cited as a major factor in the proposed policy not to assign rechargeable neurostimulators to a separate APC, previous rulemaking by CMS – specifically the April 2000 OPPS final rule – identified several other factors that must be

taken into consideration in determining APC classifications. These factors include resource homogeneity, clinical homogeneity, provider concentration, frequency of service, and minimal opportunities for upcoding and code fragmentation. Two of these factors are particularly relevant for rechargeable neurostimulators: resource homogeneity and provider concentration.

Resource Homogeneity: In the April 2000 final rule, CMS states that costs within an APC should be homogenous. If costs are not homogeneous, it could lead to difficulty in establishing equitable payment; distort payment levels to hospitals that perform a disproportionate share of expensive or inexpensive procedures; encourage facilities only to provide the less costly procedures; and result in a potential access problem for the more costly services within the APCs.

While the cost differential between rechargeable and non-rechargeable neurostimulators does not violate the 2-times rule, the difference in costs is substantial and raises issues regarding the overall homogeneity of resources in APC 0222. As described above, the claims data for this technology show a clear, substantial variation in facility resources (nearly $6,500) associated with rechargeable and non-rechargeable neurostimulators. If CMS were to proceed with a combined APC for both rechargeable and non-rechargeable neurostimulators, the resulting payment would be inequitable for both technologies and may lead to incentives for facilities to furnish only the less costly procedures.

Provider Concentration: CMS states in the April 2000 final rule that it is "particularly important to have an accurate payment level for services with a high degree of provider concentration." Based on the data presented in Table 35 of the CY 2008 proposed rule (APC 0222 CY 2006 Data Based on Claims Reporting Different Neurostimulator Devices), there is a significant degree of provider concentration for rechargeable neurostimulators as only 27 percent of the total number of hospitals that implant neurostimulators also implant rechargeable devices. A concentration of this level limits the procedure volume available to affect the recalibration of the payment rate for APC 0222, and therefore may lead to inequitable payment for the implanting hospitals in the long term.

Availability of Coding and Coding Burden on Hospitals: As CMS discusses in the proposed rule, since rechargeable neurostimulators do not have a unique CPT code assigned for billing, other methods for identifying rechargeable device claims will be required to allow for separate APC assignment for this technology. We believe that there are two possible approaches that can rectify this issue and allow for separate APC assignment for these services.

- *C-Code/CPT Code Combination*
  This option would use the particular CPT and C-code combinations associated with rechargeable and non-rechargeable neurostimulators to determine the unique APC assignment. This would allow non-rechargeable neurostimulator

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claims to be assigned to the current APC 0222 using the combinations of CPT 63685 and C1767, or CPT 64590 and C1767; and rechargeable neurostimulator claims to be assigned a new APC using the combination of CPT 63685 and C1820, or CPT 64590 and C1820 (Table 3).

Because this option allows hospitals to utilize current coding mechanisms for billing rechargeable and non-rechargeable technologies, it would alleviate concerns expressed by CMS regarding the potential hospital administrative burden associated with the establishment of unique HCPCS Level II codes to facilitate separate APC assignment for rechargeable systems. This option is the simplest and least burdensome approach for hospitals, and in fact creates no new burden for hospitals at all since, even with the expiration of the pass-through, they must continue to bill the C code to ensure accurate claims submission. In addition, CMS has demonstrated the ability to administer the assignment of combinations of codes to specific APCs through the development of the new composite APCs for CY 2008.

Table 3

APC	APC Description	CPT Code	C Code
0222	Implantation of neurological device, non-rechargeable	63685	C1767
		64590	C1767
New Rechargeable APC	Implantation of neurological device, rechargeable	63685	C1820
		64590	C1820

- *Create Two New HCPCS Level II Codes*
  This option proposes the creation of two new HCPCS Level II codes: GXXXX, *"Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, non-rechargeable"*, and GYYYY, *"Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, rechargeable"* (Table 4).

  The creation of the two new HCPCS Level II G codes would replace the use of CPT codes 63685 and 64590 in the OPPS. The new HCPCS Level II G codes allow assignment of rechargeable neurostimulator procedures to a separate APC and enable tracking of the utilization and costs association with the implantation of the rechargeable and non-rechargeable neurostimulator technologies. This option is consistent with previous CMS actions to identify and allow claims processing for services of importance to Medicare. Medtronic believes that the meaningful median cost difference would offset any additional administrative burden for hospitals to implement the new HCPCS Level II codes.

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Table 4

APC	APC Description	HCPCS II Code	HCPCS II Code Description
0222	Implantation of neurological device, non-rechargeable	GXXXX	Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, non-rechargeable
New Rechargeable APC	Implantation of neurological device, rechargeable	GYYYY	Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, rechargeable

Increased Packaging: As discussed in the rule, the goal of increased packaging and creating larger payment bundles is to increase efficiency and allow hospitals maximum flexibility to manage their resources. CMS cited a desire to increase the size of the payment bundles as a reason for assigning rechargeable and non-rechargeable neurostimulators to the same APC. Although Medtronic understands the concept of increasing the size of the payment bundles for ancillary and supportive items, we believe that distinct treatment of rechargeable neurostimulators is not an issue of packaging. Rechargeable and non-rechargeable neurostimulators are not ancillary services or products; the technologies represent alternative treatments depending on patient needs and neither rechargeable nor non-rechargeable neurostimulators are subordinate, supportive or optional service to the other. These devices are the primary driver of cost within the APC, accounting for approximately 85% of resources. Combining both types of technologies under the same APC would result in underpayment and could in fact reduce hospital efficiency, as hospitals will likely limit beneficiary access to rechargeable technologies and implant less costly, but shorter-lived non-rechargeable devices requiring more frequent replacement procedures.

Product Mix: In the proposed rule, CMS suggests that as rechargeable neurostimulators become the "dominant device" implanted for neurostimulation, the median costs of APC 0222 (and APC 0039) will reflect the costs of the technology in future years. We note that the 2006 claims data for APC 0222 demonstrate that rechargeable spinal cord neurostimulators accounted for approximately fifteen percent of spinal cord neurostimulator implantations filed in single procedure claims.[1] Based on additional analysis of claims data by Boston Scientific, spinal cord neurostimulators (both rechargeable and non-rechargeable) represent approximately 40 percent of all the single-procedure claims for neurostimulator implantations that map to APC 0222. The remaining 60 percent of single-procedure claims in APC 0222 are sacral, gastric, or other peripheral nerve neurostimulator implantations, all of which utilize and are indicated for only non-rechargeable technologies. As a result, the majority of all neurostimulator implant procedures used to calculate median costs in APC 0222 are not related to chronic pain and do not utilize rechargeable technology.

[1] Federal Register/ Vol. 72, No. 148/ Thursday, August 2, 2007/ Proposed Rules; Proposed Changes to the Hospital Outpatient Prospective Payment System and CY 2008 Payment Rates, Table 35

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While the use of rechargeable spinal cord neurostimulators is expected to grow in the coming years, we do not expect it to become the dominant technology used in rate-setting for APC 0222, and consequently the median costs for this APC will continue to be under representative of this technology. We believe that rechargeable technology will continue to be an appropriate choice for a subset of patients that require higher levels of energy.

Based on analysis of Medtronic data for non-rechargeable neurostimulator replacements, we believe that the appropriate candidates for rechargeable technology are those who would deplete the battery by end of year two when their therapy has been optimized. Historically, it has been reported by physicians that battery life concerns with non-rechargeable neurostimulators have prompted them to attempt to maximize the time between replacements by not prescribing the optimal level stimulation to provide pain control for patients. In 2005, Medtronic indicated that we expect this to be approximately 35% of the population. Given the battery management vs. pain control paradigm that has existed, this number may in fact be higher.

Table 5 describes factors taken into consideration when device choice is made. Patients undergo a trial period at which time the physician is able to best determine the best system for optimal pain control.

Table 5

Pain Classification	**Unilateral**	**Bilateral**	**Complex**
Associated Indications	Single limb pain CRPS	FBS CRPS-2 Radiculopathies Arachnoiditis Peripheral neuropathy	CRPS-1 FBS Radiculopathies Arachnoiditis
Characteristics	Monoradicular stable	Stable bifocal	Multifocal, progressive, complex symptoms, more dermatomes involved, pain pattern changes with postural changes, mixed origin
Systems to Consider	Single Channel Non-Rechargeable Device	Dual Channel Non-Rechargeable or Rechargeable Device	Rechargeable Device

Regarding CMS's reference to APC 0039, we believe it is important to note that rechargeable technology is only approved for spinal cord stimulation at this time. While CMS extended the pass-through payment for rechargeable devices to APC 0039, it was granted based on a request from an individual physician for a non-approved indication, and pass-through volume in this APC was extremely low. Because rechargeable

neurostimulators are not labeled for peripheral and cranial indications, we would not expect to see any meaningful impact to utilization or median cost data in APC 0039.

Efficient Use of Resources: CMS states that its standard practice of folding pass-through devices into their underlying APCs would increase the size of the APCs and encourage hospitals to use resources most efficiently. We are concerned that the proposed bundling of rechargeable and non-rechargeable technologies will create incentives to minimize procedure costs at the expense of longer term efficiency. Under CMS's proposed policy, payment rates for rechargeable neurostimulators would be substantially lower than device and procedure costs, and would likely encourage hospitals to implant the less costly but shorter-lived, non-rechargeable devices in patients with complex, high energy pain patterns. If the use of the non-rechargeable devices increases in patients with complex pain, we would expect patients to benefit less from the therapy (because the conventional, non-rechargeable device battery must be managed at the expense of providing higher levels of neurostimulation to treat complex pain) and we would expect an increase in subsequent device replacement procedures, leading to additional surgical risk and inconvenience for patients and higher incremental expenditures by Medicare for the costs of subsequent replacement procedures. The creation of two APCs will encourage long-term efficiency by reducing future replacement procedures, as well as provide beneficiary access to appropriate care.

Comparable Treatment across APCs: Medtronic is unaware of any other circumstances under which the magnitude of cost differential between packaged services is as substantial as proposed for neurostimulators. Again, the devices are the primary cost driver of this APC and the use of this technology over time will improve long-term efficiencies due to the reductions in future replacement procedures.

Medtronic recommends that CMS create a new APC for rechargeable neurostimulators and encourages CMS to adopt one of the two administrative options outlined in our comments to facilitate the separate APC assignment for these devices.

APC Relative Weight Calculations – Charge Compression

Since the inception of the hospital outpatient prospective payment system in 2000, Medtronic and other medical device manufacturers have been very concerned about the accuracy of payment weights based on estimates of hospital costs. The calculation to arrive at weights based on estimates of hospital costs poses two major problems for higher-cost implantable devices:

- First, hospitals typically use a much lower percentage charge mark-up for higher cost medical devices than they do for lower-cost medical supplies.

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- Second, CMS uses a uniform cost-to-charge ratio from the cost report for all products within the medical supplies cost center to develop an estimate of a hospital's costs based on the billed charges submitted for those products.

The application of a single, uniform cost-to-charge ratio to products with significantly varying charge mark-ups results in estimates of costs that are too low for products with low mark-up percentages and too high for products with high mark-up percentages. Using such flawed estimates of costs to calculate cost-based payment weights results in inaccurate and distorted payments for hospital services in which a significant percentage of the resource utilization is concentrated in advanced, higher-cost implantable devices.

Over the past several years, Medtronic and other medical device manufacturers have done a significant amount of work to document the existence of charge compression and to demonstrate its impact on the hospital rate-setting process. For example, in 2003, The Moran Company conducted a comprehensive analysis for the Advanced Medical Technology Association (AdvaMed) demonstrating the effects of charge compression and the impacts of different approaches to calculating payment weights in OPPS. In 2006, The Moran Company conducted a separate analysis for Medtronic using external data matched to OPPS claims data to demonstrate that lower-cost items are clearly marked up by hospitals by a larger percentage than higher-cost items.

While up until 2006 most of these efforts were focused on OPPS – which has utilized cost-based weights since its conversion to prospective payment – the MedPAC recommendations on physician-owned specialty hospitals in 2005 and the subsequent CMS proposal to adopt cost-based weights in the inpatient prospective payment system expanded our concerns and increased the importance of developing and implementing a solution for charge compression.

During the comment period last year on the proposed inpatient rule for FY 2007, a breakthrough analysis conducted by Dr. Christopher Hogan on behalf of Medtronic and other medical device manufacturers provided a new way to identify and measure the existence of charge compression within Medicare claims and cost data and to develop a correction for it using a statistical adjustment. CMS did not adopt the proposed correction for charge compression in the 2007 IPPS and OPPS rules, but, in the final IPPS rule, acknowledged the existence of the problem and indicated that it found the analysis compelling.

To verify the approach developed by Dr. Hogan and to conduct further analysis on charge compression and whether other categories of services might experience similar problems, CMS announced that it would contract with an independent research firm to study the issue further. CMS stated that it would address the charge compression issue based on the findings and recommendations of the commissioned research. CMS awarded a contract to RTI International to conduct the study on charge compression. The result of RTI's work,

released to the public in March 2007, verified the findings of Dr. Hogan's analysis. In its conclusions, RTI stated that charge compression and other aggregation-related problems do introduce bias to cost-based weights, and that refinements to the CCRs – including a regression approach to disaggregate CCRs for certain revenue centers – can reduce that bias.

In the proposed outpatient rule for 2008, CMS proposed not to implement a statistical adjustment for charge compression based on the RTI recommendations in the APC weights for the coming year. CMS raised concerns with certain aspects of the RTI analysis and whether its recommendations on disaggregated CCRs were applicable to OPPS without further analysis.

In particular, CMS noted that the RTI report used CCRs based on "all charges" (i.e., inpatient and outpatient charges and costs) but matched those CCRs only to inpatient estimates of charges – rather than both inpatient and outpatient charges – to generate the regression-adjusted CCRs. In addition, by basing the regression adjustments only on revenue codes where there were significant expenditures and utilization in the inpatient setting, CMS expressed concern that revenue codes utilized more frequently for outpatient services – such as "Pharmacy Incident to Radiology" in the pharmacy cost center – would not be appropriately recognized in the proposed RTI adjustment. CMS further stated that implementing the disaggregated IPPS-based CCRs in OPPS for CY 2008 "could result in greater instability in relative payment weights for CY 2008 than would otherwise occur."

Rather than implement the RTI-recommended regression-based adjustments for charge compression in 2008, CMS said it would undertake further analysis in preparation for the CY 2009 OPPS rule-making cycle to determine whether an adjustment for charge compression was appropriate. CMS noted that while RTI "accepted some measurement error in its analysis by matching an 'all charges' CCR to inpatient estimates of charges," the agency believed that CCR adjustments used to calculate payment should be based on the comparison of cost report CCRs to combined inpatient and outpatient charges. CMS also indicated that the "all-charges" model should take into consideration an expanded subset of revenue codes to ensure that all services of relevance to OPPS were reflected in the disaggregated CCRs.

Medtronic appreciates the focus placed by CMS on charge compression in the 2008 outpatient proposed rule, and we are supportive of CMS efforts to ensure that all outpatient services are paid fairly and accurately. Though CMS proposes to consider charge compression further in the CY 2009 cycle, Medtronic believes that the analytic justification and means to address the problem – specifically for higher-cost implantable devices – exists now and can be readily incorporated into the APC weights for CY 2008. We believe this is the case for a number of reasons.

First, though RTI developed disaggregated CCRs using inpatient charges only, the original analysis and model developed by Dr. Hogan to address the problem of charge compression

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used both inpatient and outpatient charges, and the two models yielded similar results for the revenue centers involving implantable devices. Moreover, Dr. Hogan's work also included a sensitivity analysis to determine the effects of using different trimming methods and data sets (inpatient only or combined inpatient and outpatient) to derive the disaggregated CCRs. The table below, which is taken from the full paper by Dr. Hogan that was submitted to CMS in Medtronic's comments last year on the FY 2007 IPPS proposed rule, displays the sensitivity analysis.

The analysis demonstrates that the coefficients for determining the disaggregated CCRs are very similar using inpatient and outpatient charges combined (method 1 in the table) or inpatient charges alone (method 4). If anything, the combined inpatient and outpatient charges lead to modestly higher disaggregated CCRs for implantable devices than inpatient charges alone. Given the relatively trivial differences between estimates using the two data sets, we believe the fact that RTI's analysis was based on inpatient charges alone should not be a reason for delaying the implementation of disaggregated CCRs under the supplies cost center. Such adjustments would clearly improve rate-setting for APCs involving implantable devices in CY 2008. Once implemented, CMS could consider further refinements to the methodology in future years, such as recalculating the disaggregated CCRs based on inpatient and outpatient charges combined.

Dr. Hogan updated that analysis to use more recent cost report and claims data, and obtained virtually the same results. (As noted below, the updated analysis can be found in the attachments to this letter.) As before, use of all charges to calculate the device portion of supplies charges led to a slightly larger estimate difference in average CCR between implantable devices and routine supplies. In the updated analysis, he further showed why the use of all charges versus inpatient-only charges is not critical for the analysis of supplies costs. At the hospital level, there is a 0.98 correlation between device charges as a share of total charges calculated using total (inpatient and outpatient) charges, and the same figure calculated using inpatient charges only. With that high a correlation, the regressions would likely yield essentially identical results. Further, Dr. Hogan demonstrated that the choice of which set of charges to be used to weight the regression had essentially no impact. Weighting by total supplies charges, inpatient supplies charges, or outpatient supplies charges generated almost exactly the same regression results.

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Table: Predicting Hospital-Level Supplies CCR Based on Mix of Supplies Charges.						
	Variable	Coeff	Std Error	T-value	P-value	Implantable less General Supply Coeff
1: Preferred Specification, Use Inpatient Plus Outpatient Supplies Charges						
	Adj R-Sq 0.1928					
	Intercept	0.108	0.027	3.91	<.0001	
	CCR, ancill. Excl supplies	0.717	0.031	23.07	<.0001	
	pct_0270 (general supplies)	-0.049	0.027	-1.81	0.0711	
	pct_0278 (implantables)	0.133	0.029	4.56	<.0001	0.18
	pct_0272 (sterile supplies)	-0.025	0.032	-0.78	0.4376	
	pct_0275 (pacemaker)	0.160	0.040	4.02	<.0001	0.21
2: Same as 1, but toss out top and bottom 1% of influential datapoints						
	Adj R-Sq 0.2039					
	Intercept	0.103	0.027	3.88	0.0001	
	CCR, ancill. Excl supplies	0.717	0.030	23.62	<.0001	
	pct_0270 (general supplies)	-0.040	0.026	-1.52	0.1285	
	pct_0278 (implantables)	0.138	0.028	4.90	<.0001	0.18
	pct_0272 (sterile supplies)	-0.039	0.031	-1.26	0.2075	
	pct_0275 (pacemaker)	0.178	0.039	4.60	<.0001	0.22
3: Same as 1, but toss out top and bottom 5% of influential datapoints						
	Adj R-Sq 0.2269					
	Intercept	0.100	0.026	3.88	0.0001	
	CCR, ancill. Excl supplies	0.709	0.028	25.20	<.0001	
	pct_0270 (general supplies)	-0.037	0.025	-1.48	0.1396	
	pct_0278 (implantables)	0.142	0.027	5.33	<.0001	0.18
	pct_0272 (sterile supplies)	-0.024	0.030	-0.82	0.4128	
	pct_0275 (pacemaker)	0.143	0.037	3.86	0.0001	0.18
4: Use Inpatient Charges Only						
	Adj R-Sq 0.1924					
	Intercept	0.110	0.026	4.16	<.0001	
	CCR, ancill. Excl supplies	0.715	0.031	23.01	<.0001	
	pct_0270 (general supplies)	-0.049	0.026	-1.92	0.0547	
	pct_0278 (implantables)	0.128	0.028	4.66	<.0001	0.18
	pct_0272 (sterile supplies)	-0.020	0.031	-0.63	0.5271	
	pct_0275 (pacemaker)	0.132	0.040	3.32	0.0009	0.18
5: Same as 1, but use total hospital CCR excluding supplies as control variable						
	Adj R-Sq 0.2079					
	Intercept	0.123	0.027	4.61	<.0001	
	CCR, total excl supplies	0.611	0.025	24.48	<.0001	
	pct_0270 (general supplies)	-0.098	0.026	-3.70	0.0002	
	pct_0278 (implantables)	0.105	0.029	3.64	0.0003	0.20
	pct_0272 (sterile supplies)	-0.085	0.031	-2.71	0.0068	
	pct_0275 (pacemaker)	0.141	0.039	3.58	0.0004	0.24
Source: Analysis of 5% SAF 2004 inpatient and outpatient files matched to 2003 hospital cost reports.						
Notes: Dependent variable mean is 0.33 for all regressions. Number of observations is roughly 3,000 for all regressions. Regressions were weighted by supplies charges.						

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Second, though CMS stated it would like to expand the analysis of charge compression to a subset of revenue centers with more concentrated utilization and expenditures in the outpatient system, the most glaring problems associated with charge compression over the past several years have been in APCs with implantable devices and high levels of resource consumption in revenue centers under the supplies cost center. While we believe analysis of additional revenue centers could help determine if charge compression is a notable problem elsewhere, we do not believe that such an analysis, and any refinements developed thereafter, would have a substantive impact on the need for (or results of) adjustments to correct for the problem of charge compression in the supplies cost center and the revenue centers analyzed by RTI and Dr. Hogan.

While CMS stated in the rule that OPPS already takes into consideration a broader range of cost centers than recommended by RTI for purposes of IPPS, there is only one additional cost center for supplies that is taken into consideration in OPPS (cost center 3540 for prosthetic devices), but that cost center is used by just a tiny number of hospitals and has little bearing on the aggregate median cost findings for APCs involving implantable devices. We therefore believe that the use of an additional cost center in OPPS does not adequately help to address the problem of charge compression.

To assist CMS in the review and development of weights reflecting adjustments for charge compression in the supplies cost center, we are submitting a full set of "decompressed" weights for all APCs as well as a description of the assumptions used in the development of these weights. These items can be found in the attachments to this letter. The analysis, disaggregated CCRs, and revised weights were prepared by Dr. Hogan. We would encourage CMS to review the results as well as the summary and analysis prepared by Dr. Hogan, which provide further commentary on the RTI recommendations and the proposed rule's policy on charge compression.

As stated above, Medtronic believes that the problem of charge compression for implantable devices has been well established and well documented, and ample justification exists to implement a correction for it in CY 2008 – without further delay or need for additional analyses in other cost or revenue centers. We respectfully request that CMS implement such a correction in 2008 – either in full or as the start of a transition to decompressed weights over a period of two or three years. This action would remove biases in the development of payment weights for procedures involving implantable therapies and increase the accuracy of the overall payment system. Medtronic is available and willing to assist CMS as it considers any issues related to charge compression in 2008 and thereafter.

Medtronic recommends that CMS implement a correction to address the long-standing charge compression issue in 2008 – either in full, or begin a transition to decompressed weights over a period of two or three years.

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Composite APCs & Packaged Services

To create incentives for efficiency, CMS proposes to increase the size of the payment bundles under the OPPS through packaging of select services and the development of two new composite APCs. In increasing the size of the payment bundles through these mechanisms, Medtronic believes it is critical that CMS strike a balance between establishing incentives for efficiency and ensuring that the resulting payments appropriately account for the resources associated with performing the common combinations of services. This balance is particularly important for dissemination of new technologies, as appropriate beneficiary access could be hindered by bundled payments considered to be inappropriate.

Composite APC 8000

In the development of the composite APCs, CMS proposes to develop larger payment bundles of major separately paid services commonly performed in the same hospital outpatient encounter. For CY 2008, CMS proposes to establish two composite APCs. One of the composite APCs, APC 8000, will be developed specifically for electrophysiologic evaluation and ablation services. This APC will provide a single payment for specific combinations of cardiac electrophysiologic services commonly performed and reported on the same date of service. For electrophysiologic services, single bills are rare and likely the result of incorrect coding because these procedures are frequently provided in combination in the same hospital outpatient encounter. CMS believes the composite APC approach will enable the use of more claims data and establish payment rates that more appropriately capture the costs of electrophysiologic services under the OPPS.

Medtronic agrees with CMS's assessment that electrophysiologic services are appropriate for a composite APC and supports CMS's proposal. In making this change, CMS has increased the availability of claims data, which results in payment rates that appear to appropriately capture the costs of these complex procedures. We appreciate CMS's efforts and the careful analysis undertaken in the development of this composite APC. As CMS develops future composite APCs, however, we encourage the Agency to be cautious in its approaches to ensure that the resulting APCs achieve the balance between efficiency and appropriate payment to account for resources associated with the combination procedures. Any further development of composite APCs should be accompanied by a clear, transparent process for identifying those future APCs.

Medtronic agrees electrophysiologic services are appropriate for a composite APC and supports CMS's proposal. Medtronic encourages CMS to be cautious in the future application of this concept to ensure resulting APCs achieves balance between efficiency and appropriate payment.

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Packaged Services
Under the packaging provisions of the proposed rule, CMS proposes to package payment for seven categories of ancillary or supportive items and services into the payment for the primary diagnostic or therapeutic modalities with which they are furnished. CMS believes it is appropriate to package these categories because the services contained in them are typically an integral part of the primary service they support.

Overall, Medtronic supports the policy of increasing the size of the payment bundles for ancillary or minor items and services, however, we encourage CMS to be cautious in its application of this concept to ensure that packaging or bundling of each component maintains payment accuracy and appropriate beneficiary access. Specifically related to the expanded packaging proposed for 2008, Medtronic finds it difficult to assess certain aspects of the proposal to determine if a proper balance is achieved between efficiency and appropriate payment for items and services involved. CMS has not provided a crosswalk of data to aid stakeholders in understanding where the costs of packaged items and services were allocated or what portion of costs were assigned to a particular APC. Without this level of detail, it is difficult to provide a number of specific comments related to the proposal. Medtronic feels it is critical that CMS make this information available to the public to ensure that the appropriateness of the packaging can be properly assessed.

In addition, Medtronic urges CMS to work with stakeholders to establish clear guidelines for packaging of items and services to ensure that the process for developing increased payment bundles is transparent and open. These guidelines should provide a framework for determining whether an item or service is appropriate for packaging and allow for flexibility in the process, furnishing opportunities for conditional packaging or exceptions to the packaging policy in cases of compelling clinical evidence or when beneficiary access may be compromised. We believe such a framework will enable CMS to balance incentives for efficiency and ensure payments resulting from packaging appropriately account for hospital resources.

Overall, Medtronic believes the framework should be supported by a foundation that specifically reserves packaging for high-volume, low-cost minor or ancillary services, and services that are frequently performed with the independent service (e.g., services are performed together in 75% or more of the cases). In addition, Medtronic recommends that CMS not package the following types of services:

- Low-volume, high-cost procedures performed only occasionally in conjunction with the independent service
- Low-volume, high-cost services which are concentrated in a limited number of hospitals
- Services represented by add-on codes that are infrequently performed with the independent service

- Device-dependent procedures or procedures utilizing single-use devices and highly specialized capital equipment

Medtronic also encourages CMS to provide explicit billing instructions to hospitals, and possibly even consider coding edits where appropriate, to ensure that future payments for packaged services are accurate. Hospitals should be encouraged to include charges for packaged services on their claims to ensure that the costs associated with packaged services can be used in establishing appropriate payment rates in future years.

Medtronic recommends CMS provide the data necessary to assess the packaging proposal. Medtronic also recommends that CMS work with stakeholders to establish appropriate guidelines for packaging of items and services.

Proposed Payment When Devices Are Replaced with Partial Credit to the Hospital

For CY 2008, CMS is proposing to implement a new policy to adjust the OPPS and ASC payment amounts when the hospital receives partial credit towards a replacement device. This policy is an extension of provisions implemented for CY 2007, which adjust the APC payment when the hospital receives a device at no-cost or full credit toward a replacement device.

Under the provisions of the CY 2008 proposed rule, CMS will reduce the payment for certain device-dependent APCs in instances where the device credit is greater than or equal to 20 percent of the cost of the new replacement device. In the absence of claims data on which to base payment adjustment amounts, CMS is proposing to reduce the APC payment by one half of the already established full credit offset amount in instances where the hospital has received a partial credit toward a replacement device that meets or exceeds this threshold. To facilitate the payment adjustment, CMS proposes to create a new modifier to identify claims for which partial credit has been issued to the hospital.

Medtronic supports the goal of accurate payment for services provided and supports the concept of appropriate payment adjustments for devices that are replaced without cost or with partial credit. We agree that neither the Medicare program nor Medicare beneficiaries should be required to pay for devices provided to the hospital at no cost or where a substantial credit has been issued for a replacement device. We provide comments on these provisions to further refine the process put forth by CMS in the proposed rule.

Specifically, we have comments in the following four areas:

- Appropriateness of the Partial Credit Threshold
- Establishing Payment Adjustment Amounts

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- Impact of Residual Costs on Payment Accuracy
- Billing Options for Hospitals

Appropriateness of the Partial Credit Threshold
CMS proposes to reduce the payment amount for certain device-dependent APCs in instances where the hospital receives a credit totaling 20 percent or more of the cost of the new replacement device. While we agree that a payment adjustment in instances where the hospital receives a substantial credit toward a replacement device is reasonable, we believe further consideration may be useful regarding the appropriateness of the 20 percent credit threshold and its consistency with a comparable policy recently finalized in the IPPS.

CMS initially proposed a similar partial credit adjustment threshold in the IPPS proposed rule this year. During the IPPS comment period, a number of commenters suggested that the proposed threshold should be raised from 20 percent to 50 percent or greater of the cost of the replacement device. In relation to the partial credit adjustment threshold proposed under IPPS, commenters indicated that a 20 percent threshold may be too low and raised issues about the potential administrative burden on hospitals. After consideration of these comments, CMS ultimately increased the partial credit adjustment threshold to 50 percent in the IPPS final rule.

We encourage CMS to adopt consistent thresholds across payment systems to administer partial credit adjustments. We believe maintaining consistent thresholds for all providers will reduce confusion and allow for clarity and compliance among providers.

> **To assure consistency with the device replacement policy in IPPS and assure that hospitals only have to follow a single set of guidelines on replaced devices, Medtronic recommends CMS increase the partial credit adjustment threshold to 50 percent or greater of the cost of the replacement device.**

Establishing Payment Adjustment Amounts
In the absence of claims data on which to base the payment reduction, CMS is proposing to reduce the APC payment by one half of the established full credit adjustment amount. In the proposed rule, CMS expressed reluctance to impose specific billing requirements on hospitals for claims representing partial credits to gain empirical data to establish appropriate credit amounts. Specifically, CMS was concerned with the potential administrative burden on hospitals if hospitals were required to reduce their charges in proportion to the partial credit received.

Although we understand CMS's concerns related to the hospital administrative burden, we note that CMS has required hospitals to adhere to specific charging instructions in the past. Specifically, CMS has provided instructions to hospitals in instances where the hospital receives a device at no charge or with full credit. In Transmittal 1103, issued

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November 3, 2006, CMS provides instructions to hospitals informing them to charge less than $1.01 in those instances [token charges].

Since there are no claims data to validate the reasonableness of the current proposed payment reductions, we believe the mechanism set forth by CMS is rational for the time being. However, we encourage CMS to work with hospitals to develop the least burdensome approach to incorporate reductions based on empirical data as soon as these data are available.

Medtronic disagrees with the recent recommendation made by the Data Subcommittee of the APC Advisory Panel at the Panel's September 2007 meeting, which suggested that hospitals use the exact credit percentage as the modifier when billing for services involving partial credits. We believe this recommendation may be too easily confused with the existing numeric modifiers that are commonly used in conjunction with CPT coding. Therefore, Medtronic recommends that CMS not implement this recommendation from the Data Subcommittee.

Medtronic recommends CMS provide appropriate billing instructions to hospitals and establish partial credit payment adjustment amounts based on empirical data when claims data become available.

Impact of Residual Costs of Partial Credits on Payment Accuracy
In the development of the proposed rates, CMS excludes claims containing token charges and the –FB modifier to ensure that rate setting methods include only claims that contain the full device costs. This process seeks to ensure that these APCs more appropriately reflect true hospital costs of device intensive procedures. We appreciate CMS's efforts in removing claims containing token charges and believe this process is important in improving the accuracy of hospital payments for device intensive procedures.

CMS has recognized that in instances where a partial credit is issued, some hospitals will adjust their charges so that they appropriately represent only the residual costs remaining after the partial credit is applied. While we believe this billing practice is appropriate, we are concerned that the median values for certain device-dependent APCs will depreciate if claims containing charges for these residual costs are included in rate-setting. Medtronic believes it is important for CMS to exclude claims with charges representing residual costs from the medians used for the establishment of APC payment rates. We believe this approach could be easily accomplished by removing those claims containing the new modifier created by CMS to identify claims containing partial credits. Removing these claims will provide a more accurate payment to the hospital by ensuring that only claims containing the full costs of the device are included in rate setting.

Medtronic recommends that residual costs associated with claims involving partial credits be removed from the medians used to establish APC payment rates.

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Billing Options for Hospitals
In efforts to support continuous quality improvement, Medtronic and other manufacturers encourage hospitals to return explanted devices that are replaced during the typical product lifecycle for purposes of inspection. Through this process, credits are determined after the case-by-case review by the manufacturer, which occurs at a point in time after explant and replacement. The time from explant of the device, receipt of the device by the manufacturer, subsequent device analysis and issuance of the warranty results can often be eight weeks or longer. Hospitals are therefore generally unaware, at the time of explant, if a device will qualify for a full or partial warranty credit or none at all.

In the FY 2008 IPPS final rule, CMS recognized the process for device evaluation and allowed two billing options for hospitals to ensure efficient administration of the credit adjustment policy. Essentially, the CMS options allow hospitals to 1) submit claims for replacement devices immediately without the required coding (condition code) to facilitate the credit payment adjustment and later, if a credit is ultimately issued, hospitals may submit a claim adjustment with the appropriate coding (condition code) or 2) hold the claim until a credit determination is made.

We believe the preferred option may vary from hospital to hospital and therefore, we encourage CMS to maintain consistency with the FY 2008 IPPS final rule and allow hospitals the option to submit claims immediately and later adjust the claim if necessary or hold the claim until a credit determination is made. Providing hospitals the same billing options under OPPS for claims involving partial credits will create consistencies in approaches between the payment systems and lessen administrative burden and revenue cycles for hospitals.

Medtronic recommends that CMS allow the same billing options to hospitals under OPPS as are allowed in the FY 2008 IPPS final rule.

Ambulatory Surgical Center Payment System and CY 2008 Payment Rates

ASC Payment Policy for Device Intensive Procedures
In the CY 2008 ASC Final Rule, CMS establishes a modified payment methodology for a specific group of device-intensive services. Specifically, for APCs where the device cost exceeds 50 percent of the APC median cost, CMS will pay the ASC 100 percent of the OPPS device payment. The ASC budget neutrality adjustment will only apply to the service portion of the APC payment. Medtronic appreciates the consideration CMS has given to this modified approach. Because ASC rates will be based on OPPS, we remind CMS that it is increasingly critical that the OPPS rates appropriately reflect hospital

acquisition costs. Overall, we support this payment methodology as it preserves beneficiary access to high quality care in the ambulatory setting.

Medtronic supports the modified ASC payment methodology (100 percent of the OPPS device payment) for device-dependent APCs as it preserves beneficiary access to high quality care in the ambulatory surgical setting.

Beneficiary Coinsurance in ASC
Under the revised ASC payment system, the beneficiary deductible and coinsurance is 20 percent, except for screening colonoscopies and screening flexible sigmoidoscopies for which the statute requires a 25 percent coinsurance. The OPPS coinsurance rate is the national unadjusted coinsurance amount which cannot be less than 20% of the OPPS payment, but may not exceed 40% of that rate. Most importantly the coinsurance amount is statutorily limited to the Part A deductible, currently $992. Unfortunately, this provision does not extend to the ASC setting of care and is a unique provision of the OPPS system.

The potential for a higher coinsurance payment in the ASC setting could have a negative financial impact on patients. Medtronic is concerned about the current ASC patient co-payment and the potential financial liability a beneficiary may incur in that site of service. Therefore, Medtronic believes that it is important for CMS to gain clarification regarding the statute to determine if the coinsurance provisions could be made applicable to ASC coinsurance amounts since OPPS payments are the basis for ASC rates.

Medtronic recommends CMS seek clarification on the OPPS coinsurance to determine if the statute language may extend to the ASC setting.

Medtronic Product-Specific APC Concerns

Continuous Glucose Monitoring
For CY 2008, CMS proposes to reassign CPT code 95250 *(Ambulatory continuous glucose monitoring of interstitial fluid via a subcutaneous sensor for up to 72 hours; sensor placement, hook-up, calibration of monitor, patient training, removal of sensor and printout of recording)* for continuous glucose monitoring (CGM) from the current APC 0421 to APC 0097. APC 0421 was deleted in the CY 2008 proposed rule and no rationale was provided in the rule explaining the deletion or the reassignment of CPT 95250 to APC 0097. The reassignment results in a 34 percent reduction in payment for CGM services.

Medtronic believes assignment of CPT code 95250 to APC 0097 is inappropriate. In the case of APC 0097, the median costs for five of the CPT codes in the APC appear to be more than two-times the lowest median cost in that APC. According to the two times rule, items within an APC group cannot be considered comparable if the highest median

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is more then two times greater than the lowest median for an item in the same APC. In APC 0097, CPT code 95250 as well as other high volume CPT codes 93236 and 93270 appear to exceed the two-times rule.

In addition to the apparent two-times violation, the placement of CPT code 95250 in APC 0097 results in issues with resource comparability among the procedures. CGM involves significant patient training. The average CGM patient training is 30-40 minutes while there is minimal to no patient training with other CPT codes except G0248. CPT code 95250 includes a sensor cost of $35 which means that CGM supplies alone consume 53% of APC 0097 payment. Furthermore, physician practice expense data (clinical labor, supplies and equipment) demonstrate significantly higher costs for code 95250 than most other codes in proposed APC 0097.

To resolve the issues with the two-times violation and the resource comparability, Medtronic recommends CMS do one of the following:

- Do not delete APC 0421 and maintain the previously assigned three codes (including CPT code 95250) in APC 0421
- Split proposed APC 0097 *(Prolonged Physiologic and Ambulatory Monitoring)* into Levels I And Level II as shown below:

Code	Description	Level	Single Frequency	Total Frequency	"True" Median Cost	Direct PE Cost
93225	ECG monitor/record, 24 hrs	I	132,895	133,530	$58.40	$30.06
93226	ECG monitor/report, 24 hrs	I	108,842	110,203	$79.53	$27.11
93231	Ecg monitor/record, 24 hrs	I	35,618	35,787	$59.53	$26.73
93232	ECG monitor/report, 24 hrs	I	30,343	30,788	$74.84	$31.79
93236	ECG monitor/report, 24 hrs	I	20,962	21,176	$49.95	-
93270	ECG recording	I	19,993	20,179	$49.52	$8.14
93786	Ambulatory BP recording	I	2,898	2,907	$58.51	$26.86
93788	Ambulatory BP analysis	I	1,593	1,596	$64.02	$16.87
93799	Cardiovascular procedure	I	3,900	6,692	$38.41	-
94762	Measure blood oxygen level	I	1,628	73,283	$60.22	$30.25
94775	Ped home apnea rec, hk-up	I	-	-	-	-
94776	Ped home apnea rec, downld	I	-	-	-	-
0154T	Study sensor aneurysm sac	I	28	43	$33.92	-
93271	Ecg/monitoring and analysis	II	9,289	9,388	$95.85	$334.15
95250	Glucose monitoring, cont	II	730	763	$103.27	$121.63
G0248	Demonstrate use home inr mon	II	17	20	$67.83	$133.96
G0249	Provide test material,equipm	II	6	13	$119.84	$102.75

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At the September 2007 APC Advisory Panel Meeting, the Panel recommended that CMS retain APC 0421 and assign CPT code 95250 in that APC. We believe this recommendation is appropriate, but would support either of the approaches indicated above to ensure appropriate payment for CGM services under OPPS.

Medtronic recommends CMS either retain APC 0421 and the current codes assigned to that APC (including CPT code 95250) or split the proposed APC 0097 into Levels I and II Prolonged Physiologic and Ambulatory Monitoring APCs and include CPT code 95250 in the Level II APC.

Implantation of Gastric Electrodes
The CPT code 43647 (*Laparoscopy, surgical implantation or replacement of gastric neurostimulator electrodes, antrum*) became effective on January 1, 2007. In the 2007 OPPS final rule, this code was assigned to APC 0130 *(Level I Laparoscopy)* on an interim basis and assigned a status indicator of "NI", which allows for public comment regarding the payment status following publication of the final rule. On January 23, 2007, Medtronic submitted comments to CMS related to the interim APC assignment. Our comments recommended that CMS reassign CPT code 43647 to APC 0061 (*Laminectomy or Incision for Implantation of Neurostimulator Electrodes, Excluding Cranial Nerve*) based on the clinical and resource similarities of this procedure with other services within that APC. However, in the CY 2008 proposed rule, CMS maintained the original APC assignment for CPT code 43647.

Enterra® Therapy is indicated for the treatment of intractable (drug refractory) nausea and vomiting secondary to gastroparesis of diabetic or idiopathic etiology. The therapy uses mild electrical pulses to stimulate the stomach. This electrical stimulation reduces the symptoms of nausea and vomiting associated with gastroparesis. In some patients, this condition results in severe, chronic nausea and vomiting that cannot be adequately controlled by available drugs. These patients have difficulty maintaining their nutritional needs, and may require some form of tube feeding to ensure adequate nutrition. Enterra Therapy is an implantable system, which requires a neurostimulator and two implantable leads. Our comments address the interim APC assignment for the implantation of the leads only (CPT 43647).

At the September 2007 meeting of the APC Advisory Panel, the Panel recommended CMS reevaluate its decision to place CPT code 43647, a device-dependent code, in APC 0130, which is not device-dependent. Medtronic agrees with the Panel. Consistent with our comments submitted previously to CMS on this issue, Medtronic believes a more appropriate APC assignment for CPT code 43647 would be APC 0061. Medtronic believes the current assignment of CPT code 43647 to APC 0130 is inappropriate for the following reasons:

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- APC 0130 is not a device-dependent APC and does not meet the clinical or cost coherence requirements
- Implantation of gastric electrodes requires resources which are significantly different that those for other procedures in APC 0130
- Proposed payment for APC 0130 is below hospitals' fixed costs for implant devices, creating the potential to eliminate the outpatient hospital setting for the procedure

To support the reassignment of this code to APC 0061, we provide the following grounds:

Clinical Characteristics: CPT code 43647 involves the placement of neurostimulator leads (electrodes) and comparable to the designation of other procedures involving neurostimulator electrodes, is therefore a device-dependent procedure. The procedure represented by CPT code 43647 is consistent with the clinical characteristics of all five of the CPT codes represented in APC 0061 as those procedures also involve the placement of neurostimulator electrodes and all are device-dependent (see below).

CPT Codes / Descriptions for APC 0061

63655	Laminectomy for **implantation of neurostimulator electrodes**, plate/paddle, epidural
64575	Incision for **implantation of neurostimulator electrodes**; peripheral nerve (excludes sacral nerve)
64577	Incision for **implantation of neurostimulator electrodes**; autonomic nerve
64580	Incision for **implantation of neurostimulator electrodes**; neuromuscular
64581	Incision for **implantation of neurostimulator electrodes**; sacral nerve (transforaminal placement)

Description for Gastric Neurostimulator Leads CPT 43647

43647	Laparoscopy, surgical **implantation or replacement of gastric neurostimulator electrodes**, antrum

By contrast, APC 0130 is dominated by diagnostic, unlisted and hernia repair codes. Although some procedures in APC 0130 reference the laparascopic approach, similar to CPT code 43647, only two procedures in APC 0130 involve implantation of a device. Those procedures are as follows:

- 49324, *insertion of peritoneal catheter for dialysis or drainage*, and
- 0155T, *implantation of gastric electrodes for morbid obesity.*

It is important to note that currently there are no commercial products on the market that involve implantation of gastric electrodes for obesity (0155T)

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Finally, and most importantly, assignment of CPT 43647 to APC 0061 allows for a more clinically coherent payment system in that all the peripheral neurostimulator lead implantation procedures involving incisions of some nature would be assigned to the same APC. This better aligns the outpatient prospective payment system with the inpatient payment system where all peripheral neurostimulator lead implantations, including those for gastric neurostimulation, are reported using the same ICD-9-CM code: 04.92 (*Implantation or replacement of peripheral neurostimulator lead(s)*).

Cost Analysis: The cost of the leads to the hospital drive the median cost for CPT 43647. Each case requires the implant of two single electrode leads.

Units	Average Cost Per Lead*	Average Cost Per Case (single lead times two)
231	$2,201.01	$4,402.03

**IMS HEALTH Hospital Supply Index of non-federal, short-term acute care hospital purchases 1/1/2006-12/31/2006*

The estimated median cost for implanting gastric neurostimulator electrodes is consistent with the median costs for APC 0061. The table below compares the median costs and 2008 proposed payment rates for APC 0130 and 0061.

APC	Median Costs for APCs	2008 Proposed Payment Rate
0130	$2,190.06	$2,217.49
0061	$5,113.26	$5,179.85

There are no procedures assigned to APC 0130 that involve devices of such a nature or expense. More importantly, the proposed payment rate of $2,217.49 is inadequate to cover the hospital costs. The payment under APC 0130 only covers the cost of one of the two necessary neurostimulator electrodes, leaving the hospital at a financial loss for the second electrode as well as the procedural costs.

Clearly, the most appropriate APC for code 43647 is APC 0061 as it will provide adequate payment for the costs associated with the device and procedure and is more clinically coherent.

Medtronic recommends that CPT code 43647 be reassigned from APC 0130 to APC 0061 as this procedure is similar clinically and with respect to resource consumption. Further, we recommend that the description of APC 0061 be revised to read: *Laminectomy, Laparoscopy, or Incision for the Implantation of Neurostimulator Electrodes, Excluding Cranial Nerve.*

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Packaging Intraoperative Services – Intravascular Ultrasound (APCs 0416 & 0670)
Coronary and non-coronary intravascular ultrasound (IVUS) (CPT codes 92978, 92979, 37250, & 37251) involves high resource costs associated with the highly specialized capital equipment and the single use IVUS catheter. Due to the fact that IVUS is a low volume procedure relative to the total procedure volume of the independent procedures (e.g. non-coronary stenting, angioplasty), the median costs of the APC with which IVUS is packaged are not changed in a significant manner to reflect the higher resources associated with the use of this technology. Therefore, the payments do not correspond with the high resource cost to hospitals using IVUS.

In the 2005 OPPS data, the IVUS procedure had median costs of nearly $2,000, with approximately $800 of those costs related solely to the device component. By packaging the costs for these procedures, hospitals purchasing the capital and single-use equipment associated with these services will be reimbursed the same amount for the independent procedure as hospitals that do not purchase these items. In addition, many of the coronary and non-coronary IVUS procedures are performed diagnostically and are not furnished on the same date as an independent procedure, such as coronary or non-coronary stenting and/or angioplasty. In these cases, hospitals only receive payment for the diagnostic procedure (APCs 0080, 0267, 0280), which would not cover the costs associated with the services performed. Given these concerns, Medtronic recommends that the IVUS procedures should not be packaged as proposed.

> **Medtronic recommends CMS not package intravascular ultrasound payments and reestablish APC 0416 with the status indicator "S" for CPT procedure codes 37250, 37251, 92979 and 93572. Medtronic also recommends that CMS reestablish APC 0670 reserve with status indicator "S" for CPT procedure codes 31620, 92978, 93571, and 93662.**

Radio Frequency (RF) Therapy for Benign Prostatic Hyperplasia (BPH)
Medtronic's PROSTIVA® RF Therapy is indicated for the treatment of symptoms due to urinary outflow obstruction secondary to BPH in men over the age of 50 with prostate sizes between 20 and 50 cc.

PROSTIVA RF Therapy is a minimally invasive procedure that delivers low-level radio frequency energy into the prostate, which destroys the prostate tissue allowing the patient to urinate more normally. Only the selected, obstructive tissue is destroyed and necrotic lesions are created. The urethra and rest of the prostate remain intact. The procedure is described by CPT code 53852 (*Transurethral destruction of prostate tissue; by radio frequency thermotherapy*).

In 2007, CPT code 53852 was assigned to APC 0675 (*Prostatic Thermotherapy*) with a payment rate of $2,528.64. The 2008 proposed rule reassigns CPT code 53852 to APC 0163 (*Level IV Cystourethroscopy and other Genitourinary Procedures*) with a payment rate of $2,351.39. We do not believe the proposed reassignment of code 53852 to APC

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0163 is clinically appropriate or consistent with the resource costs of other procedures assigned to APC 0163. We recommend that CPT 53852 be reassigned to APC 0429 (*Level V Cystourethroscopy and other Genitourinary Procedures*). Our grounds for the reassignment are discussed below.

First, CMS cost data show that the median cost of CPT code 53852 ($2932.22) is 26 percent higher than the median cost of APC 0163 ($2322.30) to which CMS proposes to reassign it. The median cost of CPT code 53852 ($2932.22) more closely aligns with the median cost of APC 0429 ($2887.48). This APC includes a clinically comparable minimally invasive therapy to treat symptoms of BPH, CPT 52647 (*Laser coagulation of prostate, including control of postoperative bleeding, complete*) which has a median cost of $2943.84.The clinical characteristics of CPT 53852 and 52647 are much the same. Both of the procedures can be done under direct visualization, placement of the energies are customized, and there is no incision or cutting of the tissues involved.

Second, CMS data on the direct costs of clinical labor, supplies, and equipment captured in the CMS database for practice expenses under the physician fee schedule support the assignment of CPT code 53852 to APC 0429. Specifically, the direct costs of CPT code 53852 ($1206.94) are higher than the direct costs of CPT code 52647 ($1074.38) yet 52647 is proposed for reassignment to APC 0163 instead of more the appropriate APC 0429.

Third, CMS data on intra-service times shows that CPT code 53852 takes longer to perform (58 minutes) than CPT code 52647 (45 minutes). Intra-service time is a strong predictor of the hospital resources required to perform a given procedure. Since CPT code 53852 requires more time than CPT code 52647, it supports a conclusion that a more appropriate APC reassignment for CPT code 53852 would be to APC 0429 rather than to APC 0163.

Medtronic recommends that CPT 53852 be reassigned to APC 0429 (*Level V Cystourethroscopy and other Genitourinary Procedures*).

Catheter Reassignment
Medtronic is aware of and supports the deletion of APC 0223 "Implantation of pain management catheter" and the subsequent reassignment of CPT 62350 to APC 0224 "Implantation of catheter/reservoir/shunt." The reassignment results in increased resource homogeneity and clinical coherence.

Medtronic supports the reassignment of CPT code 62350 to APC 0224 "Implantation of catheter/reservoir/shunt."

Removal of Patient - Activated Cardiac Event Recorder
For CY 2008, CMS proposes to add two CPT codes to APC 0109. With the addition of these codes, the APC 0109 would be comprised of the following:

- 33284 *(Removal of an implantable, patient - activated cardiac event recorder)*
- 63746 *(Removal of entire lumbosubarachnoid shunt system without replacement)*
- 36575 *(Repair of tunneled or non-tunneled central venous access catheter, without subcutaneous port or pump, central or peripheral insertion site)*
- 36589 *(Removal of tunneled central venous catheter, without subcutaneous port or pump)*

Codes 63746 and 33284 are currently assigned to APC 0109 and 36575 and 36589 to are assigned to APC 0621. As illustrated in the table below, the re-assignment of codes 36575 and 36589 to APC 0109 results in a 43 percent reduction in payment for APC 0109 and a 30% increase in the Level I vascular procedure, APC 0621. Clearly these two codes contribute many services with associated low charges otherwise the great variation in payment would not be associated with the reassignment of these codes.

Medtronic recommends that CMS reexamine both the coding assignment and the resulting payment. Medtronic suggests if CMS desires to remove the central venous catheter coding from the current APC assignment 0621 that it warrants a standalone APC, rather than misalignment of clinical coherence and a significant payment reduction of APC 0109.

	CY 2007 Payment	**CY 2008 Proposed Payment**	**Percent Change**	**APC coding assignment change**
APC 0109 ***Removal of implanted devices***	$ 675.64	$386.02	- 43%	Adds codes 36575 and 36589
APC 0621 ***Level I Vascular Access Procedures***	$539.97	$ 700.90	+ 30%	Eliminates codes 36575 and 36589

Medtronic recommends that CMS reexamine both the coding assignment and the payment that results from adding CPT 36575 and 36589 to APC 0109.

Medtronic

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Conclusion

Despite continued improvement in many of the device-dependent APC payment rates since the system's inception, we remain concerned that services involving advanced implantable medical devices will be inaccurately paid in the OPPS without the implementation of a reasonable and timely solution for the problem of charge compression. We appreciate the opportunity to provide these comments and CMS's consideration of the recommendations contained in this letter. We look forward to collaboration with CMS on the development of future payment policies. If you have any questions, please contact me at 763.505.2748.

Sincerely,

Christine M. Jackson
Senior Reimbursement Manager
Health Policy and Payment

Attachments

Attachments to Medtronic Comments on CY 2008 Proposed OPPS Rule

Attachment 1: Slide Presentation of September 7, 2007 Meeting with CMS on Rechargeable Neurostimulators

Attachment 2: Analysis of Charge Decompression for Devices in the CY 2008 OPPS Proposed Rule

Attachment 3: Impact of Charge Regression Adjustment on CY 2008 APCs

Attachment 1: Slide Presentation of September 7, 2007
Meeting with CMS on Rechargeable Neurostimulators

Outpatient Hospital Reimbursement for Neurostimulators: OPPS Proposed Rule

Boston Scientific, Medtronic, & St. Jude Medical Meeting with CMS

September 7, 2007

Agenda

- Packaging of Rechargeable Neurostimulator Implants into APC 0222
- Review of Rechargeable Neurostimulator Technology and Clinical Benefit
- Issues Raised in Proposed Rule
- Recommendations

OPPS Actions on Rechargeable Neurostimulators

- Rechargeable neurostimulator implants approved for pass-through payment in 2006-2007
- Pass-through payment to be discontinued in 2008
- Companies requested distinct coding and separate APC for rechargeable neurostimulators
- 2008 proposed rule packaged rechargeable neurostimulators into APC 0222 "*Implantation of Neurological Device*" with predecessor non-rechargeable device

Concerns with OPPS Proposal

Proposed packaging in 2008 will result in inadequate hospital payment for more advanced rechargeable technology

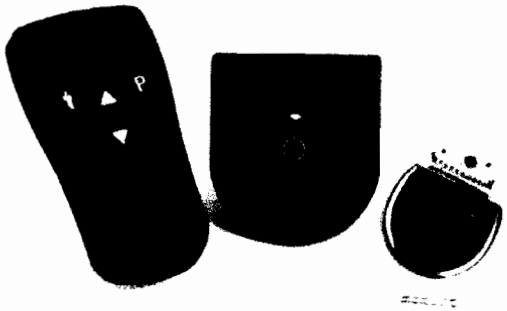
→

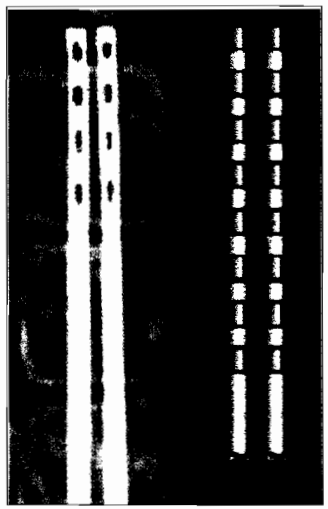
Patients who would benefit from rechargeable technology may not receive it, leading to increased replacement surgeries and associated risks

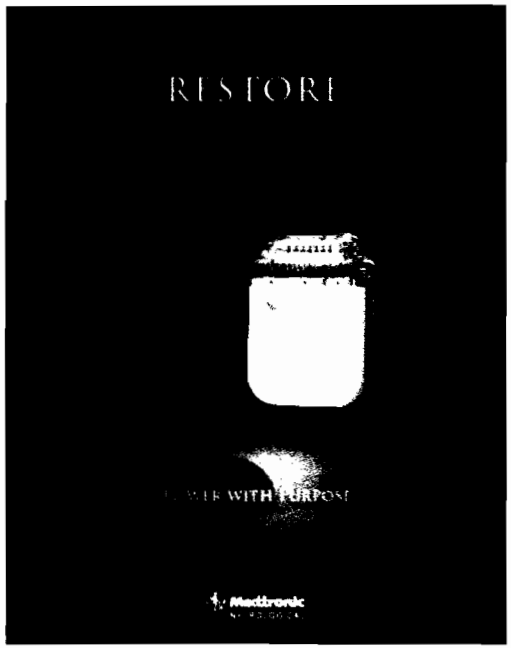
Recommendations

- Distinct APCs based on rechargeability
  - Create new APC for implantation of rechargeable pulse generators for spinal cord (SCS) and peripheral nerve stimulation (PNS)
  - Retain APC 0222 for implantation of non-rechargeable pulse generators or receivers
- Adopt separate coding structure for rechargeable neurostimulators
  - C codes or G codes

Rechargeable Neurostimulator Technology







Key Benefits of Rechargeable Neurostimulation Technology

- Advanced power source and functionality
  - Recharges safely and repeatedly through the skin wirelessly
  - Stimulates multiple, non-contiguous pain areas with more electrodes and programming options
- Higher power output to optimize pain relief
  - Meets the high energy demands of complex pain
  - Alleviates major problem in clinical practice of having to manage battery life rather than patient's chronic pain
  - Reduces the need for surgical battery replacement
- Increased compliance with treatment protocol
  - Eliminates physician need to compromise pain relief settings or turn stimulation off to preserve battery life
  - Greatly improves patient compliance over medication therapy

Battery Life Managed at the Expense of Pain Relief

Spinal Cord Stimulator Adjustment to Maximize Implanted Battery Longevity: A Randomized, Controlled Trial Using a Computerized, Patient-Interactive Programmer

Richard B. North, MD[*,†], ▪ David D. Brigham, BS[†], ▪ Alexander Khalessi, MS[*], ▪ Sherri-Kae Calkins[†,§], ▪ Steven Piantadosi, MD, PhD[¶], ▪ David S. Campbell, BS[†], ▪ Michael John Daly, MD[‡], ▪ P. Bobby Dey, MD[‡], ▪ Giancarlo Barolat, MD[§], ▪ Rod Taylor, PhD MSc[**]

 1094-7159/04/$15.00/0
Neuromodulation, Volume 7, Number 1, 2004 13–25

Patient Benefit from Reduced Replacement Procedures

- Reduction in commonly cited complications (low occurrence in general)
  - Infection
  - Seroma
  - Pain over implant
  - Allergic reaction
  - Hardware malfunction
  - Battery failure
  - Skin erosion

Turner JA, Loeser JD, Deyo, RA, Sanders SB. Spinal cord stimulation for patients with failed back surgery syndrome or complex regional pain syndrome: a systematic review of effectiveness and complications. *Pain*, 2004; 108: 137-147

Cameron, T. Safety and efficacy of spinal cord stimulation for the treatment of chronic pain: a 20-year literature review. *Journal of Neurosurgery: Spine*, 2004; Volume 100: 254-267

Follett KA, Boortz-Marx RL, Drake JM, DuPen S, Schneider SJ, Turner MS, Coffey RJ. Prevention and Management of Intrathecal Drug Delivery and Spinal Cord Stimulation System Infections. *Anesthesiology*, 2004; V 100, No 6; 1582-1594

Conditions That Led to Pass-Through Approval Still Hold True

- Device demonstrates substantial clinical improvement
- Cost of device is "not insignificant"
- Proposed APC 0222 not appropriate for rechargeable technology

Neurostimulator Cost Findings from 2008 Proposed Rule

"Review of our CY 2007 claims data for APC 0222 shows that the cost of the associated neurostimulator implantation procedures are higher when the rechargeable neurostimulator is implanted rather than the traditional non-rechargeable neurostimulator."

OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715 [emphasis added]

TABLE 35.—APC 0222 CY 2006 DATA BASED ON CLAIMS REPORTING DIFFERENT NEUROSTIMULATOR DEVICES

APC 0222 configurations	CY 2006 count of hospitals billing	CY 2006 pass edit, nontoken, no FB single bills	CY 2006 pass edit, nontoken, no FB median cost
APC 0222, including claims with both rechargeable and nonrechargeable neurostimulators ...	868	2,830	$12,161.64
APC 0222A, including only claims with nonrechargeable neurostimulators	781	2,412	11,607.75
APC 0222B, including only claims with rechargeable neurostimulators	238	422	18,088.71

- Procedures with rechargeable devices are $6,500, or 56%, greater than with non-rechargeable

Issues Raised By CMS in 2008 Proposed Rule

1. Cost Differential and 2-Times Rule
2. Coding
3. Increased Packaging
4. Product Mix
5. Efficient Use of Resources
6. Comparable Treatment Across APCs

2 Times Rule Not Only Reason to Split APCs

CMS: "..the difference in costs [between rechargeable and non-rechargeable devices] is not so great that retaining the implantation of both types of devices for spinal and peripheral neurostimulation in APC 0222 would cause a 2 times violation, and thereby, justify creating a new clinical APC."[1]

- 2 times violation should be a sufficient but not a necessary condition for splitting APCs
- Rechargeable neurostimulators have a substantial cost difference compared to non-rechargeable neurostimulators
- Claims data underestimate the cost of rechargeable neurostimulators
- Magnitude of cost differential could affect hospital behavior and hence beneficiary access to most appropriate therapy

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715

Independent Data Confirm Cost Differences Between Rechargeable and Non-Rechargeable Neurostimulators

CMS data demonstrate substantial cost differential in APC 022 between median costs of rechargeable and non-rechargeable device procedures.

IMS ASP data confirm significant differences in the ***device costs*** of rechargeable and non-rechargeable devices.

APC 0222 Configurations	CY 2006 Median Procedure Cost	Device Portion (83.29%)
APC 0222 - with rechargeble neurostimulators	$18,089	$15,066
APC 0222 - with nonrechargeable neurostimulators	$11,608	$9,668
Difference	**$6,481**	**$5,398**

Neurostimulator System	Median CY 2006 Average Sales Price[1]			
	Generator	Programmer	Recharger	Total Device Cost
Rechargeable	$14,721	$1,086	$2,173	$17,980
Non Rechargeable	$10,732	$989	NA	$11,721
			Difference	**$6,260**

- Differences in device cost underestimated in claims data relative to IMS data
- Suggests even *non-rechargeable* device procedure costs may not be covered in APC 0222

[1] IMS HEALTH, Hospital Supply Index of non-federal, short-term acute care hospital purchases for Jan 1, 2006 - Dec 31, 2006, median average sales price

Criteria for Evaluating Changes to APCs

- In addition to 2 times rule, factors taken into consideration in APC classification:[1]
  - Resource homogeneity
  - Clinical homogeneity
  - Provider concentration
  - Frequency of service
  - Minimal opportunities for upcoding and code fragmentation

[1]OPPS Final Rule, Federal Register, April 7, 2000, pp.18457-58

Resource Homogeneity Suggests Separate Classification of Rechargeables

"The amount and type of facility resources ... that are used to furnish or perform the individual procedures or services within each APC should be homogeneous...

"If the procedures within an APC require widely varying resources, it would be difficult to develop equitable payment rates....

"Aggregated payments to a facility that performed a disproportionate share of either the expensive or the inexpensive procedures within an APC would be distorted...

"Further, the facility might be encouraged to furnish only the less costly procedures within the APC, resulting in a potential access problem for the more costly services...[1]

- Claims data show clear, substantial variation in facility resources for rechargeable and non-rechargeable device procedures
- One combined APC leads to inequitable payment for both technologies
- May encourage facilities not to furnish clinically appropriate devices, resulting in potential access problem for Medicare beneficiaries

[1]OPPS Final Rule, Federal Register, April 7, 2000, p.18457 [emphasis added]

Provider Concentration

"If a particular service is offered only in a limited number of hospitals, then the impact of payment for the service is concentrated in a subset of hospitals.

"Therefore, it is particularly important to have an accurate payment level for services with a high degree of provider concentration."[1]

- Only 27% of hospitals that implanted neurostimulators implanted rechargeable devices in 2006

TABLE 35.—APC 0222 CY 2006 DATA BASED ON CLAIMS REPORTING DIFFERENT NEUROSTIMULATOR DEVICES

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APC 0222B, including only claims with rechargeable neurostimulators	238	422	18,088.71

- Concentration of providers limits volume now available to affect recalibration of weights; may lead to inequitable payment for implanting centers

[1]OPPS Final Rule, Federal Register, April 7, 2000, p.18457

APC Reclassifications Where Factors Other Than 2-Times Rule Considered

- Keratoprosthesis: Created APC 0293 after transitional pass-through payment expired
  - Median cost for keratoprosthesis ($3,177) vs. lowest cost procedure ($1,931) not a 2-times violation ($1,246, 1.65)[1,2]
  - CMS concluded "persistent small contribution to the median cost" likely and APC reassignment merited "to pay more appropriately for procedure and related device."[1,2]
- Discectomy: Reassigned from APC 0220 to APC 0221[3]
  - Median cost for discectomy ($1,919) vs. lowest procedure ($1,013) in old APC not a 2-times violation ($906, 1.89)
  - "[We] find resource costs for CPT code 62287 may be more appropriate for APC 0221…Therefore, we have reassigned CPT code 62287 to APC 0221"[3]

[1] http://www.cms.hhs.gov/quarterlyproviderupdates/downloads/cms1506fc.pdf
[2] http://www.cms.hhs.gov/HospitalOutpatientPPS/Downloads/CMS1506FC_HCPCS_Code.zip
[3] Federal Register/Vol. 69, No. 219/November 15, 2004; Changes to the Hospital Outpatient Propsective Payment System and Calendar Year 2005 Payment Rates

Coding Available to Distinguish Rechargeable Technology

CMS: "In addition, to pay differentially would require us to establish one or more Level II HCPCS codes for reporting under the OPPS…"

"The creation of special Level II HCPCS codes for OPPS reporting is generally undesirable, unless absolutely essential, because it increases hospital administrative burden as the codes may not be accepted by other payers."[1]

- Paying separately for rechargeable technology will require unique identification of rechargeable devices
- Coding burden on hospitals can be minimized

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715

Coding Options

- Existing C Codes
  - Use existing C codes combined with existing CPT codes to assign APCs
- New G Codes
  - Create two new HCPCS II "G" codes to differentiate between insertion/replacement of rechargeable and non-rechargeable generators

APC Structure Under Proposed Coding Options

Existing C Codes and CPT Codes

APC	APC Description	CPT Code	C Code
0222	Implantation of neurological device, non-rechargeable	63685[1]	C1767
		64590[2]	C1767
New Rechargeable APC	Implantation of neurological device, rechargeable	63685[1]	C1820
		64590[2]	C1820

New G Codes

APC	APC Description	HCPCS II Code	HCPCS II Code Description
0222	Implantation of neurological device, non-rechargeable	GXXXX	Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, non-rechargeable
New Rechargeable APC	Implantation of neurological device, rechargeable	GYYYY	Insertion or replacement of spinal, peripheral, or gastric neurostimulator pulse generator or receiver, rechargeable

[1]CPT 63685 Insertion or replacement of spinal neurostimulator pulse generator or receiver, direct or inductive coupling

[2]CPT 64590 Insertion or replacement of peripheral neurostimulator pulse generator or receiver, direct or inductive coupling

Coding Rationale

- C Codes
  - C codes currently exist; would not require issuing new codes
  - Hospitals already use the neurostimulator C codes and will continue to be required to do so in the future, thus no change in coding whatsoever
  - Simplest to implement and administer

- G Codes
  - Currently used by CMS to differentiate between other device types, eg. defibrillators, stents, radiosurgery
  - Consistent with previous CMS actions to identify and pay separately for distinct Medicare services
  - Based on feedback from implanting centers, would not appear to create undue burden on hospitals

Distinct Treatment of Rechargeable Devices Is Not An Issue of Packaging

CMS: "Establishing separate coding and payment would reduce the size of the APC payment groups in a year where we are proposing to increase packaging under the OPPS through expanded payment groups."[1]

- The goal of increased packaging is to increase efficiency and allow hospitals maximum flexibility to manage their resources.[2]
- Packaging of ancillary services is a worthy goal to increase efficiency.
- Rechargeable and non-rechargeable stimulators represent alternative treatments depending on patient needs; neither is a subordinate, supportive or optional service to the other.
- Combining neurostimulator technologies would result in underpayment and could hinder access to rechargeable devices.
- Contrary to efficiency, beneficiaries not able to receive rechargeable technology may undergo increased replacement procedures and associated costs.

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715
[2]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42677

Product Mix Unlikely to Improve Future Rates for Rechargeable Devices

CMS: "To the extent that the rechargeable neurostimulator may become the dominant device implanted over time for neurostimulation, the median costs of APCs 0222 and 0039 would reflect the change in surgical practice in future years."[1]

- Rechargeable spinal cord neurostimulators are an important new class of technologies, accounting for approximately 15% of procedures in APC 0222 in 2006 (though usage expected to grow incrementally)
- Non-rechargeable spinal cord neurostimulators represent approximately 26% of procedures in APC 0222 in 2006
- Multiple other neurostimulation technologies assigned to APC 0222 represent the remaining 60% of procedures in APC 0222
  - Sacral nerve neurostimulators (non-rechargeable)
  - Gastric nerve neurostimulators (non-rechargeable)
  - Other peripheral nerve neurostimulators (non-rechargeable)
- Even as rechargeable SCS grows, share in APC 0222 would not be dominant
- Rechargeable devices likely to contribute inadequately to median cost in future years, especially if proposed payment limits patient access and utilization of the technology

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715

Creating Two APCs Would Improve Efficiency Over Long-Term

CMS: "...[W]ith the rechargeable neurostimulator coming off pass-through status for CY 2008, by following our standard practice we would be increasing the size of APC 0222 and APC 0039 bundles for CY 2008, thereby encouraging hospitals to use resources most efficiently."[1]

- Proposed packaging creates incentives to minimize procedure costs at expense of longer term efficiency.
- Under proposed APC structure, payment rates for rechargeable neurostimulators are substantially less than device and procedure costs.
- Proposed packaging may encourage hospitals to implant less costly but shorter-lived non-rechargeable devices in patients with complex pain patterns because of financial disincentives to use rechargeable neurostimulators.
- Future replacement of non-rechargeable devices in such patients will lead to higher long-term costs.
- Creating two APCs will encourage long-term efficiency by reducing future replacement procedures.

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42715

Other OPPS Scenarios Not Similar to Rechargeable Neurostimulators

CMS: "…[W]e request that commenters address how this specific device implantation situation differs from many other scenarios under the OPPS, where relatively general HCPCS codes describe procedures that may utilize a variety of devices with different costs, and payment for those devices is packaged into the payment for the associated procedures."[1]

- We are unaware of other APCs where magnitude of cost difference among packaged services is as substantial as proposed for neurostimulators.
- $6,500 discrepancy in costs likely to affect hospital acquisition and patient access for rechargeable technology
  - …Particularly when underlying payment appears inadequate even for non-rechargeable therapy
- Unlike many other services, implantation of rechargeable neurostimulators increases long-term efficiency by reducing future replacement procedures.

[1]OPPS Proposed Rule, Federal Register, Aug 2, 2007, p. 42716

Many Reasons to Split APCs for Rechargeable Technology

Cost Differential and 2-Times Rule	Significant cost differential ($6,500, 56%) Resource homogeneity Provider concentration/equitable payment Comparable precedents	✔
Coding	No additional coding burden on hospitals	✔
Increased Packaging	Combining neurostimulator technologies would result in underpayment & could hinder access to rechargeable devices	✔
Product Mix	Rechargeable devices not likely to contribute to median cost in future years, especially if proposed payment limits patient access and utilization of the technology	✔
Efficient Use of Resources	Creating two APCs will encourage long-term efficiency by reducing future replacement procedures	✔
Comparable Treatment Across APCs	Other OPPS scenarios are not similar to rechargeable neurostimulator scenario	✔

Recommendations

- Distinct APCs based on rechargeability
  - Create new APC for implantation of rechargeable pulse generators for SCS and PNS
  - Retain APC 0222 for implantation of non-rechargeable pulse generators or receivers

- Adopt separate coding structure for rechargeable neurostimulators
  - C codes or G codes (as described above)

Expected Outcome

- The proposed recommendations will ensure that the costs of rechargeable devices are recognized sufficiently to ensure rather than limit or reverse beneficiary access in the OPPS.
- Patients would receive the advantages of rechargeability, rather than face additional surgeries.
- CMS would experience the savings that the technology is producing
- Consistent with CMS goal to "improve efficiency and enhance value."
- Ensuring adequate payment in OPPS will prevent magnification of issue in the ASC.

Discussion

Back-Up Slides

Rechargeable Neurostimulator Costs "Not Insignificant"

- The estimated average reasonable cost of devices in the category exceeds 25 percent of the applicable APC payment amount for the service associated with the category of devices

Data Source	Total Rechargeable Neurostimulator Cost[1]	Proposed CY 2008 APC 0222 Payment	% Exceeded of APC Payment
IMS HEALTH	$17,980	$12,314	46%
CMS CY 2006 Claims	$15,066	$12,314	22%

- The estimated average reasonable cost of the devices in the category exceeds the cost of the device-related portion of the APC payment amount for the service associated with the category of devices by at least 25 percent.

Data Source	Total Rechargeable Neurostimulator Cost[1]	Device Related Portion of APC 0222	% Exceeded of Device Related Portion
IMS HEALTH	$17,980	$10,256	75%
CMS CY 2006 Claims	$15,066	$10,256	47%

- The difference between the estimated average reasonable cost of the devices in the category and the portion of the APC payment amount determined to be associated with the device in the associated APC exceeds 10 percent of the total APC payment.

Data Source	Median Average Cost of Devices [1]	Device Related Portion of APC 0222	Difference	Proposed CY 2008 APC 0222 Payment	% of APC Payment
IMS HEALTH	$17,980	$10,256	$7,724	$12,314	63%
CMS CY 2006 Claims	$15,066	$10,256	$4,810	$12,314	39%

[1] IMS HEALTH, Hospital Supply Index of non-federal, short-term acute care hospital purchases for Jan 1, 2006 - Dec 31, 2006, median average sales price

Advanced Power Source & Functionality

Rechargeable System Attributes

- Rechargeable, fully implantable
- Increased number of electrodes
- Increased programming capabilities
- Physician prescribed, patient selectable electrode configurations
- Advanced diagnostics and data storage

More Responsive Therapy for Patients with Complex Pain

- Ability to increase parameters to meet the needs of the high energy demands of complex pain
- Flexibility of programs to meet the demands of complex pain patterns
- Increased compliance with treatment regimen

Substantial Clinical Improvement

- CMS determined that rechargeable technology met the substantial clinical improvement criteria under IPPS and OPPS
  - *"By avoiding the need for battery replacement surgery, we believe these data demonstrate that this device is a substantial clinical improvement for a large proportion of the patients who receive implantable neurostimulators."* [1]
  - *"Because of the elimination of the need for serial battery replacement surgeries, and in light of the information provided by the manufacturer and comments further clarifying the distinctions and improvement of the Restore® technology when compared to other devices, we believe that the device is a substantial clinical improvement over prior technologies."*[1]
  - *Commenters reported "rechargeable neurostimulators have allowed a significant advance to the field of neuromodulation for treatment of chronic intractable pain."*[2]

[1]Federal Register Vol 70, No. 155/Friday, August 12, 2005, Medicare Program; Changes to the Hospital Inpatient Prospective Payment Systems and Fiscal Year 2006 Rates; Final Rule.

[2]2006 Final OPPS Rule, p. 426

Both Rechargeable and Non-Rechargeable Devices Will Continue to Be Used, Based on Patient Need

Pain Classification	Unilateral	Bilateral	Complex
Associated Indications	Single limb pain CRPS	FBS CRPS-2 Radiculopathies Arachnoiditis Peripheral neuropathy	CRPS-1 FBS Radiculopathies Arachnoiditis
Characteristics	Monoradicular stable	Stable bifocal	Multifocal, progressive, complex symptoms, more dermatomes involved, pain pattern changes with postural changes, mixed origin
Systems to Consider	Single Channel Device	Dual Channel Device	Rechargeable Device

Attachment 2: Analysis of Charge Decompression for Devices in the CY 2008 OPPS Proposed Rule

MEMORANDUM

To: Jeff Farkas, Christine Jackson, Medtronic
From: Christopher Hogan, Direct Research, LLC
Subject: Updating the analysis of charge decompression for devices, with application to OPPS rates.
Date: 9/13/2007

EXECUTIVE SUMMARY

This memo presents results from an updated analysis of charge decompression for devices. This analysis only address charge compression for devices, and it directly addresses the objections CMS raised in the OPPS 2008 proposed rule.

Methods largely follow those used in the Research Triangle Institute (RTI) report on charge compression. tarting from the most recent available cost reports for PPS hospitals (typically FY 2005), the analysis re-estimates the regression analyzing hospital average cost-to-charge ratios (CCRs) for supplies as a function of their mix of supplies charges (implantable devices versus other). The results give a statistical estimate of the average difference in CCR between implantable devices and routine supplies.

The analysis then applies this adjustment to OPPS proposed rule 2008 claims data. It "de-compresses" device costs, re-estimates median costs for single-procedure claims, and shows what median costs would be with properly "decompressed" device costs.

The main results are the following:

- First, the results of this updated analysis match prior work. In terms of the difference in CCRs between implantable devices and routine supplies, the estimate are:
  - 18 percentage points (Direct Research, June 2006, mostly 2003/4 cost reports).
  - 18 percentage points (RTI, January 2007, using mostly 2004/5 cost reports).
  - 19 percentage points (this research, using mostly 2005 cost reports).

- Second, it makes little difference whether the device share of supplies costs is calculated using all charges or inpatient-only charges. The regression coefficient is about 1 percentage point higher when all charges are used, probably reflecting the better match between cost reports (all costs and charges) and claims in that case. This lack of change is clearly due to the high correlation ($R = 0.98$) between device share of charges calculated using all charges or calculated using inpatient-only charges.

- Third, it makes no difference whether the regression is weighted by all charges, outpatient charges, or inpatient charges. The resulting regression coefficients are essentially identical. In effect, on average, large hospitals are large whether measured by inpatient, outpatient, or total volume.

- Fourth, the steps CMS takes currently to address this issue in the OPPS have essentially no impact. CMS will use the CCR for prosthetic when available, but only 19 PPS hospitals had a cost report line for prosthetics. Even there, CMS does not adjust the CCR for revenue center under which most orthopedic and many cardiac implantable devices are reported. All remaining hospitals use the all-supplies CCR or other default CCR for estimating the cost of implantable devices and apply the same CCR to all devices and supplies.

- Fifth, de-compressing the OPPS costs for devices would result in a maximum increase of 28 percent in APC rates (for ICD lead implant), to a maximum decrease of 11 percent (for Level III electrophysiological procedures). Procedures with expensive implantable devices would gain at the expense of procedures with significant supplies costs that are not for implantable devices.

In summary, there appear to be no significant obstacles to applying the RTI or similar charge compression fix to device costs used to calibrate OPPS rates.

- **The estimated fix is reasonably stable from year to year.** There are now three separate analyses all yielding roughly the same results for device costs.
- **The choice of total (inpatient plus outpatient) charges versus inpatient-only charges matters little.** The RTI results using inpatient-only charges generate a slightly conservative (too small) adjustment.
- **The current CMS approach does little to address the issue**. The use of the CCR for prosthetics, when available, for pacemaker implant charges affects just 19 hospitals and includes only a portion of implanted device charges in those hospitals.
- **The adjustment would result in significant changes to APC payment rates.**

BACKGROUND AND METHODS.

The June 6, 2006 report on charge compression from Direct Research offered a fix for charge compression for devices that was based solely on CMS data. A subsequent CMS-funded analysis by RTI both validated the Direct Research results for devices, and extended the analysis to consider other categories (drugs, radiology, and several others).

The most recent CMS IPPS and OPPS rules have raised the potential for using the RTI fix for charge compression, but have stopped short of implementing it. In particular, with regard to the fix *for implantable device costs only*, the CMS 2008 OPPS proposed rule raised the following objections:

- The cost reports combine all (inpatient and outpatient) costs and charges, so the analysis should calculate device share of supplies charges using all claims, not just inpatient claims (as RTI did).
- However, some aspects of the analysis should be weighted to reflect outpatient charges and expenditures, not inpatient. (Other than the choice of which services to study, it was not clear which parts of the analysis ought to reflect outpatient-weighted data.)
- The OPPS uses more detailed (non-standard) cost report lines than the IPPS, and thereby has partially addressed the issue. In particular, CMS uses a cost report line for prosthetics when that is available, for setting the CCR for intraocular lenses and pacemakers.
- Implementing this adjustment might result in large changes in payment rates, and possibly in re-assignment of HCPCS to APCs. That instability undesirable.

This analysis provides an updated estimate of the earlier Direct Research and RTI reports, aiming to address the CMS objections to the proposed fix for device charge compression. The methods are the following:

- Start from the March 2007 cost reports file. Extract the most recent cost report available (typically FY 2005).
- Summarize inpatient and outpatient charges by revenue center from CY 2005 LDS SAF 5 percent sample files. These are the stock CMS files that provide the best match, time-wise, to the set of most recent cost reports pulled above. The use of a sample of claims is reasonable because the data will only be used to calculate one number per hospital (device charges as percent of all device and supply charges).
- Using the claims, following the RTI approach, calculate charges for implantables (revenue centers 0275 and 0278) as a fraction of all supplies charges. Calculate that for inpatient, outpatient, and in total, by hospital. Calculate implantable charges as a fraction of total supplies charges. We do not include intraocular lenses in the calculation because the results are based on total hospital costs as reported on the cost report, and prior work demonstrated that intraocular lens costs account for a neglible fraction of hospital total supplies costs.
- Restrict to PPS hospitals.

- Using the cost reports, calculate all-ancillary CCRs excluding supplies from the cost reports, by totaling charges for all ancillaries (rolled-up cost report lines 37 to 68 excluding supplies line 55), costs for those lines, and dividing costs by charges.
- Trim the CCR for supplies (rolled-up line 55) using the MedPAC recommended method: exclude all CCRs below 0.01 and over 10.0, divide by hospital total CCR, then trim at plus or minus three standard deviations of the log of the CCR (i.e., the standard deviations around the geometric mean).
- Merge the claims summary and the cost report data, take hospitals with data from both sources, and run regressions of this form:
  - Supplies CCR = a + b*ancillary CCR + c*Implantable share of supplies charges
    - Ancillary CCR excludes supplies, and controls for overall hospital markup policy.
    - Coefficient on implantable share of charges shows the estimated average difference in CCR between implantable devices and other supplies.
- Use the 0.187 (the smallest coefficient estimated here) as the adjuster for device CCRs. This is 1 percentage point higher than the RTI estimate of 0.177.
- Create a budget-neutral adjustment in each hospital, as described in the June 6, 2006 Direct Research report. That is, take the hospital supplies CCR, split into device and non-device portions, set the device CCR .187 percentage points above the non-device supplies CCR, then calculate a standardization factor (to be subtracted from both device and non-device supplies CCRs) to force total supplies costs in each hospital to be the same before and after the adjustment. This standardization is based on all Medicare supplies charges.
- Reprocess the single-procedure claims with these new adjusted CCRs, recalculate median costs by HCPCS and APC.

RESULTS

Table 1 shows the basic regression results. This regression predicts each hospital's CCR for supplies based on the share of supplies that is for implantable devices. Rounded, the difference CCRs between implantables and all other supplies is either 0.20 (if all charges are used in the calculation) or 0.19 (if only inpatient charge are used to calculate the device share of supplies charges). In both cases, total supplies charges from the cost report were used to weight the regression. The results are not materially different from the RTI report, and the two regression estimates are not (statistically) significantly different from one another.

Table 1: Regression Results				
	Parameter	Standard		
Variable	Estimate	Error	t Value	Pr > |t|
Using implantable device charge share with inpatient and outpatient charges combined				
Intercept	0.045	0.01001	4.5	<.0001
ancillary_ccr	0.855	0.02829	30.24	<.0001
Implantable share using all charges	**0.202**	0.01518	13.28	<.0001
Memo: Adj R-squared	0.259			
Memo: Observations	3,025			
Using implantable device charge share from inpatient charges only				
Intercept	0.050	0.00993	5.06	<.0001
ancillary_ccr	0.854	0.02835	30.12	<.0001
Inplantable share using inpatient-only charges	**0.187**	0.01464	12.74	<.0001
Memo: Adj R-squared	0.256			
Memo: Observations	3,025			
Source: Analysis of CMS cost report, 2005 5% sample LDS SAF inpatient and outpatient claims.				

The upshot is that the more recent cost report data, combined with claims, gives virtually the same results as the earlier analyses. Moreover (not shown) the results were robust with respect to the weighting, as long as the weights are based on the cost report data. Weighting by inpatient supplies charges or estimated outpatient supplies charges resulted in virtually the same set of regression coefficients. However, as RTI found earlier, weighting by the claims-based charge totals yields modestly different estimates. In this case, if charges from claims had been used to weight the regressions, the estimated CCR differential would be about 2 percentage points higher than what is shown in Table 1.

Table 1 shows that it makes little difference whether inpatient-only charges or all charges to calculate the device share of total supplies cost. Table 2 shows why. The two measures are highly correlated. Hospitals with significant inpatient device implant volume tend to be hospitals with significant total device implant volume. The high correlation of these two measures means they could only result in very slightly different regression estimates. While the inpatient and outpatient data do differ substantially, the inpatient and hospital total data show essentially the same pattern of variation (correlation of 0.98). This means it should make little difference in the regression analysis whether the device share is calculated with inpatient or with combined inpatient and outpatient claims.

Table 2: Correlation of Three Measures of Devices as Fraction of Supplies Charges in each Hospital

	Using all charges	Using inpatient only	Using outpatient only
Using all charges, correlation	1	0.98061	0.6916
P-value	<.0001	<.0001	<.0001
Using inpatient only, correlation		1	0.57208
P-value		<.0001	<.0001
Using outpatient only, correlation			1
P-value			<.0001

Source: Analysis of 2005 5% sample LDS SAF inpatient and outpatient files.

Finally, the resulting adjustment would significantly affect the rates for some APCs, primarily those for which implantation of a high-cost device accounts for most of the APC total cost. Table 3 shows the ten APCs with largest increases and decreases in median cost, using this approach. APCs with largest gains are, as expected, procedures for which implantation of a high-cost device accounts for much of the cost of the procedure. The 10 with largest losses are a more mixed set, but all have significant supplies cost but no implantable device.

Table 3: OPPS Proposed Rule 2008 Analysis, Impact of Fixing Charge Compression for Implantable Devices						
Ten APCs with largest gains and losses.						
			Median Cost and Impact of Charge De-Compression, Calculated from Claims			
APC	**Description**	**Device-Dependent APC?**	**Single Claim Count Including Misc. Codes**	**Calculated Median (including device coding edits)**	**Median with Charge Decompression for implantable devices**	**Impact of de-compression for implantable devices**
0418	Insertion of Left Ventricular Pacing Elect.	1	185	$ 15,220	19,510	28%
0315	Level II Implantation of Neurostimulator	1	626	$ 16,578	20,173	22%
0227	Implantation of Drug Infusion Device	1	996	$ 11,168	13,587	22%
0434	Cardiac Defect Repair		249	$ 9,000	10,928	21%
0090	Insertion/Replacement of Pacemaker Pulse Generator	1	521	$ 6,288	7,602	21%
0225	Implantation of Neurostimulator Electrodes, Cranial Nerve	1	237	$ 14,015	16,925	21%
0108	Insertion/Replacement/Repair of Cardioverter-Defibrillator Leads	1	3,289	$ 25,104	29,931	19%
0039	Level I Implantation of Neurostimulator	1	1,030	$ 12,430	14,803	19%
0089	Insertion/Replacement of Permanent Pacemaker and Electrodes	1	1,965	$ 7,355	8,731	19%
0655	Insertion/Replacement/Conversion of a permanent dual chamber pacemaker	1	7,842	$ 8,953	10,626	19%
0052	Level IV Musculoskeletal Procedures Except Hand and Foot		5,507	$ 4,888	4,561	-7%
0388	Discography		571	$ 1,018	947	-7%
0429	Level V Cystourethroscopy and other Genitourinary Procedures		18,982	$ 2,865	2,664	-7%
0152	Level I Percutaneous Abdominal and Biliary Procedures		716	$ 1,778	1,652	-7%
0249	Level II Cataract Procedures without IOL Insert		1,525	$ 1,865	1,730	-7%
0132	Level III Laparoscopy		923	$ 4,405	4,086	-7%
0085	Level II Electrophysiologic Procedures	1	3,951	$ 3,047	2,783	-9%
0423	Level II Percutaneous Abdominal and Biliary Procedures		680	$ 2,713	2,455	-10%
0674	Prostate Cryoablation	1	1,995	$ 7,748	6,902	-11%
0086	Level III Electrophysiologic Procedures	1	382	$ 5,702	5,070	-11%
Note: Rates were not calculated for the new composite APCs. Medians differ substantially from published CMS data for APCs containing "Q" status radiology codes.						
Source: Analaysis of 2008 OPPS proposed rule claims data.						

Attachment 3: Impact of Charge Regression Adjustment on CY 2008 APCs

OPPS Proposed Rule 2008 Analysis, Impact of Fixing Charge Compression for Implantable Devices
Note: Not all APCs appear in this file. See cautions at end.

			Median Cost and Impact of Charge De-Compression, Calculated from Claims					Memo: CMS Published Data on Single-Procedure Claims						
APC	Description	Device-Dependent APC?	Single Claim Count Including Misc. Codes		Calculated Median (including device coding edits)	Median with Charge Decompression for implantable devices	Impact of de-compression for implantable devices	Count of all claims (Total for entire file)	Count of Single Claims	Count of Singles After Device Edits		Median Cost (Before Device edits or blend with prior year rate)	Adjusted Median Cost (with device edits and blend if applicable)	Payment Rate for APC (Medians File)
0418	Insertion of Left Ventricular Pacing I	1	185	$	15,220	19,510	28%	4,436	225	185	$	12,216	15,760.17	15,957.54
0315	Level II Implantation of Neurostimul	1	626	$	16,578	20,173	22%	807	655	648	$	16,431	16,532.22	16,739.26
0227	Implantation of Drug Infusion Devic	1	996	$	11,168	13,587	22%	3,350	1,027	1,001	$	11,161	11,242.60	11,383.39
0434	Cardiac Defect Repair		249	$	9,000	10,928	21%	496	251		$	8,930		9,041.86
0090	Insertion/Replacement of Pacemak	1	521	$	6,288	7,602	21%	7,426	540	524	$	6,249	6,279.63	6,358.27
0225	Implantation of Neurostimulator Ele	1	237	$	14,015	16,925	21%	1,544	244	239	$	14,098	13,928.36	14,102.78
0108	Insertion/Replacement/Repair of Ca	1	3,289	$	25,104	29,931	19%	8,732	3,399	3,267	$	24,837	25,352.27	25,669.76
0039	Level I Implantation of Neurostimula	1	1,030	$	12,430	14,803	19%	2,893	1,119	1,035	$	12,657	12,421.82	12,577.38
0089	Insertion/Replacement of Permaner	1	1,965	$	7,355	8,731	19%	3,722	2,062	570	$	7,354	7,710.05	7,806.61
0655	Insertion/Replacement/Conversion	1	7,842	$	8,953	10,626	19%	12,769	8,291	1,896	$	8,916	9,075.74	9,189.40
0654	Insertion/Replacement of a permani	1	1,727	$	6,642	7,878	19%	29,645	1,810	1,735	$	6,635	6,724.90	6,809.12
0107	Insertion of Cardioverter-Defibrillato	1	447	$	21,976	26,044	19%	9,772	513	448	$	20,262	22,213.36	22,491.54
0222	Implantation of Neurological Device	1	2,794	$	12,253	14,380	17%	7,957	2,881	2,830	$	12,077	12,161.64	12,313.94
0386	Level II Prosthetic Urological Proce	1	3,326	$	9,038	10,486	16%	4,990	3,451	3,346	$	8,980	9,045.78	9,159.06
0680	Insertion of Patient Activated Event	1	1,461	$	4,507	5,227	16%	2,234	1,479	1,465	$	4,497	4,506.93	4,563.37
0259	Level VI ENT Procedures	1	782	$	25,154	28,754	14%	1,311	801	783	$	25,336	25,434.97	25,753.49
0040	Percutaneous Implantation of Neurc	1	4,503	$	3,967	4,430	12%	12,769	4,806		$	3,968	4,010.44	4,060.66
0061	Laminectomy or Incision for Implant	1	1,251	$	5,088	5,672	11%	2,938	1,297	1,268	$	5,113	5,115.78	5,179.85
0425	Level II Arthroplasty with Prosthesis	1	487	$	7,181	7,977	11%	1,104	493	489	$	7,146	7,150.52	7,240.07
0385	Level I Prosthetic Urological Proced	1	575	$	5,343	5,835	9%	881	604	581	$	5,333	5,368.16	5,435.38
0048	Level I Arthroplasty with Prosthesis		645	$	3,187	3,424	7%	2,864	648		$	3,211		3,251.09
0656	Transcatheter Placement of Intracoi	1	3,106	$	7,479	8,010	7%	24,346	3,251	3,148	$	7,409	7,478.29	7,571.94
0202	Level VII Female Reproductive Proc	1	10,019	$	2,694	2,869	6%	17,800	10,271	10,043	$	2,713	2,719.11	2,753.16
0064	Level III Treatment Fracture/Dislocation		7,813	$	3,771	3,970	5%	12,742	7,871		$	3,778		3,825.37
0168	Level II Urethral Procedures		6,939	$	1,887	1,983	5%	9,125	7,120		$	1,900		1,923.49
0106	Insertion/Replacement of Pacemak	1	367	$	4,651	4,888	5%	3,489	392	367	$	4,422	4,718.32	4,777.41
0104	Transcatheter Placement of Intracoi	1	554	$	5,582	5,827	4%	4,638	584		$	5,551	5,599.90	5,670.03
0673	Level IV Anterior Segment Eye Procedures		2,110	$	2,565	2,666	4%	4,966	2,128		$	2,570		2,601.74
0625	Level IV Vascular Access Procedur	1	293	$	2,059	2,135	4%	479	294	8	$	2,059	5,492.89	5,561.67
0229	Transcatherter Placement of Intrave	1	6,640	$	5,641	5,798	3%	53,470	7,356	7,225	$	5,634	5,642.77	5,713.43
0623	Level III Vascular Access Procedure	1	49,715	$	1,836	1,871	2%	66,747	50,740	49,861	$	1,839	1,844.44	1,867.54
0091	Level II Vascular Ligation		4,263	$	2,687	2,736	2%	9,054	4,493		$	2,747		2,780.89
0242	Level V Repair and Plastic Eye Procedures		832	$	2,368	2,406	2%	1,603	843		$	2,350		2,378.96
0648	Level IV Breast Surgery	1	744	$	3,219	3,255	1%	2,895	808	382	$	3,417	3,330.44	3,372.15
0056	Level II Foot Musculoskeletal Procedures		1,409	$	2,779	2,803	1%	5,499	1,421		$	2,797		2,832.49
0031	Smoking Cessation Services		2,507	$	10	10	1%	3,402	2,512		$	10		10.57
0381	Single Allergy Tests		859	$	64	64	1%	4,539	863		$	66	18.96	19.20
0079	Ventilation Initiation and Management		4,336	$	163	164	1%	27,647	4,323		$	168		170.35
0148	Level I Anal/Rectal Procedures		2,796	$	268	269	0%	7,457	2,715		$	284		287.82
0651	Complex Interstitial Radiation Source Applica		336	$	943	944	0%	11,850	337		$	970		981.88
0063	Level II Treatment Fracture/Dislocation		6,155	$	2,516	2,519	0%	12,437	6,192		$	2,538		2,569.80
0235	Level I Posterior Segment Eye Procedures		3,574	$	253	253	0%	4,316	3,599		$	252		255.41
0408	Level III Tumor/Infection Imaging		1,269	$	1,025	1,026	0%	2,318	1,268		$	1,010		1,022.88
0312	Radioelement Applications		415	$	541	541	0%	1,102	414		$	528		534.48

			Median Cost and Impact of Charge De-Compression, Calculated from Claims				Memo: CMS Published Data on Single-Procedure Claims					
APC	Description	Device-Dependent APC?	Single Claim Count Including Misc. Codes	Calculated Median (including device coding edits)	Median with Decompression for implantable devices	Impact of de-compression for implantable devices	Count of all claims (Total for entire file)	Count of Single Claims	Count of Singles After Device Edits	Median Cost (Before Device edits or blend with prior year rate)	Adjusted Median Cost (with device edits and blend if applicable)	Payment Rate for APC (Medians File)
0313	Brachytherapy		10,674	$ 730	731	0%	22,018	10,644		$ 730		739.46
0335	Magnetic Resonance Imaging, Miscellaneous		2,171	$ 312	312	0%	2,473	2,166		$ 315		318.89
0154	Hernia/Hydrocele Procedures		67,937	$ 1,923	1,923	0%	139,419	69,848		$ 1,961		1,985.45
0432	Health and Behavior Services		14,554	$ 41	41	0%	14,852	14,557		$ 19		19.24
0663	Level I Electronic Analysis of Neurostimulator		5,570	$ 104	104	0%	5,980	5,570		$ 105		106.18
0350	Administration of flu and PPV vaccine		299,775	$ 16	16	0%						
0389	Level I Non-imaging Nuclear Medicine		4,413	$ 105	105	0%	20,964	3,942		$ 99		100.67
0382	Level II Neuropsychological Testing		19,764	$ 165	165	0%	20,053	19,769		$ 168		170.46
0191	Level I Female Reproductive Proc		25,953	$ 9	9	0%	27,822	25,969		$ 9		9.01
0437	Level II Drug Administration		2,397,029	$ 27	27	0%	4,914,716	2,695,733		$ 25		25.71
0370	Allergy Tests		265	$ 99	99	0%	580	453		$ 69		70.22
0606	Level 3 Hospital Clinic Visits		2,785,129	$ 86	86	0%	2,857,851	2,788,214		$ 86		87.04
0066	Level II Stereotactic Radiosurgery, MRgFUS,		5,209	$ 2,995	2,995	0%	5,310	5,209		$ 2,980		3,017.56
0363	Level I Otorhinolaryngologic Function Tests		23,157	$ 54	54	0%	40,881	23,153		$ 54		54.41
0607	Level 4 Hospital Clinic Visits		696,083	$ 107	107	0%	785,893	695,000		$ 108		109.43
0288	Bone Density:Axial Skeleton		766,979	$ 75	75	0%	769,758	766,788		$ 75		75.92
0310	Level III Therapeutic Radiation Treatment Pr		93,543	$ 889	889	0%	106,414	93,426		$ 886		896.78
0365	Level II Audiometry		74,607	$ 79	79	0%	74,946	74,600		$ 81		81.59
0694	Mohs Surgery		24,599	$ 240	240	0%	44,724	21,117		$ 250		252.94
0406	Level I Tumor/Infection Imaging		8,552	$ 284	284	0%	10,675	8,559		$ 283		286.54
0345	Level I Transfusion Laboratory Procedures		862,812	$ 14	14	0%	973,471	863,073		$ 14		14.08
0409	Red Blood Cell Tests		1,927,687	$ 8	8	0%	1,951,272	1,927,253		$ 8		7.94
0665	Bone Density:AppendicularSkeleton		22,677	$ 33	33	0%	22,681	22,678		$ 33		33.28
0342	Level I Pathology		4,451	$ 12	12	0%	5,105	4,452		$ 6		5.91
0324	Family Psychotherapy		10,628	$ 143	143	0%	11,729	10,666		$ 140		141.61
0033	Partial Hospitalization		8,068	$ 46	46	0%	1,335,100				177.65	179.88
0442	Dosimetric Drug Administration		91	$ 1,907	1,907	0%	339	89		$ 1,901		1,925.11
0661	Level V Pathology		4,686	$ 178	178	0%	4,776	4,681		$ 178		180.48
0660	Level II Otorhinolaryngologic Function Tests		10,406	$ 98	98	0%	18,951	10,406		$ 91		91.77
0067	Level III Stereotactic Radiosurgery, MRgFUS		1,985	$ 3,890	3,890	0%	3,837	1,979		$ 3,870		3,918.43
0373	Level I Neuropsychological Testing		672	$ 116	116	0%	939	674		$ 114		115.81
0664	Level I Proton Beam Radiation Therapy		11,721	$ 801	801	0%	13,263	11,721		$ 835		845.50
0065	Level I Stereotactic Radiosurgery, MRgFUS,		1,962	$ 1,076	1,076	0%	2,416	1,963		$ 1,082		1,095.47
0392	Level II Non-imaging Nuclear Medicine		124	$ 201	201	0%	160	124		$ 206		208.98
1508	New Technology - Level VIII ($600 - $700)		42	$ 669	669	0%	68	42		$ 652		650.00
0667	Level II Proton Beam Radiation Therapy		2,165	$ 906	906	0%	2,212	2,163		$ 999		1,011.71
0060	Manipulation Therapy		8,939	$ 31	31	0%	9,015	8,959		$ 31		31.06
0683	Level II Photochemotherapy		1,009	$ 191	191	0%	1,032	1,009		$ 184		186.57
0417	Computerized Reconstruction		1,524	$ 150	150	0%	7,853	1,220		$ 147		149.05
0364	Level I Audiometry		90,356	$ 28	28	0%	93,369	90,463		$ 28		28.33
0343	Level III Pathology		3,782,145	$ 33	33	0%	3,850,976	3,783,255		$ 34		34.22
0301	Level II Radiation Therapy		2,416,331	$ 148	148	0%	2,437,382	2,416,771		$ 144		146.07
0215	Level I Nerve and Muscle Tests		91,338	$ 37	37	0%	237,494	91,797		$ 36		36.60
0368	Level II Pulmonary Tests		721,446	$ 60	60	0%	1,199,787	710,626		$ 60		60.77
0095	Cardiac Rehabilitation		2,184,501	$ 36	36	0%	2,226,453	2,190,965		$ 37		37.38
0332	Computed Tomography without Contrast		3,527,158	$ 197	197	0%	3,542,355	3,527,782		$ 198		200.55
0433	Level II Pathology		1,075,138	$ 16	16	0%	1,130,403	1,075,235		$ 16		15.81

			Median Cost and Impact of Charge De-Compression, Calculated from Claims				Memo: CMS Published Data on Single-Procedure Claims					
APC	Description	Device-Dependent APC?	Single Claim Count Including Misc. Codes	Calculated Median (including device coding edits)	Median with Charge Decompression for implantable devices	Impact of de-compression for implantable devices	Count of all claims (Total for entire file)	Count of Single Claims	Count of Singles After Device Edits	Median Cost (Before Device edits or blend with prior year rate)	Adjusted Median Cost (with device edits and blend if applicable)	Payment Rate for APC (Medians File)
0304	Level I Therapeutic Radiation Treatment Prep		1,149,407	$ 110	110	0%	1,175,826	1,148,920		$ 103		104.51
0303	Treatment Device Construction		99,058	$ 190	190	0%	317,690	99,033		$ 193		195.26
0325	Group Psychotherapy		1,109,188	$ 69	69	0%	1,427,376	1,109,069		$ 64		64.45
0690	Electronic Analysis of Pacemakers and other		468,637	$ 23	23	0%	470,717	468,503		$ 23		22.87
0322	Brief Individual Psychotherapy		209,454	$ 80	80	0%	231,368	209,481		$ 78		79.32
0299	Hyperthermia and Radiation Treatment Proce		61,988	$ 384	384	0%	62,920	61,991		$ 379		383.91
0300	Level I Radiation Therapy		124,702	$ 97	97	0%	126,366	124,605		$ 94		95.54
0261	Level II Plain Film Except Teeth Including Bo		1,171,459	$ 75	75	0%	1,177,927	1,171,569		$ 76		76.58
0096	Non-Invasive Vascular Studies		337,033	$ 95	95	0%	340,332	337,056		$ 96		97.16
0307	Myocardial Positron Emission Tomography (I		902	$ 2,495	2,495	0%	2,796	902		$ 2,678		2,711.25
0232	Level I Anterior Segment Eye Procedures		3,086	$ 322	322	0%	7,834	3,117		$ 322		325.76
0250	Nasal Cauterization/Packing		22,662	$ 73	73	0%	66,047	20,421		$ 74		74.57
0001	Level I Photochemotherapy		39,376	$ 33	33	0%	39,856	39,392		$ 33		33.15
0260	Level I Plain Film Except Teeth		13,881,599	$ 45	45	0%	14,089,972	13,900,181		$ 46		46.23
0230	Level I Eye Tests & Treatments		241,572	$ 47	47	0%	245,968	241,897		$ 46		47.00
0265	Level I Diagnostic and Screening Ultrasound		398,992	$ 62	62	0%	407,245	399,112		$ 62		63.22
0266	Level II Diagnostic and Screening Ultrasound		2,183,953	$ 98	98	0%	2,219,156	2,184,457		$ 98		99.72
0323	Extended Individual Psychotherapy		401,287	$ 107	107	0%	421,532	401,891		$ 105		106.49
0341	Skin Tests		21,934	$ 6	6	0%	26,027	21,908		$ 6		5.60
0305	Level II Therapeutic Radiation Treatment Pre		198,412	$ 259	259	0%	266,506	198,491		$ 263		266.08
0097	Prolonged Physiologic and Ambulatory Monit		382,026	$ 66	66	0%	446,368	368,742		$ 65		66.22
0395	GI Tract Imaging		31,749	$ 240	240	0%	34,633	31,698		$ 242		245.51
0267	Level III Diagnostic and Screening Ultrasoun		1,094,391	$ 155	155	0%	1,107,085	1,094,697		$ 156		158.33
0436	Level I Drug Administration		20,012	$ 14	14	0%	37,684	20,047		$ 14		14.02
0347	Level III Transfusion Laboratory Procedures		12,552	$ 53	53	0%	13,038	12,552		$ 51		52.01
0156	Level III Urinary and Anal Procedures		9,005	$ 190	190	0%	25,724	8,555		$ 193		194.91
0692	Level II Electronic Analysis of Neurostimulato		3,696	$ 128	128	0%	4,640	3,695		$ 121		122.33
0336	Magnetic Resonance Imaging and Magnetic		1,121,430	$ 357	357	0%	1,146,602	1,121,676		$ 359		363.69
0689	Electronic Analysis of Cardioverter-defibrillato		84,501	$ 37	37	0%	85,965	84,537		$ 37		37.81
0126	Level I Urinary and Anal Procedures		30,742	$ 68	68	0%	61,203	30,108		$ 68		69.11
0430	Drug Preadministration-Related Services		48,419	$ 38	38	0%	49,615	48,420		$ 39		39.00
0344	Level IV Pathology		186,445	$ 54	54	0%	218,626	186,488		$ 54		54.69
0071	Level I Endoscopy Upper Airway		5,352	$ 50	50	0%	6,124	5,332		$ 52		52.58
0216	Level III Nerve and Muscle Tests		10,233	$ 171	171	0%	11,134	10,243		$ 174		176.30
0073	Level III Endoscopy Upper Airway		7,127	$ 269	269	0%	7,253	7,118		$ 265		267.89
0396	Bone Imaging		360,900	$ 246	246	0%	467,788	361,805		$ 249		252.01
0400	Hematopoietic Imaging		4,263	$ 263	263	0%	21,453	4,215		$ 264		266.98
0605	Level 2 Hospital Clinic Visits		7,160,729	$ 64	63	0%	7,302,531	7,175,907		$ 63		63.79
0213	Level I Extended EEG and Sleep Studies		116,463	$ 148	148	0%	118,051	116,474		$ 148		149.53
0099	Electrocardiograms		6,000,430	$ 25	25	0%	6,321,027	6,012,393		$ 25		24.92
0192	Level IV Female Reproductive Proc		1,599	$ 452	452	0%	3,310	1,600		$ 469		474.49
0012	Level I Debridement & Destruction		77,833	$ 19	19	0%	80,673	77,734		$ 17		17.08
0337	Magnetic Resonance Imaging and Magnetic		646,549	$ 541	541	0%	836,053	647,801		$ 545		552.15
0377	Level II Cardiac Imaging		51,544	$ 754	754	0%	566,252	51,583		$ 756		765.25
0239	Level II Repair and Plastic Eye Procedures		1,827	$ 430	430	0%	4,701	1,792		$ 447		452.85
0276	Level I Digestive Radiology		441,048	$ 90	90	0%	456,724	441,193		$ 91		91.64
0438	Level III Drug Administration		531,537	$ 52	52	0%	3,115,296	527,734		$ 52		52.93

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0262	Plain Film of Teeth		1,256	$ 36	36	0%	1,815	1,241		$ 36		36.55
0404	Renal and Genitourinary Studies		27,855	$ 317	317	0%	31,041	28,074		$ 320		324.42
0133	Level I Skin Repair		50,509	$ 83	83	0%	327,922	48,664		$ 84		84.97
0013	Level II Debridement & Destruction		309,017	$ 50	50	0%	361,321	298,509		$ 51		51.25
0698	Level II Eye Tests & Treatments		15,292	$ 72	72	0%	19,022	15,061		$ 73		73.73
0333	Computed Tomography without Contrast follc		350,814	$ 332	332	0%	850,575	350,674		$ 336		339.96
0346	Level II Transfusion Laboratory Procedures		156,257	$ 22	22	0%	615,099	160,400		$ 22		22.06
0369	Level III Pulmonary Tests		10,853	$ 175	175	0%	16,282	10,832		$ 175		177.54
0100	Cardiac Stress Tests		110,222	$ 177	177	0%	733,112	109,892		$ 180		182.36
0659	Hyperbaric Oxygen		3,791	$ 250	250	0%	259,131	3,783		$ 254	98.63	99.86
0209	Level II Extended EEG and Sleep Studies		276,692	$ 721	721	0%	283,345	277,114		$ 727		736.59
0393	Red Cell/Plasma Studies		962	$ 340	339	0%	1,230	961		$ 348		351.97
0277	Level II Digestive Radiology		68,488	$ 143	143	0%	73,678	68,473		$ 144		145.70
0678	External Counterpulsation		29,661	$ 110	110	0%	29,751	29,662		$ 107		108.79
0094	Level I Resuscitation and Cardioversion		10,209	$ 159	159	0%	76,177	10,117		$ 161		162.72
0043	Closed Treatment Fracture Finger/Toe/Trunk		15,913	$ 113	113	0%	64,401	15,227		$ 118		119.37
0308	Non-Myocardial Positron Emission Tomograp		150,397	$ 1,082	1,082	0%	176,175	150,437		$ 1,094		1,107.22
0662	CT Angiography		133,842	$ 334	333	0%	330,708	120,698		$ 332		336.41
0391	Level II Endocrine Imaging		39,159	$ 227	227	0%	42,645	39,160		$ 230		232.73
0412	IMRT Treatment Delivery		819,584	$ 385	384	0%	824,089	820,600		$ 360		364.80
0390	Level I Endocrine Imaging		24,621	$ 180	180	0%	28,017	24,625		$ 178		180.07
0407	Level I Radionuclide Therapy		9,488	$ 217	216	0%	14,416	9,493		$ 217		220.14
0283	Level I Computed Tomography with Contrast		958,115	$ 284	283	0%	3,054,544	956,650		$ 286		289.71
0218	Level II Nerve and Muscle Tests		68,296	$ 74	74	0%	85,449	68,525		$ 75		75.55
0269	Level II Echocardiogram Except Transesopha		592,800	$ 414	414	0%	805,577	593,920		$ 415		419.79
0078	Level II Pulmonary Treatment		10,196	$ 86	86	0%	24,116	10,088		$ 86		86.85
0366	Level III Audiometry		4,991	$ 113	113	0%	5,063	4,991		$ 117		118.76
0414	Level II Tumor/Infection Imaging		14,678	$ 473	472	0%	25,129	14,682		$ 472		477.60
0231	Level III Eye Tests & Treatments		36,738	$ 142	142	0%	57,345	38,766		$ 145		147.24
0002	Level I Fine Needle Biopsy/Aspiration		11,492	$ 77	77	0%	22,588	11,433		$ 75		75.89
0170	Dialysis		25,410	$ 428	427	0%	47,524	25,271		$ 427		432.57
0398	Level I Cardiac Imaging		40,186	$ 341	340	0%	82,718	40,207		$ 342		346.52
0367	Level I Pulmonary Test		120,404	$ 37	37	0%	252,669	118,359		$ 37		37.93
0697	Level I Echocardiogram Except Transesopha		49,498	$ 302	302	0%	135,741	49,228		$ 302		306.18
0077	Level I Pulmonary Treatment		503,309	$ 24	24	0%	1,497,154	494,274		$ 25		24.87
0340	Minor Ancillary Procedures		184,756	$ 40	40	0%	433,404	182,026		$ 40		40.87
0272	Fluoroscopy		36,361	$ 89	89	0%	210,105	30,098		$ 83		84.52
0282	Miscellaneous Computed Axial Tomography		28,339	$ 105	105	0%	42,960	28,207		$ 105		106.80
0439	Level IV Drug Administration		20,558	$ 107	107	0%	134,285	20,485		$ 108		109.25
0604	Level 1 Hospital Clinic Visits		3,498,360	$ 53	52	0%	3,841,957	3,500,093		$ 53		53.38
0278	Diagnostic Urography		79,234	$ 169	168	0%	162,905	69,170		$ 164		166.33
0609	Level 1 Emergency Visits		512,233	$ 52	51	0%	637,302	512,349		$ 52		52.68
0394	Hepatobiliary Imaging		70,751	$ 282	281	0%	78,973	70,777		$ 285		288.51
0402	Level II Nervous System Imaging		3,789	$ 552	551	0%	7,075	3,782		$ 556		563.14
0613	Level 2 Emergency Visits		1,416,525	$ 85	85	0%	2,010,617	1,415,912		$ 87		87.83
0608	Level 5 Hospital Clinic Visits		70,895	$ 139	138	0%	82,213	70,688		$ 139		140.62
0140	Esophageal Dilation without Endoscopy		2,990	$ 343	342	0%	33,085	2,768		$ 383		387.68

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0204	Level I Nerve Injections		163,324	$ 142	141	0%	264,912	167,497		$ 146		148.11
0403	Level I Nervous System Imaging		723	$ 207	206	0%	1,007	721		$ 210		212.26
0112	Apheresis and Stem Cell Procedures		5,755	$ 2,103	2,096	0%	7,315	5,754		$ 2,011		2,035.93
0378	Level II Pulmonary Imaging		19,725	$ 321	320	0%	39,924	19,751		$ 325		328.76
0383	Cardiac Computed Tomographic Imaging		9,004	$ 311	310	0%	12,191	9,000		$ 314		317.75
0072	Level II Endoscopy Upper Airway		35,810	$ 98	98	0%	38,740	35,770		$ 99		100.19
0330	Dental Procedures		1,117	$ 552	550	0%	2,482	1,124		$ 584		590.94
0019	Level I Excision/ Biopsy		29,433	$ 265	264	0%	73,663	27,885		$ 280		283.20
0284	Magnetic Resonance Imaging and Magnetic		49,437	$ 426	424	0%	78,366	50,359		$ 428		432.88
0188	Level II Female Reproductive Proc		19,527	$ 88	88	0%	24,066	19,480		$ 89		90.05
0247	Laser Eye Procedures		94,887	$ 325	323	0%	102,712	97,253		$ 330		333.68
0160	Level I Cystourethroscopy and other Genitou		54,115	$ 385	384	0%	75,387	53,973		$ 384		389.02
0614	Level 3 Emergency Visits		2,179,959	$ 135	135	0%	3,607,951	2,170,528		$ 137		138.32
0320	Electroconvulsive Therapy		65,889	$ 370	369	0%	70,965	65,925		$ 374		378.64
0682	Level V Debridement & Destruction		10,982	$ 434	432	0%	16,494	10,177		$ 447		453.02
0135	Level III Skin Repair		23,287	$ 280	279	0%	59,341	21,045		$ 295		298.19
0616	Level 5 Emergency Visits		500,299	$ 340	338	0%	1,298,069	499,476		$ 345		348.81
0401	Level I Pulmonary Imaging		3,322	$ 206	205	0%	22,964	3,324		$ 207		210.03
0617	Critical Care		24,662	$ 494	492	0%	110,909	24,637		$ 502	430.76	436.16
0127	Level IV Stereotactic Radiosurgery, MRgFUS		583	$ 8,034	7,996	0%	3,468	575		$ 7,767		7,864.15
0189	Level III Female Reproductive Proc		6,303	$ 194	193	0%	9,726	6,237		$ 192		194.05
0125	Refilling of Infusion Pump		14,715	$ 145	144	0%	32,274	14,563		$ 146		148.16
0615	Level 4 Emergency Visits		1,297,670	$ 219	218	-1%	2,811,940	1,289,785		$ 221		224.14
0016	Level IV Debridement & Destruction		424,796	$ 169	169	-1%	565,625	390,595		$ 173		175.11
0397	Vascular Imaging		340	$ 190	189	-1%	4,078	342		$ 191		193.78
0074	Level IV Endoscopy Upper Airway		3,707	$ 1,056	1,050	-1%	10,692	3,855		$ 1,098		1,111.74
0006	Level I Incision & Drainage		30,993	$ 89	89	-1%	76,499	29,969		$ 92		93.18
0316	Level II Computed Tomography with Contras		25,696	$ 735	730	-1%	38,032	25,808		$ 742		751.09
0624	Phlebotomy and Minor Vascular Access Devi		96,248	$ 35	35	-1%	287,783	69,546		$ 36		36.71
0622	Level II Vascular Access Procedure	1	33,389	$ 1,536	1,526	-1%	55,118	34,163	33,637	$ 1,539	1,542.90	1,562.22
0111	Blood Product Exchange		13,421	$ 757	752	-1%	19,561	13,456		$ 767		776.94
0164	Level II Urinary and Anal Procedures		43,322	$ 136	135	-1%	74,719	42,293		$ 136		137.95
0270	Transesophageal Echocardiogram		29,153	$ 527	523	-1%	47,748	29,195		$ 530		536.30
0274	Myelography		3,832	$ 536	531	-1%	46,514	65		$ 245		248.45
0058	Level I Strapping and Cast Application		243,684	$ 68	68	-1%	497,474	241,084		$ 71		71.79
0238	Level I Repair and Plastic Eye Procedures		2,901	$ 177	176	-1%	6,186	2,891		$ 180		182.39
0169	Lithotripsy		30,321	$ 2,676	2,653	-1%	45,363	30,515		$ 2,707		2,741.04
0084	Level I Electrophysiologic Procedur	1	6,968	$ 630	625	-1%	9,703	6,977	6,973	$ 647	647.41	655.52
0101	Tilt Table Evaluation		16,267	$ 277	275	-1%	18,739	16,267		$ 278		281.84
0158	Colorectal Cancer Screening: Colonoscopy		143,619	$ 500	495	-1%	165,493	143,794		$ 504		510.40
0206	Level II Nerve Injections		23,667	$ 256	254	-1%	168,713	24,154		$ 262		264.89
0681	Knee Arthroplasty	1	285	$ 12,055	11,939	-1%	391	291	286	$ 12,020	12,029.91	12,180.57
0691	Electronic Analysis of Programmable Shunts		17,876	$ 160	158	-1%	37,166	17,730		$ 163		164.64
0275	Arthrography		8,571	$ 257	255	-1%	18,959	799		$ 143		145.12
0047	Arthroplasty without Prosthesis		1,386	$ 2,237	2,214	-1%	6,641	1,384		$ 2,260		2,288.16
0051	Level III Musculoskeletal Procedures Except		8,213	$ 2,704	2,676	-1%	37,487	8,372		$ 2,742		2,776.72
0003	Bone Marrow Biopsy/Aspiration		22,949	$ 204	202	-1%	46,205	22,796		$ 204		206.30

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0668	Level I Angiography and Venography		6,797	$ 375	371	-1%	144,191	530		$ 210		212.44
0441	Level VI Drug Administration		160,476	$ 153	151	-1%	564,240	160,938		$ 153		155.27
0263	Miscellaneous Radiology Procedures		7,759	$ 185	183	-1%	24,560	1,112		$ 93		94.28
0062	Level I Treatment Fracture/Dislocation		4,114	$ 1,638	1,618	-1%	6,790	4,146		$ 1,655		1,675.71
0361	Level II Alimentary Tests		14,904	$ 254	251	-1%	23,710	14,753		$ 257		260.29
0181	Level II Male Genital Procedures		499	$ 2,201	2,174	-1%	1,002	508		$ 2,212		2,239.28
0360	Level I Alimentary Tests		4,576	$ 102	101	-1%	11,095	4,561		$ 103		104.35
0676	Thrombolysis and Thrombectomy		6,884	$ 156	154	-1%	17,425	6,907		$ 158		160.37
0252	Level II ENT Procedures		3,391	$ 462	456	-1%	7,583	3,690		$ 481		487.50
0159	Colorectal Cancer Screening: Flexible Sigmo		1,932	$ 302	297	-1%	2,384	1,936		$ 301		304.45
0015	Level III Debridement & Destruction		290,937	$ 93	91	-1%	643,156	277,573		$ 95		96.30
0251	Level I ENT Procedures		10,292	$ 932	919	-1%	21,852	10,235		$ 162		164.11
0157	Colorectal Cancer Screening: Barium Enema		154	$ 142	140	-1%	209	154		$ 142		144.03
0207	Level III Nerve Injections		433,929	$ 434	428	-1%	781,459	452,818		$ 449		454.58
0134	Level II Skin Repair		24,315	$ 119	117	-1%	97,971	21,607		$ 133		134.48
0413	Level II Radionuclide Therapy		247	$ 344	338	-2%	536	245		$ 345		349.62
0045	Bone/Joint Manipulation Under Anesthesia		4,731	$ 940	925	-2%	15,897	4,849		$ 945		956.52
0254	Level IV ENT Procedures		4,242	$ 1,510	1,486	-2%	29,285	4,340		$ 1,532		1,551.15
0244	Corneal Transplant		4,828	$ 2,393	2,355	-2%	8,451	4,850		$ 2,409		2,438.93
0088	Thrombectomy		60,944	$ 2,491	2,451	-2%	88,038	61,338		$ 2,504		2,534.99
0109	Removal/Repair of Implanted Devices		25,197	$ 380	374	-2%	33,995	25,217		$ 384		389.02
0057	Bunion Procedures		6,538	$ 1,859	1,829	-2%	20,063	6,611		$ 1,877		1,900.32
0153	Peritoneal and Abdominal Procedures		2,413	$ 1,571	1,545	-2%	5,280	2,416		$ 1,602		1,621.85
0440	Level V Drug Administration		888,422	$ 113	112	-2%	2,643,332	883,660		$ 115		116.62
0146	Level I Sigmoidoscopy and Anoscopy		25,335	$ 336	330	-2%	38,842	25,285		$ 324		327.64
0193	Level V Female Reproductive Proc		13,769	$ 1,201	1,180	-2%	22,246	13,798		$ 1,208		1,223.24
0293	Level V Anterior Segment Eye Procedures		27	$ 5,246	5,155	-2%	160	27		$ 5,225		5,290.37
0004	Level I Needle Biopsy/ Aspiration Except Bor		46,285	$ 280	275	-2%	66,232	46,651		$ 283		287.01
0023	Exploration Penetrating Wound		485	$ 587	577	-2%	1,644	479		$ 602		609.68
0020	Level II Excision/ Biopsy		36,272	$ 511	502	-2%	95,355	34,471		$ 548		555.12
0075	Level V Endoscopy Upper Airway		11,323	$ 1,443	1,417	-2%	55,971	11,520		$ 1,465		1,482.89
0054	Level II Hand Musculoskeletal Procedures		4,789	$ 1,667	1,637	-2%	15,282	4,795		$ 1,682		1,702.65
0143	Lower GI Endoscopy		816,006	$ 564	554	-2%	1,306,653	815,043		$ 568		575.53
0093	Vascular Reconstruction/Fistula Repair witho		493	$ 1,898	1,863	-2%	2,049	495		$ 1,942		1,965.81
0049	Level I Musculoskeletal Procedures Except H		8,660	$ 1,343	1,317	-2%	19,729	8,664		$ 1,357		1,374.25
0243	Strabismus/Muscle Procedures		973	$ 1,451	1,423	-2%	4,851	1,244		$ 1,534		1,553.60
0053	Level I Hand Musculoskeletal Procedures		20,568	$ 1,046	1,025	-2%	54,780	20,482		$ 1,058		1,071.44
0240	Level III Repair and Plastic Eye Procedures		9,873	$ 1,092	1,070	-2%	36,238	13,865		$ 1,210		1,224.69
0184	Prostate Biopsy		8,500	$ 707	693	-2%	25,595	8,531		$ 712		720.80
0253	Level III ENT Procedures		6,817	$ 1,060	1,039	-2%	20,804	8,137		$ 1,046		1,059.48
0183	Level I Male Genital Procedures		8,195	$ 1,418	1,388	-2%	21,215	8,386		$ 1,433		1,450.94
0687	Revision/Removal of Neurostimulator Electro		1,232	$ 1,495	1,464	-2%	4,052	1,232		$ 1,521		1,539.79
0136	Level IV Skin Repair		23,547	$ 924	904	-2%	63,061	22,320		$ 971		983.41
0426	Level II Strapping and Cast Application		14,494	$ 142	139	-2%	19,912	14,378		$ 141		142.56
0141	Level I Upper GI Procedures		443,175	$ 541	529	-2%	886,116	442,036		$ 546		552.41
0110	Transfusion		155,877	$ 218	213	-2%	409,654	161,993		$ 220		222.44
0055	Level I Foot Musculoskeletal Procedures		21,027	$ 1,314	1,284	-2%	88,751	21,069		$ 1,332		1,348.78

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APC	Description	Device-Dependent APC?	Single Claim Count Including Misc. Codes	Calculated Median (including device coding edits)	Median with Charge Decompression for implantable devices	Impact of de-compression for implantable devices	Count of all claims (Total for entire file)	Count of Single Claims	Count of Singles After Device Edits	Median Cost (Before Device edits or blend with prior year rate)	Adjusted Median Cost (with device edits and blend if applicable)	Payment Rate for APC (Medians File)
0076	Level I Endoscopy Lower Airway		36,608	$ 632	617	-2%	121,558	37,024		$ 640		647.96
0028	Level I Breast Surgery		27,698	$ 1,311	1,280	-2%	86,312	28,065		$ 1,321		1,337.43
0190	Level I Hysteroscopy		21,536	$ 1,382	1,349	-2%	28,343	21,587		$ 1,391		1,408.70
0161	Level II Cystourethroscopy and other Genitou		28,345	$ 1,121	1,095	-2%	77,487	30,101		$ 1,141		1,155.24
0080	Diagnostic Cardiac Catheterization		285,197	$ 2,493	2,432	-2%	376,721	287,148		$ 2,508		2,539.00
0203	Level IV Nerve Injections		3,229	$ 973	949	-2%	6,547	3,241		$ 979		991.62
0022	Level IV Excision/ Biopsy		27,584	$ 1,335	1,302	-2%	56,984	27,587		$ 1,350		1,366.43
0256	Level V ENT Procedures		11,494	$ 2,538	2,475	-2%	23,264	11,612		$ 2,551		2,583.38
0258	Tonsil and Adenoid Procedures		854	$ 1,429	1,393	-2%	2,116	866		$ 1,441		1,459.05
0021	Level III Excision/ Biopsy		27,654	$ 1,023	998	-2%	62,722	27,308		$ 1,043		1,056.23
0220	Level I Nerve Procedures		46,227	$ 1,153	1,123	-3%	77,600	46,775		$ 1,164		1,178.76
0149	Level III Anal/Rectal Procedures		12,955	$ 1,449	1,411	-3%	24,153	12,992		$ 1,461		1,479.47
0685	Level III Needle Biopsy/Aspiration Except Bo		63,539	$ 599	584	-3%	87,241	63,816		$ 602		609.80
0137	Level V Skin Repair		5,511	$ 1,396	1,360	-3%	33,978	10,848		$ 1,317		1,333.34
0699	Level IV Eye Tests & Treatments		652	$ 892	869	-3%	1,601	702		$ 898		909.43
0166	Level I Urethral Procedures		748	$ 1,227	1,195	-3%	2,008	748		$ 1,237		1,252.01
0224	Implantation of Catheter/Reservoir/Shunt		1,015	$ 2,298	2,237	-3%	3,495	1,025		$ 2,335		2,363.76
0233	Level II Anterior Segment Eye Procedures		4,676	$ 1,025	998	-3%	10,223	4,716		$ 1,040		1,052.54
0005	Level II Needle Biopsy/Aspiration Except Bor		23,736	$ 459	447	-3%	37,380	23,726		$ 459		465.04
0017	Level VI Debridement & Destruction		2,834	$ 1,254	1,220	-3%	5,897	2,841		$ 1,264		1,280.08
0236	Level II Posterior Segment Eye Procedures		981	$ 1,179	1,147	-3%	2,209	979		$ 1,188		1,202.39
0115	Cannula/Access Device Procedures	1	1,251	$ 1,909	1,856	-3%	2,489	1,301	1,259	$ 1,933	1,920.99	1,945.05
0007	Level II Incision & Drainage		4,996	$ 747	726	-3%	9,235	4,884		$ 791		801.21
0105	Repair/Revision/Removal of Pacemakers, Al		3,706	$ 1,550	1,506	-3%	54,475	3,713		$ 1,555		1,574.96
0008	Level III Incision and Drainage		1,494	$ 1,189	1,155	-3%	3,022	1,481		$ 1,198		1,213.08
0113	Excision Lymphatic System		9,751	$ 1,469	1,427	-3%	36,346	9,788		$ 1,479		1,497.45
0030	Level III Breast Surgery		2,570	$ 2,471	2,399	-3%	18,298	2,727		$ 2,545		2,577.24
0069	Thoracoscopy		2,145	$ 2,076	2,016	-3%	6,598	2,159		$ 2,086		2,112.62
0162	Level III Cystourethroscopy and other Genito		66,709	$ 1,574	1,528	-3%	170,787	68,613		$ 1,590		1,610.00
0241	Level IV Repair and Plastic Eye Procedures		1,878	$ 1,563	1,516	-3%	5,974	1,932		$ 1,566		1,585.42
0165	Level IV Urinary and Anal Procedures		1,784	$ 1,220	1,183	-3%	4,571	1,790		$ 1,234		1,249.19
0212	Nervous System Injections		308	$ 562	544	-3%	1,239	312		$ 546		552.84
0029	Level II Breast Surgery		1,579	$ 2,010	1,943	-3%	8,400	1,704		$ 2,044		2,069.64
0155	Level II Anal/Rectal Procedures		1,307	$ 711	687	-3%	4,662	1,288		$ 733		742.18
0234	Level III Anterior Segment Eye Procedures		9,147	$ 1,509	1,457	-3%	20,909	9,191		$ 1,515		1,533.86
0679	Level II Resuscitation and Cardioversion		30,766	$ 349	337	-3%	46,656	30,797		$ 352		356.08
0195	Level VI Female Reproductive Procedures		2,759	$ 2,059	1,988	-3%	11,501	2,776		$ 2,074		2,100.04
0035	Arterial/Venous Puncture		24,552	$ 15	14	-4%	176,800	15,033		$ 13		13.32
0384	GI Procedures with Stents	1	6,889	$ 1,580	1,523	-4%	21,958	6,922	6,895	$ 1,583	1,587.03	1,606.90
0279	Level II Angiography and Venography		18,164	$ 636	613	-4%	122,130	583		$ 373		378.11
0428	Level III Sigmoidoscopy and Anoscopy		371	$ 1,343	1,294	-4%	711	370		$ 1,377		1,394.39
0142	Small Intestine Endoscopy		12,632	$ 605	583	-4%	16,595	12,603		$ 606		613.13
0070	Thoracentesis/Lavage Procedures		72,623	$ 330	318	-4%	99,198	72,627		$ 334		338.18
0121	Level I Tube changes and Repositioning		26,428	$ 204	196	-4%	45,373	26,317		$ 207		209.64
0042	Level II Arthroscopy		5,305	$ 2,975	2,862	-4%	63,856	5,253		$ 3,005		3,043.03
0092	Level I Vascular Ligation		5,549	$ 1,645	1,582	-4%	14,753	5,660		$ 1,663		1,684.02
0114	Thyroid/Lymphadenectomy Procedures		5,124	$ 2,830	2,722	-4%	10,114	5,174		$ 2,842		2,877.20

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APC	Description	Device-Dependent APC?	Single Claim Count Including Misc. Codes	Calculated Median (including device coding edits)	Median with Charge Decompression for implantable devices	Impact of de-compression for implantable devices	Count of all claims (Total for entire file)	Count of Single Claims	Count of Singles After Device Edits	Median Cost (Before Device edits or blend with prior year rate)	Adjusted Median Cost (with device edits and blend if applicable)	Payment Rate for APC (Medians File)
0652	Insertion of Intraperitoneal and Pleu	1	3,436	$ 1,951	1,877	-4%	5,407	3,445	3,138	$ 1,962	1,997.86	2,022.88
0621	Level I Vascular Access Procedures		50,399	$ 690	662	-4%	83,694	50,443		$ 692		700.90
0147	Level II Sigmoidoscopy and Anoscopy		7,564	$ 552	530	-4%	10,718	7,537		$ 557		564.39
0163	Level IV Cystourethroscopy and other Genito		11,954	$ 2,300	2,206	-4%	40,804	12,039		$ 2,322		2,351.39
0130	Level I Laparoscopy		6,154	$ 3,043	2,915	-4%	19,422	6,179		$ 2,190		2,217.49
0041	Level I Arthroscopy		60,225	$ 1,841	1,761	-4%	148,627	61,176		$ 1,852		1,875.55
0237	Level III Posterior Segment Eye Procedures		1,178	$ 1,817	1,736	-4%	12,610	1,177		$ 1,824		1,847.22
0427	Level II Tube Changes and Reposit	1	10,564	$ 916	875	-4%	21,092	12,711	11,368	$ 977	936.73	948.47
0280	Level III Angiography and Venography		19,078	$ 1,507	1,439	-4%	309,316	234		$ 712		721.14
0208	Laminotomies and Laminectomies		5,669	$ 3,012	2,875	-5%	14,164	5,737		$ 2,999		3,036.33
0037	Level IV Needle Biopsy/Aspiration Except Bo		16,097	$ 864	825	-5%	49,370	16,066		$ 878		889.15
0221	Level II Nerve Procedures		1,018	$ 1,988	1,895	-5%	2,678	1,024		$ 2,016		2,041.48
0415	Level II Endoscopy Lower Airway		901	$ 1,527	1,454	-5%	2,373	901		$ 1,528		1,546.99
0150	Level IV Anal/Rectal Procedures		2,535	$ 1,909	1,815	-5%	4,723	2,549		$ 1,922		1,946.10
0245	Level I Cataract Procedures without IOL Inse		570	$ 944	896	-5%	979	574		$ 937		949.17
0688	Revision/Removal of Neurostimulator Pulse (		580	$ 2,256	2,142	-5%	2,222	582		$ 2,247		2,275.42
0653	Vascular Reconstruction/Fistula Rej	1	1,511	$ 2,574	2,444	-5%	26,138	1,585	1,573	$ 2,579	2,584.62	2,616.99
0083	Coronary or Non-Coronary Angiopl	1	35,389	$ 2,882	2,734	-5%	140,944	38,434	37,879	$ 2,898	2,897.95	2,934.24
0246	Cataract Procedures with IOL Insert		549,298	$ 1,510	1,426	-6%	603,548	553,684		$ 1,524		1,542.63
0422	Level II Upper GI Procedures		718	$ 1,554	1,464	-6%	1,227	717		$ 1,550		1,569.91
0151	Endoscopic Retrograde Cholangio-Pancreatc		9,461	$ 1,329	1,251	-6%	41,572	9,458		$ 1,339		1,355.51
0050	Level II Musculoskeletal Procedures Except I		10,524	$ 1,833	1,723	-6%	38,959	10,573		$ 1,845		1,867.88
0131	Level II Laparoscopy		58,078	$ 2,853	2,676	-6%	103,855	60,892		$ 2,901		2,937.53
0082	Coronary or Non-Coronary Atherect	1	4,135	$ 5,592	5,238	-6%	16,464	4,390	4,374	$ 5,584	5,584.20	5,654.14
0672	Level IV Posterior Segment Eye Procedures		28,476	$ 2,390	2,237	-6%	80,386	28,759		$ 2,397		2,427.47
0103	Miscellaneous Vascular Procedures		5,646	$ 944	884	-6%	22,170	5,725		$ 960		971.78
0387	Level II Hysteroscopy		2,272	$ 2,180	2,040	-6%	3,861	2,278		$ 2,190		2,217.55
0052	Level IV Musculoskeletal Procedure		5,507	$ 4,888	4,561	-7%	13,664	5,547		$ 4,948		5,009.57
0388	Discography		571	$ 1,018	947	-7%	4,060	103		$ 568		575.15
0429	Level V Cystourethroscopy and othe		18,982	$ 2,865	2,664	-7%	25,973	19,054		$ 2,887		2,923.64
0152	Level I Percutaneous Abdominal an		716	$ 1,778	1,652	-7%	2,794	757		$ 1,807		1,829.93
0249	Level II Cataract Procedures withou		1,525	$ 1,865	1,730	-7%	4,778	1,527		$ 1,871		1,894.78
0132	Level III Laparoscopy		923	$ 4,405	4,086	-7%	2,133	925		$ 4,466		4,522.34
0085	Level II Electrophysiologic Procedur	1	3,951	$ 3,047	2,783	-9%	15,791	4,022	3,957	$ 3,043	3,059.06	3,097.37
0423	Level II Percutaneous Abdominal ar		680	$ 2,713	2,455	-10%	1,353	686		$ 2,775		2,810.08
0674	Prostate Cryoablation	1	1,995	$ 7,748	6,902	-11%	3,182	2,066	1,997	$ 7,721	7,782.75	7,880.21
0086	Level III Electrophysiologic Procedu	1	382	$ 5,702	5,070	-11%	8,370	392	384	$ 5,677	5,709.52	5,781.03

Note: Some APCs not of interest to Advamed may not be properly calculated (eg, psychiatric visits). Rates were not calculated for the new composite APCs.
Medians differ substantially from published CMS data for APCs containing "Q" status radiology codes.
Source: Analaysis of 2008 OPPS proposed rule claims data.