The Mapping Medicare Disparities Tool
Frequently Asked Questions

The Mapping Medicare Disparities (MMD) Tool provides two components, the Population View and the Hospital View. The Population View identifies differences between sub-groups (e.g., racial and ethnic populations) in health outcomes, utilization, and spending. The Hospital View identifies disparities in selected health outcome and quality measures between hospitals. This document presents Frequently Asked Questions (FAQ) as they relate to the MMD Tool and its use.

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GENERAL

Q. What is the MMD Tool?

A. The Mapping Medicare Disparities (MMD) includes two views: the Population View and the Hospital View. The Population View is an interactive, web-based tool that identifies disparities between sub-populations (e.g., racial and ethnic groups) in health outcomes, utilization, and spending. The Population View presents health-related measures from Medicare claims by sex, age, dual-eligibility for Medicare and Medicaid, race and ethnicity, state/territory and county. The Population View provides users with a quick and easy way to identify areas with large numbers of vulnerable populations. Users can identify regions and populations where Medicare outcomes differ from state/territory or national averages, thereby supporting the development of targeted strategies and programs to eliminate disparities that exist between different populations (e.g. racial and ethnic groups). The Population View offers data on chronic disease prevalence, Medicare spending, hospital and emergency department utilization, preventable hospitalizations, readmissions, mortality rates, potentially disabling conditions, preventive services for Medicare beneficiaries, average inpatient days per admission, PSI admissions, average Medicare reimbursement, inpatient admission type and inpatient admission discharge destination with various chronic conditions, a disability, or end stage renal disease.

The Population View also offers socioeconomic data from the American Community Survey at the county level.[1]

The Hospital View is an interactive, web-based tool that allows for analysis of selected quality measures by hospital and comparisons with other hospitals. Comparisons can also be made against the county, state/territory, or national average for each of the outcomes and measures.

Q. Why is there a need for the MMD Tool?

A. Chronic diseases, such as diabetes and cardiovascular diseases, pose a significant problem in the United States, resulting in substantial morbidity, mortality, disability, and cost. In 2015, more than two-thirds of Medicare beneficiaries had multiple chronic conditions and accounted for 94 percent of Medicare spending. Racial and ethnic minority communities are disproportionately affected by the disparities in disease, and the burden of disease differs by where individuals live. Understanding geographic differences in disparities through the MMD Population View and differences in hospital performance through the Hospital View are important to informing policy decisions and efficiently targeting populations and geographies for interventions.

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[1] American Community Survey https://www.census.gov/programs-surveys/acs/

Q. How can I access the MMD Tool?

A. The MMD Tool can be found here. The technical documentation is available here. The MMD Tool Overview provides more information on the purpose and uses of the MMD Tool.

Q. Who should use the MMD Tool?

A. The MMD Tool is a useful resource for government agencies, policy makers, researchers, community-based organizations, health providers, Quality Innovation Networks-Quality Improvement Organizations (QIN-QIOs), Hospital Improvement Innovation Networks (HIINs), and the general public to identify and explore different facets of Medicare chronic disease disparities. It can also be used by researchers as a starting point to identify important health-related questions that impact the Medicare population. Users with a wide range of data sophistication may take advantage of the breadth of information contained in the MMD Tool, as it visually summarizes large amounts of data in a simple format.

Q. Will the MMD Tool be updated in the future?

A. The MMD Tool is improved and enriched over time. Enhancements will take into consideration users' suggestions for improvement and stakeholder feedback when possible. Potential additions may include adding measures for other chronic conditions, hospital-specific data broken down by sub-populations, or Medicare Advantage data.

To receive updates on the MMD Tool, please subscribe to our listserv at https://public.govdelivery.com/accounts/USCMS/subscriber/new and choose Minority Health under Outreach & Education.

Q. How may I provide feedback on the MMD Tool?

A. Questions and comments can be submitted to HealthEquityTA@cms.hhs.gov. Questions will be answered in a timely manner and suggestions for enhancements will be taken into consideration.

Q. Where can I find additional information about the MMD Tool?

A. For additional details about the MMD Tool, please review the MMD Tool Overview and the MMD Tool Technical Documentation.

Q. Can I download the entire database as a flat file?

A. The entire database is currently not available for download as a flat file (e.g., csv format). Please refer to the "Using the MMD Tool" section on how you can download the data presented in your map.

Data Background and Derivations

Q. What measures, conditions, or services are included in the MMD Tool?

    A. The Population View includes ten health outcome measures with information on up to 60 specific chronic and potentially disabling conditions (based on International Classification of Diseases, 9th and 10th Revisions, Clinical Modification [ICD-9 and ICD-10] billing codes), and 27 preventive services. These measures allow the user to examine the prevalence of multiple chronic conditions grouped into four categories (i.e., 0, 1, 2, and 3 or more). Additionally, the Population View includes information on the prevalence, costs, and hospitalizations of beneficiaries with end stage renal disease and/or a disability. The Hospital View includes selected health outcomes and quality measures allowing for comparisons across hospitals.

    For a complete list of the chronic conditions, measures, and services presented by the MMD Tool, as well as the data and methodology used, refer to the MMD Tool Overview and the MMD Tool Technical Documentation.

Q. Where does the underlying data in the MMD Tool come from?

    A. The data used in the Population View are based on CMS administrative enrollment and claims data for Medicare beneficiaries enrolled in the fee-for-service program. These data are available from the CMS Chronic Condition Data Warehouse (CCW), a database with 100 percent of the Medicare enrollment and fee-for-service claims data.

    The prevalence rates are based on 100 percent of Part A and Part B claims. The hospital utilization, preventable hospitalization, readmission, and mortality rates are based on 100 percent inpatient claims, while emergency department utilization rates are based on 100 percent of inpatient and outpatient claims. For more information, please refer to the MMD Tool Technical Documentation.

    The socio-economic data within the "County Profile View", "State/Territory Profile View" and "National Profile View" of the Population View are based on the ACS data provided by the U.S. Census Bureau for years 2012 through 2017. Socio-economic measures for each county and state as well as nationally include the following: median household income by household size, percent below federal poverty level, insurance coverage type by age, English proficiency, population by race/ethnicity, and unemployment rate.

    The data used in the Hospital view come from the CMS Hospital Compare website.

Q. What are Research Identifiable Files?

    A. Research identifiable files contain beneficiary-level protected health information. These files have been reviewed by CMS's Privacy Board to ensure that the beneficiary's privacy is protected and the need for identifiable data is justified.

Q. What Master Beneficiary Summary File measures are used in the Population View?

A. The Population View uses the following Beneficiary Summary File information:

- State/territory: A Medicare beneficiary's state/territory of residence is based upon the state/territory code, which is provided by the Social Security Administration (SSA).
- County: A Medicare beneficiary's county of residence is based upon both the state/territory and county codes; which are provided by SSA.
- Age: A Medicare beneficiary's age is provided by SSA. The MMD Tool categorizes beneficiaries into four age groups: those aged < 65 years, ages 65 through 74 years, ages 75 through 84 years, and those aged 85 years and older.
- Sex: A Medicare beneficiary's sex is classified as male/female.
- Dual eligibility: A Medicare beneficiary receiving full or partial Medicaid benefits in any month in the given calendar year is classified as dual eligible by the MMD Tool.
- Race and ethnicity: A Medicare beneficiary's race and ethnicity is based on the variable imputed race definition created by the Research Triangle Institute (RTI). RTI's race definition improves on the SSA classification of a beneficiary's race and ethnicity which is designated at birth. The RTI race variable imputes race for Hispanic and Asian/Pacific Islander classifications based on Census surname lists for Hispanic and Asian/Pacific Islander origin, as well as geography.[2] The race and ethnicity classifications are: Non-Hispanic White, Black or African American, Asian/Pacific Islander, Hispanic, and American Indian/Alaska Native.

The Population View uses the following Geographic Variation Database (GVDB) Beneficiary Summary File information:

- Inpatient admission measures: A Medicare beneficiary's admission rates by admission type, admission rates by discharge destination, average inpatient days and average Medicare reimbursement.

Q. What has been done to protect the privacy of Medicare beneficiaries?

A. CMS is obligated by the federal Privacy Act, 5 U.S.C. Section 552a, and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) Privacy Rule, 45 C.F.R. Parts 160 and 164, to protect the privacy of individual beneficiaries and other persons. The MMD Tool performs a series of checks and data suppression decisions to maintain beneficiary confidentiality and privacy. If the study population for the user's chosen set of beneficiary characteristics is less than 11 beneficiaries, the MMD Tool will not display the chosen domain or measure. If the number of beneficiaries for the numerator of a measure (e.g., beneficiaries who are hospitalized) is less than three but greater than zero, the MMD Tool will display 0 percent. Additionally, the underlying data in the MMD Tool is certified as de-identified according to the HIPAA Privacy Rule.

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[2] Eicheldinger, C and Bonito, A. Health Care Financing Review/Spring 2008/Volume 29, Number 3.

Q. How is a beneficiary identified in the Population View as having a chronic condition?

A. In the Population View, a Medicare beneficiary is considered to have a chronic condition if the individual has a claim in any of the six CMS Research Identifiable Files indicating that the beneficiary received a service or treatment for a specific condition, according to the CMS CCW or the Centers for Disease Control and Prevention (CDC) methodology. These methodologies call for use of diagnosis codes from the ICD-9 and ICD-10 to identify claims. Detailed information on the identification of these conditions is available from the CCW and the CDC.

Q. What are ICD-9 and ICD-10 procedure codes?

A. ICD-9 and ICD-10 diagnosis codes are a set of codes used by physicians, hospitals, and allied health workers to indicate diagnosis for all patient encounters in order to improve statistical tracking of diseases.

Using the MMD Tool

Q. Why can't I see county-lines when viewing data in the state/territory mode?

A. In the Population and Hospital Views, you can choose to view aggregate state/territory or county-specific data. If you're interested in viewing data for counties, select *County* from the **Geography** drop-down menu in the Population View or *County* from the **Map Display: County/State** drop down menu in the Hospital View.

Q. In the Population View, what are the Trend View, National, State/Territory, and County Profile View features?

A. The Trend View feature allows users to analyze trends for all health measures included in the Population View. By clicking on a county, and then selecting "Trend View", users can view line charts for the selected metric together with state/territory and national comparisons. This feature also allows users to download the resulting graphic to their computers. The County Profile View provides a list of socio-economic variables for each county including: median household income by household size, percent below federal poverty level, insurance coverage type by age, English proficiency, population by race/ethnicity, and unemployment rate. By clicking on a county, and then selecting either "County Profile View", "State Profile View, or "National Profile View", users can view these socio-economic variables for the selected county, the state that the county is located and nation. By clicking on the state (in the case that the "Geography" drop-down selection is "State"), users can view these socio-economic variables for the state and nation. Pulling data from the Census Bureau's American Community Survey, the socio-economic variables are not specific to the Medicare population, but some variables include data for individuals that are 65 or older. The MMD Tool allows users to download the national, state/territory, county, or trend profile data via the "Download Data" button below the

tables and graphs. This feature allows users to save the data on their computers in a .csv format. Users many also download the graphics in the national, state/territory, and county views using the Download Profile Image button below the images.

Q. How do I save the map I created?

A. In both the Population and Hospital View, to save and export your map, you can click on the "Download Map" icon underneath the dropdown selections. This feature will allow you to save a .pdf file on your computer.

You can also choose to save or export your map by taking a screen-shot of the MMD Tool and save it as a picture.

If you are using a Windows operating system, a screen-shot can be taken by completing the following steps:

Step 1. Click the browser window you want to save (i.e., the window with the MMD Tool open).

Step 2. Hold Alt + Print Screen on your keyboard.

Step 3. Hold Ctrl + V after opening Microsoft Paint or Microsoft Word.

If you are using a Mac operating system, a screen-shot can be taken by completing the following steps:

Step 1. Click the browser window you want to save (i.e., the window with the MMD Tool open).

Step 2. Hold Command + Shift + 3 on your keyboard.

Step 3. The map created by the MMD Tool will be automatically saved to your desktop.

Q. How do I export or download the underlying data presented in the map I created?

A. To export/download the underlying data presented in your map in the Population View, click on the [Download] button underneath the **Race and Ethnicity Comparison** tab.
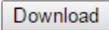
To export/download the underlying data presented in your map in the Hospital View, click on the [Download] button underneath the **Hospital Size Comparison** tab.
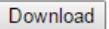
Q. How do I zoom in or out on a specific location in the map I created?

A. The MMD Tool provides you with two distinct options for zooming in/out.

If you are using a computer with a mouse, then the zoom feature can be utilized by completing the following steps:

Zoom In – Click on the county/state/territory you wish to enlarge. Hold Ctrl and push the scroll wheel up (away from you) on the mouse. Each push of the scroll wheel will increase the zoom factor by 10 percent.

Zoom Out – Hold Ctrl and pull the scroll wheel down (toward you) on the mouse. Each pull of the scroll wheel down will decrease the zoom factor by 10 percent.

If you are using a computer without a mouse, then the zoom feature can be utilized by completing the following steps:

Zoom In – Click on the county/state/territory you wish to enlarge. With one finger firmly placed on the TouchPad, drag a separate finger away from the first on the TouchPad. Each time you drag your two fingers apart, you will increase the zoom factor by 10 percent.

Zoom Out – With one figure firmly placed on the TouchPad, drag a separate finger towards the first (*in a pinching motion)* on the TouchPad. Each time you *pinch* your two fingers together, you will decrease the zoom factor by 10 percent.

Q. How do I find a specific state, territory, or county in the MMD Tool?

A. To zoom into a specific state or territory, you can select the state or territory of interest from the "State" drop-down menu. You may also use the manual zoom to zoom into your state or territory of interest. To select a specific county within that state or territory, locate your county of interest in the dropdown menu just below your state/territory selection.

Interpreting Results

Q. How can I compare differences in measures in the Population View?

A. When an option other than *Base Measure* (under the **Analysis** drop-down menu) is selected, you can choose to visualize differences between patient characteristics, thereby comparing health outcomes, spending or utilization.

Q. How can I evaluate hospital performance for a certain measure in the Hospital View?

A. The Hospital View allows the user to compare hospital performance using a variety of comparison options. The user can choose one or multiple comparisons to evaluate hospital performance. For example, a user can select a hospital that has over 200 beds (hospital size) and compare the performance of hospitals under 100 beds (hospital size comparison) in a particular state/territory (geographic comparison).

Q. How do I interpret the information presented when "Within County Differences" or "Within State/Territory Differences" is chosen in the Analysis tab of the Population View?

A. If you select *Within County Differences* (Select *County* from the **Geography** tab) or *Within State/Territory Differences* (Select *State/Territory* from the **Geography** tab) in the

Analysis tab, your map will display three values when you hover over a specific county (or state/territory, depending on your selection in the **Geography** tab). The first value (A) presented in the summary box is the rate calculated for the **Primary** patient group. The second value (B) is the rate calculated for the **Comparison** patient group. The difference between the first rate (A) and the second rate (B) is displayed in the third row (A – B = C). A positive value indicates a county or state/territory in which the chosen **Primary** patient group shows a higher rate than the chosen **Comparison** patient group. A negative value indicates a county or state/territory in which the chosen **Comparison** patient group shows a lower rate than the chosen **Primary** patient group. For example, the MMD Population View shows that in 2012, black Medicare beneficiaries in Wayne County, Michigan experienced 24.1 hospitalizations for heart failure per 1,000 beneficiaries (A). The rate for whites in the same county was 16.1 per 1,000 beneficiaries (B), resulting in a difference of eight more hospitalizations per 1,000 (C) experienced by black Medicare beneficiaries within that county.

Q. How do I interpret the information presented when "Differences between Urban and Rural Counties" is chosen in the Analysis tab of the Population View?

A. If you select *Differences between Urban and Rural Counties* in the **Analysis** tab, your map will display three values when you hover over a specific state. The first value (A) presented in the summary box is the state/territory's urban rate based on the selections made in the patient characteristics tabs (i.e., **Sex**, **Age**, **Dual Eligibility**, and **Race and Ethnicity**). The second value (B) is the state/territory's rural rate calculated using the same patient characteristics selected to calculate the urban rate. The difference between the state/territory's urban rate (A) and the state/territory's rural rate (B) is displayed in the third row (A – B = C). A positive value indicates that a state/territory's urban counties show a higher rate than state/territory's rural counties. A negative value indicates the state/territory's urban counties show a lower rate than the state/territory's urban counties. For example, the Population View shows that in 2012, Medicare beneficiaries in Georgia's urban counties had approximately an eight percent prevalence rate of obesity per 10,000 beneficiaries (A). Georgia's rural county's obesity prevalence rate was nine percent per 10,000 beneficiaries (B). Thus, the difference between Georgia's urban and rural obesity rates (C) was -1 percent per 10,000 beneficiaries—an instance where Georgia's rural counties performed worse than the state's urban counties.

Q. How do I interpret the information presented when "Differences from State/Territory Average" is chosen in the Analysis tab of the Population View?

A. If you select *Differences from State/Territory Average* in the **Analysis** tab, your map will display three values when you hover over a specific county. The first value (A) presented in the summary box is the county's rate based on the selections made in the patient characteristics tabs (i.e., **Sex**, **Age**, **Dual Eligibility**, and **Race and Ethnicity**). The second value (B) is the state/territory's average rate calculated using the same patient characteristics selected to calculate the county's rate. The difference between the county's rate (A) and the state/territory's rate (B) is displayed in the third row (A – B = C). A positive value indicates a county that performs worse than the state/territory's average. A negative value indicates a county that performs better than the state/territory's average.

For example, the Population View shows that in 2012, Medicare beneficiaries in Wayne County, Michigan experienced approximately 19 hospitalizations for heart failure per 1,000 beneficiaries (A). The state average was 14 hospitalizations for heart failure per 1,000 beneficiaries (B). Thus, the difference between the county and state (C) was five hospitalizations per 1,000 beneficiaries—an instance where the county performed worse than the state average.

Q. How do I interpret the information presented when "Differences from National Average" is chosen in the Analysis tab of the Population View?

A. If you select *Differences from National Average* in the **Analysis** tab, your map will display three values when you hover over a specific county or state/territory. The first value (A) presented in the summary box is the county's or state/territory's rate based on the selections made in the patient characteristics tabs (i.e., **Sex**, **Age**, **Dual Eligibility**, and **Race and Ethnicity**). The second value (B) is the national average rate calculated using the same patient characteristics selected to calculate the county's or state/territories' rate. The difference between the county's or state/territory's rate (A) and the national rate (B) is displayed in the third row (A – B = C). A positive value indicates a county or state/territory that performs worse than the national average. A negative value indicates a county or state/territory that performs better than the national average. For example, if users compare Michigan's rate of hospitalizations from heart failure in 2012 to the national average, they will find that the state's rate of 14.2 hospitalizations per 1,000 beneficiaries (A) minus the national rate of 1.7 hospitalizations per 1,000 beneficiaries (B) equals a difference of 12.5 more hospitalizations per 1,000 beneficiaries in Michigan (C)—an instance where the state performs worse than the national average.

Q. How do I compare racial and ethnic differences at the county-level to racial and ethnic differences at the state/territory-level in the Population View?

A. Select *county* from the **Geography** tab and select the "Difference in Difference (County vs. State/Territory)" option from the **Analysis** tab. This will allow you to compare racial and ethnic differences at the county-level to racial and ethnic differences at the state/territory-level.

Q. How do I interpret the results presented in the Hospital View?

A. The map in the Hospital View presents the average value of the selected measure across all hospitals for each county.

If you select a specific hospital from the menu and hospital types for the comparison, the graph will present the value of measure for the selected hospital (represented as a bar for each measure) along with the average for the comparison group (represented as a single dot for each measure).

Q. Why are some results missing?

A. In order to maintain beneficiary confidentiality and privacy, the MMD Tool suppresses a county's or state/territory's rate or cost if the size of the sub-population is too small. If the

study population for the user's chosen set of beneficiary characteristics is less than 11 beneficiaries, the MMD Tool will not display the chosen domain or measure. If the number of beneficiaries for the numerator of a measure (e.g., beneficiaries who are hospitalized) is less than three but greater than zero, the MMD Tool will display 0 percent.

The Hospital View uses data from CMS's Hospital Compare dataset, which is subject to similar confidentially processes and privacy restricted. In cases where there were non-zero but insufficient data points for a given hospital measure, the hospital will have no data shown in the Hospital View. In the event a hospital has no data for an entire subdomain, the Hospital View chart indicates that the hospital has no data in an error overlay, rather than displaying any bars or dots.