Summary of TEP Evaluation: Using Indirect Estimation to Overcome Missing/Incomplete SDOH and Demographic Data

Chapter 4, Deliverable 4-3m

Centers for Medicare & Medicaid Services: Measure Instrument Development and Support

Development, Reevaluation, and Implementation of Outcome/Efficiency Measures for Hospitals and Eligible Clinicians, Option Period 3

Contract Number HHSM-75FCMC18D0042, Task Order HHSM-75FCMC19F0001

Submitted June 13, 2022 to:
Tyson Nakashima, Contracting Officer Representative
Centers for Medicare & Medicaid Services

Prepared by:
Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation
Lisa Suter, MD, Project Director

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YaleNewHavenHealth CORE CENTER FOR OUTCOMES RESEARCH AND EVALUATION

Summary of Technical Expert Panel (TEP) Meeting #2
March 21, 2022:
Using Indirect Estimation to Overcome Missing/Incomplete SDOH and Demographic Data

June 13, 2022

Prepared by:

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation (CORE)

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Table of Contents

Background

The Centers for Medicare & Medicaid Services (CMS) has contracted with Yale New Haven Health Services Corporation - Center for Outcomes Research and Evaluation (CORE) to develop measurement methods and measures to assess the level of disparity in outcomes and commitment to health equity at hospitals. The contract name is Development, Reevaluation, and Implementation of Outcome/Efficiency Measures for Hospital and Eligible Clinicians, Option Period 2. The contract number is HHSM-75FCMC18D0042, Task Order Number HHSM-75FCMC19F0001.

CORE is obtaining expert and stakeholder input on the proposed methods and measures. The CORE measure development team is comprised of experts in quality outcomes measurement and measure development. CORE also convened a technical expert panel (TEP) of clinicians, patient advocates, and other stakeholders to provide input on the measure. Collectively, the TEP members brought expertise in consumer/patient/family caregiver perspectives, clinical content, performance measurement, and healthcare disparities.

This report summarizes the feedback and recommendations received from the TEP during the second meeting in Option Year 2, which focused on using indirect estimation to overcome missing/incomplete social determinants of health (SDOH) and demographic data.

Measure Development Team

The CORE Measure Development Team provides a range of expertise in outcome measure development, health services research, clinical medicine, statistics, and measurement methodology. See Appendix D for the full list of members for the CORE Measure Development Team.

The TEP

The TEP was originally convened in 2018. For this TEP, in alignment with the CMS Measures Management System (MMS), CORE held a 30-day public call for nominations and convened a TEP for the development and reevaluation of methodologies that illuminate disparities in hospital outcome measures using patient social risk factors. CORE solicited potential TEP members via a posting on CMS's website and emails to individuals and organizations recommended by the measure development team and stakeholder groups and email blasts sent to CMS physician and hospital email listservs.

The TEP was reconvened in Spring 2021 to provide additional input on initiatives related to health equity in CMS programs. Of the original 12 TEP members, 3 did not agree to reconvene. 2 of the 3 members who asked not to participate were patient and family representatives; to fill this perspective, two new patient and family representatives were recruited. The last slot was filled by another technical expert who was recruited to participate.

Due to scheduling conflicts, this TEP meeting was attended by 9 of the 12 members, listed in Table 1. See Appendix D for a list of the original twelve TEP members.

The role of the TEP is to provide feedback and recommendations on key methodological and clinical decisions. The appointment term for the TEP is from November 2021 to March 2022.

Specific Responsibilities of the TEP Members

- Complete and submit all nomination materials, including the TEP Nomination Form, statement of interest, and curriculum vitae
- Review background materials provided by CORE prior to each TEP meeting
- Attend and actively participate in TEP conference calls
- Provide input on key clinical, methodological, and other decisions
- Provide feedback on key policy or other non-technical issues
- Review the TEP summary report prior to public release
- Be available to discuss recommendations and perspectives following TEP meetings and public release of the TEP Summary Report to CMS

Table 1. TEP Member Name, Affiliation, and Location

Name	Title, Organization	Location
Philip Alberti, PhD	Founding Director, Center for Health Justice at Association of American Medical Colleges (AAMC); Senior Director, Health Equity Research and Policy, AAMC	Washington, DC
David Baker, MD, MPH, FACP	Executive Vice President, The Joint Commission	Oakbrook Terrace, Illinois
Ashley Crowley	Person and Family Engagement (PFE) Expert	Quinter, KS
Tamarah Duperval-Brownlee, MD, MPH, MBA, FAAFP	Chief Health Officer, Accenture	St. Louis, MO
Jonathan Gleason, MD	Executive Vice President, Chief Clinical Officer, Prisma Health	Greenville, South Carolina
D'Anna Holmes	Person and Family Engagement (PFE) Expert	Chicago, IL

Name	Title, Organization	Location
Ninez Ponce, PhD, MPP	Director, University of California, Los Angeles (UCLA) Center for Health Policy Research; Principal Investigator, California Health Interview Survey; Professor, Department of Health Policy and Management, Fielding School of Public Health at UCLA	Los Angeles, CA
Aswita Tan-McGrory, MBA, MSPH	Director, the Disparities Solutions Center; Director, Equity in Care Implementation; Administrative Director of Research, the Department of Medicine, Massachusetts General Hospital	Boston, MA
Jorge Villegas, PhD, MBA	Person and Family Engagement (PFE) Expert; Associate Dean and Professor, College of Business and Management at University of Illinois at Springfield	Springfield, Illinois

TEP Meetings

CORE held a TEP meeting in March 2022 to discuss the potential use of methods for indirectly estimating race and ethnicity for health quality measurement when self-reported data on race and ethnicity are missing/incomplete. In particular, the use of these methods for calculating disparities in hospital-level risk standardized readmission rates as part of the CMS Disparity Methods was discussed. This summary report contains a summary of this TEP meeting. This TEP is the second in a series of discussions regarding measures of health care equity. The presentation of any additional health equity measures or initiatives will be presented in separate, subsequent summary report(s), as those meetings are scheduled.

TEP meetings follow a structured format consisting of the presentation of key issues identified during measure development, as well as CORE's proposed approaches to addressing the issues, followed by an open discussion of these issues by the TEP members.

TEP Meeting Overview

Prior to the TEP meeting, TEP members received detailed meeting materials outlining the Indirect Estimation Method.

During the TEP meeting, CORE solicited feedback from the TEP on the potential use of methods for indirectly estimating race and ethnicity, when self-reported data on race and ethnicity are missing/incomplete, as part of the CMS Disparity Methods. The TEP meeting presenters were

Sapha Hassan and Alon Peltz (CORE) and Marc Elliott (RAND Corporation). The RAND Corporation is a sub-contractor to CORE in support of this project. The TEP meeting was facilitated by HealthCare Dynamics International (HCDI).

Following the meeting, TEP members who were unable to join the TEP teleconference were given the meeting recording and the opportunity to provide written feedback. This TEP is functioning in an advisory only capacity and as such no motions to vote or approve concepts were undertaken.

The following bullets represent a high-level summary of what was presented and discussed during the TEP meeting, as well as the written responses of those who were unable to join. For transparency, we have provided the minutes to teleconference attendees and those who submitted written responses with unique identifiers removed. For further details, please see Appendix B and Appendix C.

Background and Approach

- CORE solicited feedback from the TEP on potential use of methods of indirect estimation to overcome existing limitations in demographic and social determinants of health (SDOH) information for calculating disparities.
- Alon Peltz (CORE) introduced current challenges in measuring demographic and SDOH-based disparities and described how the CMS Disparity Methods are currently used for overcoming limitations in directly reported demographic and SDOH data.
- Marc Elliott (RAND Corporation) provided an overview of the Medicare Bayesian Improved Surname Geocoding Method (MBISG) 2.1, one method for indirect estimation of race and ethnicity, including applications of the method.
- The TEP provided feedback on the use of indirect estimation methods for calculating disparity quality measures when demographic information is missing/incomplete.
- The TEP also provided feedback on principles for reporting results and how to examine the intersectionality between race, ethnicity, and other demographic and SDOH factors.
- TEP members who were unable to attend the meeting were sent the meeting recording and invited to provide written feedback following the meeting. Written feedback can be found in Appendix C.
- The Summary of the TEP Input and the Conclusion incorporates feedback provided during the live meeting and from the written responses.

Summary of TEP Input *(including both teleconference and written responses)*

- Following the overview of the MBISG 2.1, the TEP provided general feedback regarding the use of indirect estimation for calculating disparity quality measures

when demographic information is missing or incomplete, and how this calculated information should be used.

- TEP members acknowledged that directly collected demographic information—especially data on race and ethnicity—is the gold-standard but currently is limited and noted that indirect estimation may be a viable way to fill in missing information.
- TEP members differed regarding their comfort with the use of indirect estimation methods for publicly reporting quality measures, while most felt comfort using these methods for exploring disparities and confidential reporting to providers.
- Some TEP members expressing hesitations regarding the use of indirectly estimated race and ethnicity information in the CMS disparity methods. These individuals primarily noted potential limitations to census data, potential discrepancies between estimated and self-reported data, and the possibility of making erroneous inferences based on individuals' names.
- Other TEP members expressing comfort with potential use of indirect estimation methods recognizing the imperfect nature of these tools but cited them being extensively studied and the best available methods for measuring hospital level disparities given highly incomplete data on race and ethnicity.
- Following the overview of how results are reported in the CMS Disparity Methods, the TEP was asked to provide advice on the use of reference groups when comparing disparities in outcomes across two groups, and how to consider reporting on groups defined by the intersection of race and ethnicity with other demographic and social determinants of health.
- TEP members discussed the challenges of grouping heterogeneous populations into a single group for the purposes of reporting quality results and acknowledged the challenges with measuring small sub-populations. Several members identified the importance of examining the intersection of race and ethnicity with other demographic and social factors.

Next Steps

Ongoing Measure Development

CORE will continue to encourage further feedback and questions from TEP members and other relevant stakeholders via email. The presentation of any additional health equity measures or initiatives will be presented in separate, subsequent summary report(s), as those meetings are scheduled.

Conclusion

The TEP provided valuable feedback on the potential application of methods for indirect estimation of race and ethnicity to permit measuring disparities in risk-standardized hospital readmission quality measures when reliable gold-standard, directly reported data, are not available. The TEP has provided important insights regarding balancing the need for timely investigation of health disparities at hospitals through reliance on confidential reporting. While MBISG relies on a combination of address, name, other demographic, and self-reported information to achieve 96-99% concordance, and makes group-level inference rather than person-level classification, there was some sensitivity expressed by some TEP members regarding the use of indirect estimation methods. CORE will take this feedback into account in ongoing measure development activities.

Appendix A. TEP Call Schedule

A list of TEP meetings scheduled during the contract Option Period 2.

TEP Meeting #1

Tuesday, November 16, 2021 – 4:00-6:00PM EST (Zoom Teleconference)

TEP Meeting #2

March 21, 2022 – 9:00-11:00AM EST (Zoom Teleconference)

Appendix B. Detailed Summary of TEP Meeting #2

Health Equity Quality Measurement Technical Expert Panel (TEP) Meeting #2: Using Indirect Estimation to Overcome Missing/Incomplete SDOH and Demographic Data

Minutes

Monday, March 21, 2022, 9:00-11:00 AM ET

Participants:

Technical Expert Panel (TEP) Members: Philip Alberti, PhD; David Baker, MD, MPH, FACP; Ashley Crowley; Tamara Duperval-Brownlee, D'Anna Holmes, Aswita Tan-McGrory, MBA, MSPH.

Yale New Have Health Services Corporation – Center for Outcomes Research and Evaluation (CORE): Susannah Bernheim, MD, MHS; Lear Burton, BS; Liana Fixell, MPH; Demetri Goutos, MBA; Sapha Hassan, MPH; Genne Murphy, MFA; Alon Peltz, MD, MBA, MHS; Eve Rothenberg, BA; Lori Wallace, PhD, MPH; Kojo Danquah-Duah, MPH, PMP; Chengan Du, PhD; Katie Apton, MPH; Rachel Johnson-DeRycke, MPH; Jeph Herrin, PhD; Thushara John, MA, MHA; Leianna Dolce, BS.

RAND Corporation: Marc Elliott, PhD; Steven Martino, PhD.

HealthCare Dynamics International (HCDI): Rachel Smith, Bella Lennon, Sandra Vilevac.

The Center for Medicare & Medicaid Services (CMS): Michelle Schreiber, MD.

Welcome

- Sapha Hassan welcomed all participants and provided information on confidentiality reminders, funding source, CORE overview and the meeting agenda.
- Alon Peltz shared that a key goal of the meeting is to converse in an emotionally safe and equitable environment that all participants feel comfortable contributing to.

Introductions:

- Sandra Vilevac introduced herself as the facilitator and outlined the discussion decorum expectations of appreciating diverse perspectives, communicating respectfully, being attentive of time parameters, using first/preferred names to address others and sharing pronouns if comfortable.
- Sapha briefly introduced the CORE team.
- Marc Elliott and Steven Martino introduced themselves and gave a brief statement about RAND Corporation's subcontracting work with CORE.

- Sandra provided a summary of HCDI's work specializing in healthcare quality improvement and transformation and introduced herself. Additional members of HCDI, including Isabella Lennon and Rachel Smith, introduced themselves as well.
- The TEP members introduced themselves (Philip Alberti, David Baker, Ashley Crowley, Tamarah Duperval-Brownlee, D'Anna Holmes, Aswita Tan-McGrory).

Background and Meeting Goal

- Sandra provided an overview on the TEP's role and purpose as well as member responsibilities.
- Sandra noted the meeting norms for the discussion by outlining the round robin style and use of the Zoom chat feature for additional feedback.

Use of Indirect Estimation for Health Care Quality Measurement

Background

- Alon Peltz presented an overview of the current challenges in measuring demographic and SDOH-based disparities. Alon explained that while directly reported demographic and SDOH data are recognized as the gold standard for health equity measurement, there are accuracy and availability limitations. Alon stated that approaches to improve the quality and availability of self-reported demographic and SDOH data take time to develop, requiring alternative measurement approaches in the interim; this perspective represents a balance between using the data currently available and accepting some degree of inaccuracy, while also acknowledging that the future state of self-reported race and ethnicity is ideal.
- Alon noted the future direction is to examine demographic and SDOH factors as they influence health care outcomes both separately and together.
- Marc Elliott noted that the Social Security Administration (SSA) based Medicare administrative data on race and ethnicity, though self-reported, are often inaccurate and incomplete due to the limited response options previously available for reporting race and ethnicity.
- For persons assigned a social security number before 1980, there were only three response options to the question about race and ethnicity: "Black," "White," or "Other," and greater than 40% of the time, these data misclassify Asian or Pacific Islander beneficiaries and Hispanic beneficiaries as White or Other.
- Marc provided an overview of an approach to make this SSA information better correspond to unconstrained self-report, using the Medicare Bayesian Improved Surname Geocoding Method (MBISG 2.1), and explained that the method improves upon the limited self-reported data available by taking into

consideration a beneficiary's neighborhood composition (residential addresses are linked to the most recent Census race and ethnicity data at the block group level) and other information supplied by beneficiaries.

- Marc emphasized that MBISG does not assign a single race or ethnicity to an individual beneficiary; the method generates a set of six probabilities that a beneficiary would self-identify as: American Indian or Alaska Native (AI/AN), Asian/Pacific Islander (API), Black, Hispanic, Multiracial, or White, and uses these probabilities to make inferences about groups, not individuals. These racial/ethnic categories were used because they align with the response categories currently used by the Census.
- Marc explained that MBISG is the most accurate known method for using indirect estimation to model differences in quality-of-care outcomes among Medicare beneficiaries by race and ethnicity. He also demonstrated the concordance of enrollment data derived from the Social Security Administration (SSA) and MBISG 2.1 with self-reported data across four categories of race and ethnicity.
- Marc noted that until recently, the performance of the MBISG method for AI/AN beneficiaries has not been ideal, but that recent improvements to the method have made estimating performance for that group feasible, as described in a forthcoming article. Marc also acknowledged that the MBISG method does not yet predict multiracial identity at an acceptable level of accuracy.
- Marc acknowledged critiques about indirect estimation have sometimes assumed that that MBISG is primarily used when people have chosen not to report their race or ethnicity. In fact, that is not the case. MBISG is used almost entirely for beneficiaries who were not allowed to report their race and ethnicity in the categories they prefer ("constrained responses") and aims to make an inference about what people would self-report if they were provided the opportunity to give an un-constrained response using contemporary response choices. The method aims to solve a unique problem with Medicare enrollment data which is often collected using historically inaccurate and constrained response options leading to inaccuracy.
- Marc noted that a proposed alternative to MBISG, using Census block group data-geographic stratification alone, is less accurate than MBISG and makes all the assumptions that MBISG makes, plus additional assumptions.
- Marc described an analogous use of indirect estimation by the U.S. Census Bureau; they use imputation at an aggregated level to prevent systematic underrepresentation of groups that include Black and Hispanic people.
- Marc provided some examples of applications of the MBISG method. These applications included national and contract-specific stratified reporting of health care quality information by race and ethnicity and a health equity summary

score to incentivize excellent care to at-risk groups of people enrolled in Medicare Advantage.

TEP Discussion

- Sandra introduced the following discussion question:
- What general feedback do you have regarding the use of indirect estimation for calculating disparity quality measures when demographic information is missing and/or incomplete?
- One TEP member explained that their automatic reaction is to not be in favor of imputation of any kind in any setting, including methods for indirectly estimating demographic variables like race and ethnicity. They also noted that they see some potential value in using Census data for this work but are hesitant about the accuracy of estimates from Census data and the most recent Census considering its limited race and ethnicity categories and response bias. The TEP member also emphasized that trust is a key component and individuals need to be willing to share this information; the more institutions are distrusted, the less likely individuals will want to share personal information. They wondered about imputing information about an individual who chooses not to self-disclose demographic information and the accuracy of imputation methods for the growing multiracial population.
- Marc responded in the chat that the RAND team is exploring ways of including information about undercounting in the Census and investigating ways to improve prediction of multiracial identity.
- A TEP member asked how the use of estimated demographic data connects to the overall goal of quality measurement and the intended impact.
- A TEP member provided this link in the chat: For the Common Good: Data, Trust, and Community Health | Center For Health Justice (aamchealthjustice.org).
- A TEP member highlighted that CMS is going to have no adequate race and ethnicity data for any beneficiaries after 1980 and acknowledged that the indirect estimation method works for "filling in the blanks" but wonders about what the long-term solution will be for collecting directly reported race and ethnicity data. The TEP member noted that due to the growing number of multiracial individuals, CMS needs to figure out how to label race and ethnicity categories in a way that resonates with multiracial people. The TEP member also emphasized that certain populations, specifically Asian and Latino subgroups, are being left out of national conversations related to disparities simply because of a lack of granular data.
- Marc responded in the chat that in the MBISG approach, no one is classified as belonging to any category by a machine or otherwise. Each person's set of estimated probabilities contributes to six group estimates and agreed with

various TEP members about the paramount importance of collecting "gold-standard" self-reported data on race and ethnicity.

- A TEP member commented that as longer-term solutions for demographic data collection are determined, the worst option is to drop people who have missing data and the second worst option is to use inaccurate imputation methods, such as the Census block information. The TEP member stated that the MBISG method appears to be a major advance over other methodologies and emphasized the large improvement in the correlation between self-report for Hispanic and Latino individuals when comparing the SSA variable to MBISG-imputed race and ethnicity data. The TEP member also inquired about how the estimations and correlations are completed without assigning race and ethnicity on the individual level. They acknowledged that this method is a major advance compared to previous methods, but the main challenge is explaining it and gaining trust.
- Marc mentioned in the chat that the OMH report RAND provided shows clear evidence of poor care for Hispanic beneficiaries and pointed out that the analysis that led to that report would not have been possible using the existing SSA variable.
- Marc responded in the chat that with respect to measuring multiracial identity, RAND has developed an approach that tries to use each race endorsed, rather than pooling all multiracial endorsements and explained that RAND is investigating whether they can use this approach with MBISG: A Comparison of Methods for Classifying and Modeling Respond... : Medical Care (lww.com).
- Marc noted in the chat that probabilities can be used directly to make group inferences without classifying individual people and that he can share additional details for those interested. Marc elaborated that this indirectly estimated data can be used to identify populations with better and worse health and health care and noted that several healthcare organizations use the BISG family of methods internally to improve their equity and internal performance.
- A TEP member responded in the chat that even with work done to report on health disparities for the Black population, for example, this population still experiences some of the worst health outcomes in comparison to other groups. The member identified the broad and diverse mechanisms that underlie these disparities and need to better collect this information.
- Sandra thanked the TEP members for their responses and noted that Alon would be providing background on the next discussion question.
- Alon listed the themes of the responses to the first discussion question and acknowledged the importance of the "no data, no problem" point, emphasizing the trade-off needed between the "best available" data and the need to wait for more data and better measurement. Alon also connected this issue to the

question previously asked by a TEP member of what the purpose is of collecting this data. Alon noted that while evidence has consistently shown racial and ethnic disparity in hospital readmissions, measurement/quality reporting to date has been limited at the hospital-level. Alon elaborated that without individual-level data on race and ethnicity, it is not possible to reliably calculate the magnitude of difference at the hospital level among different groups.

- Alon provided the next ten minutes for open discussion and for Marc to provide any additional technical details on indirect estimation.
- A TEP member asked Marc a question about the process for assigning the probabilities of particular race and ethnicities to individuals/models.
- Marc responded that the MBISG model tries to predict the probability that people would choose to identify a certain way when given a full set of options for describing their race and ethnicity. Marc explained that the method augments the limited racial/ethnic information contained in the SSA variable by considering where a person lives a, their first and last names, and other administrative information, such as whether they have used Indian Health Services, to estimate the probability that a person would identify as each of six different races and ethnicities with those probabilities adding up to 100%. He highlighted that the intended use of the method is to make inferences about groups, not individuals. Marc also added that logistic regression is used to determine how these probabilities align with self-report and each person contributes to the estimate for each group. The uncertainty about how a person would identify is accounted for using probabilities (self-reported race and ethnicity, where available, is treated as certainty).
- A TEP member noted concern if it were the case that indirect estimation relied on utilization data in light of historically disadvantaged groups.
- Marc clarified that the approach does not consider the level of utilization; the only utilization variable considered is whether an individual receives care from Indian Health Services, which is predictive of self-reporting being American Indian or Alaska Native.
- Sandra presented the second discussion question: How should disparity measures calculated using indirect estimation be used? E.g., confidential reporting, public reporting and as a basis for paying for performance.
- A TEP member raised a question about the degree to which the MBISG varies from using census data alone to estimate race or ethnicity.
- **Post Meeting Clarification**: studies have demonstrated that using geography alone is less accurate than MBISG, which incorporated additional approaches for ensuring these data are more accurate.

- The TEP member suggested that perhaps it is best to limit reporting of disparity measures that use indirectly estimated data to confidential reporting until remaining concerns about the methodology have been addressed.
- Alon replied to the question asked by the TEP member by acknowledging that different CMS programs have taken different approaches to measuring health disparities, including other initiatives that may have used indirect estimation. He shared that this conversation today specifically focuses only on the hospital readmission measures that CORE applies the CMS Disparity Methods. To date, that work does not use indirect estimation. Initially, CORE only looked at dual eligibility, and CMS has been for several years providing confidential hospital-specific results.
- Alon noted that CMS signaled in the Inpatient Prospective Payment System (IPPS) rule last year a consideration for stakeholder feedback regarding the potential expansion of the method to investigating racial and ethnic disparities in readmissions using indirectly estimated data on race and ethnicity. Alon explained that the goal for this conversation is to receive feedback on confidential versus more expanded reporting when using indirect estimation for the readmission measures.
- Post Meeting Clarification: CMS has been reporting performance on HEDIS (clinical measures) using the MBISG race and ethnicity approach for a number of years for Medicare Advantage Plans: https://www.cms.gov/About-CMS/Agency-Information/OMH/research-and-data/statistics-and-data/stratified-reporting
- A TEP member responded that confidentially reporting these results is very valuable for hospitals since relying on their own data collection for race and ethnicity may not provide them with the same level of accuracy and reliability.
- A TEP member asked for clarification on what the ultimate goal is for calculating these disparities and providing the data to hospitals.
- Michelle Schreiber introduced herself and shared that from the CMS perspective the role of confidential reporting is for CMS to provide information back to hospitals to illuminate any disparities. Michelle emphasized that CMS does not have adequate directly reported patient data on race and ethnicity or other equity related factors and that CMS providing confidential reporting to hospitals, and potentially other facilities, would be a way to start illuminating those differences. Michelle noted that over time there is a desire to make differences in quality transparent and to ultimate link them to payments where possible.
- A TEP member said that from their experience, hospitals likely already know what the disparities are through other means without seeing the data to serve as additional evidence.
- Michelle responded that while many hospitals may know of existing disparities, many also surprisingly do not. Michelle noted the distinction between a hospital

being aware of disparities internally versus knowing that CMS knows of the disparities and that they could potentially affect payment.

- A TEP member agreed that these incentives (monetary or public) would help motivate change, but ideally there would be movement beyond confidential reporting.
- Michelle acknowledged the point made and thanked the group for allowing her to provide input.
- A TEP member asked what will keep facilities accountable to collect this information if incentives are not involved. They voiced concern that monetary values should not be the main driver of this work.
- Marc responded in the chat that there is some evidence of reputational effects of public reporting of quality, and it has been suggested that public reporting of equity might spur improvement even in the absence of monetary incentives.
- A TEP member agreed with previous comments supporting confidential reporting and the awareness that it raises. The TEP member explained they had similar concerns with dual eligibility and confidential reporting regarding lack of intervention after awareness is raised and agreed with the previous point made about keeping the action that follows the awareness at the forefront of the conversation. They provided the framework of health equity science as an example and emphasized concern about making sure that efforts to estimate data do not inadvertently disincentivize further efforts for collecting self-reported data. The TEP member emphasized that the continued goal of self-reported data collection with incentives and appropriate staffing to support it is necessary and that relying strictly on indirect estimation in the long-term is not supported.
- **Post Meeting Clarification**: It is generally accepted that self-report data is gold standard, and the use of indirect and direct methods can be mutually reinforcing. We note that other health care organizations, such as Kaiser, that were among the earliest adopters of indirect methods are the same organizations that now have the highest level of self-reported data collection and use indirect methods as mutually reinforcing to set on equity infrastructure.
- A TEP member recalled a recent conversation about the lack of newborn race and ethnicity data resulting in the mother's race serving as the default even though this method does not accurately account for multiracial individuals. They noted that it is important to incentivize systems to collect this data in some way and for systems to report when data is unknown so that awareness of missing data is increased and brought to the attention of health system leadership to incentivize health systems to improve data collection efforts.
- A TEP member agreed with recently made comments and supported the notion of being transparent between data that is known and unknown. They

acknowledged there is significant work that needs to be done by health systems to make intentional efforts to collect accurate data on race and ethnicity and follow up on the identification of disparities with action. The TEP member noted that the movement that has been made has been led by activism of board and governance – the ability to make that transparent can help other key stakeholders and health systems advance health equity work and data collection.

- A TEP member responded in the chat that they agree with the importance of transparency.
- A TEP member provided a link in the chat to a paper they worked on with Pediatric Health Equity Collaborative addressing the challenges of data collection: https://www.mghdisparitiessolutions.org/_files/ugd/888d39_5834db0cad6746c19f6d46d20938e668.pdf
- Alon acknowledged that this discussion emphasizes the importance of institutional accountability in relation to measure reporting and data collection.

Application to the CMS Disparity Methods

Background

- Alon introduced the last topic: how to overcome measurement challenges so that we can present accurate disparity results to hospitals. He explained that the goal of this effort is to improve care overall as well as have targeted focus on improving outcomes for historically marginalized groups and the goal is to ensure that the measurement supports that balance. Alon described CORE's within-hospital method, which illuminates the difference in care received at a hospital between two groups and the across-hospital method which assesses the quality of care received by a specific group across hospitals. Alon shared that there is a challenge with ensuring sample size sufficiency so that the measures collected are reliable enough to draw accurate conclusions about the hospital's performance.
- Alon elaborated on the within-hospital disparity method and how it requires a pre-determined comparison group. For example, for the current approach measuring quality for dual eligible groups, the rate for dual eligible patients is compared with the rate for non-dual eligible patients to measure the disparity amount. This raises an important question about how to structure comparisons when more than two groups of interest and identified.
- Alon also noted that among the six demographic groups that are the focus of the MBISG, two groups did not meet sample size parameters as explained earlier; and thus, only four potential groups could be measured: non-Latino/non-Hispanic White, non-Latino/non-Hispanic Black, Hispanic/Latino, non-Latino/non-Hispanic Asian American and Pacific Islander. Alon acknowledged

there is an important balance between providing as much information as possible and wanting to make sure we are not overwhelming individuals with too much data. Alon shared that there is ongoing work to develop a single index to more succinctly summarize all data.

- Alon presented a visual demonstrating the distribution of one of the quality measures using MBISG applied to the CMS disparity methods with the within-hospital disparity method comparison for one of the quality measures in the hospital readmission reduction program.
- Alon summarized that we are seeking feedback on a new approach for reporting comparative results, and shared the current conceptual reasons why the within-hospital results are referenced relative to the quality performance for non-Hispanic/non-Latino White beneficiaries, including: to compare to a historically social advantaged group, to acknowledge that health care outcomes are (generally but not always) better for White beneficiaries, to account for sample size limitations due to geographic clustering of racial and ethnic groups in hospitals/regions.
- Alon introduced the next discussion question: In the future we are considering a different approach, what advice do you have for us regarding reference grouping? How should we consider reporting the intersectionality between race and ethnicity and other factors?

TEP Discussion

- A TEP member asked if there have been efforts to create groupings of racial and ethnic groups that are common and available, and wondered if we can work towards that expression for comparison.
- Marc responded in the chat that the paper he previously mentioned in the chat suggests an approach related to intersectional groups.
- A TEP member commented that they are unclear about what is being asked regarding to reference grouping and is going to continue to think about this.
- A TEP member noted that for example, the Asian American population is very heterogenous and that there are multiple languages and levels of income and education within this population. The TEP member noted that reference grouping appears problematic because by looking at the histogram presented, it shows that the Asian American population doing better than they truly are as some groups may be doing better, but others are not doing better, and it is important to parse out these groups especially when looking at the within-hospital disparities. They noted that while comparing to the White population makes sense in terms of their historically privileged status, reference grouping this way also hides disparities and issues within the other populations, especially those that are heterogenous by language and ethnicity.

- A TEP member agreed in the chat and commented that this was true for Black populations as well.
- A TEP member agreed with the prior points made and emphasized that there is heterogeneity in all racial and ethnic groups. In terms of what to show, the TEP member suggested that instead of highlighting the gaps, the absolute numbers should be shown so that local comparisons can be made rather than CMS handling that comparison. The TEP member emphasized that not all disparities are inequities and there are differences in health between groups that are not due to social, racial, or economic injustice. In terms of intersectionality, the TEP member noted that while it is ideal, it is hard to investigate intersectionality from a statistical perspective, especially when there is a lack of data on race and ethnicity and other social needs. The TEP member commented that relying on indirect estimation to explore intersectionality is not realistic as there would be too many variables to compute, which further emphasizes the need for incentivizing valid collection of individual health related social need and SDOH data by health systems and through interoperative methods that would include housing data among other information.
- In fact, indirect methods have been used successfully for intersectional analyses in reports on CMS/OMH's website and in numerous peer-reviewed publications, including intersections of race and ethnicity with urbanicity/rurality, socioeconomic status, and other factors.
- A TEP member agreed with the need for more granular data, but voiced concern of small sample size. They explained that organizations need to be provided the data at the granular level and they need to explore the data even if it is not statistically significant. They made a similar comment related to intersectionality; the smaller the stratified groups become, the harder they are to examine and therefore will need to be presented in a simple way, perhaps through a composite measure.
- Alon acknowledged that the discussion has been thoughtful in balancing the current state with the future state and opened up the discussion to any TEP members to share any additional thoughts, prioritizing those who previously passed on responding.
- A TEP member noted general risk with comparing groups to each other as opposed to the societal norm/standard. They commented that group-wise comparisons do not take into account whether societal resources are equivalent and encouraged the group to be mindful of this.
- Alon acknowledged that being mindful about contextual factors is an important guiding principle and summarized general feedback so far; general comfort with exploring disparities confidentially to help understand where the opportunities for improvement may be, varied levels of comfort and discomfort with using

indirect estimation, thinking about the balance of prescribing categories that we know are inherently inaccurate versus allowing the data to speak for itself and the notion of trust, clear communication and solution orientation.

- A TEP member highlighted that in the area they live in, intersectionality is not spoken about or considered and noted that if it is not even a conversation, there is a long road ahead before implementation can take place and standards can be set for facilities.
- A TEP member appreciated the previous comment and acknowledged that even hospitals and facilities taking the lead on identifying inequities and taking actions to make sure quality of care improves for everyone while also being mindful of narrowing the gap, there is still a lack of trust towards facilities. The TEP member noted that in terms of how we talk about this and how we demonstrate that CMS and health facilities are worthy of that trust by our communities it is important to explore how we make actions safe and how the data can ensure transparency and trust-building that is necessary to ensure that reactions to a solution are met with enthusiasm instead of aggression.
- A TEP member suggested perhaps CMS can leverage this to incentivize organizations (without using penalties or financials) to do a better job about collecting race and ethnicity data and be transparent about what the state of the data is in the absence of indirect estimation. The TEP member emphasized that organizations need to be motivated to do this and based on their experience, 80% of organizations cannot rely on their demographic data that they collected.
- Sandra stated that Sapha would be providing concluding remarks.

Concluding Remarks and Next Steps

- Sapha thanked everyone for joining and for contributing to the discussion and presentation. Lastly, Sapha encouraged the TEP to reach out to the email address provided (CMSdisparitymethods@yale.edu) with any additional feedback or questions and encouraged the group to fill out the post-TEP survey, reflecting both this TEP and the previous TEP in November.
- Sapha acknowledged that post-TEP materials would be sent out within the following weeks.
- Bella provided the link to the post-TEP survey in the Zoom chat.

Appendix C. Written Feedback from TEP Meeting #2

Use of Indirect Estimation for Health Care Quality Measurement

- What general feedback do you have regarding the use of indirect estimation for calculating disparity quality measures when demographic information is missing/incomplete?
- One TEP member raised the point that there could be significant intersectionality between race and ethnicity (e.g., a population who is Latino and Black or Multiracial) and questioned how the MBISG model would accommodate this or whether the likelihoods already consider these types of overlaps.
- In terms of MBISG, a TEP member expressed strong support for the six probabilities approach for the estimation of groups. The TEP member acknowledged that it may be difficult to explain this approach to the public, but that it is an excellent way to supplement missing data.
- A TEP member acknowledged that the estimation will never be as accurate as self-identification. However, the TEP member also emphasized that CMS needs to continue working on instilling trust and developing methods to gather better data. The TEP member agreed with another TEP member's point that indirect estimation is likely the best solution at the moment to handle incomplete datasets.
- A TEP member thanked the RAND team for their presentation on their indirect estimation approach and acknowledged the continual improvements that have been made to the approach to addresses initial limitations in accurately representing certain race and ethnicity groups. The TEP member noted that this model is flawed just like all models, but that it is still useful in the service of democratizing insights across the entire population.
- A TEP member expressed support for another TEP member's ideas and acknowledged that there is a hierarchy of "truth" in representation where self-reported race and ethnicity is the gold standard. The TEP member expressed concerns with approaches that exclude individuals with missing data, and the challenges between incentivizing data collection, and working to encourage response.
- A TEP member noted that in the hierarchy of available data, creating place-based proxies is also one approach, but it should not be endorsed over people-based approaches. The TEP member highlighted that the indirect measure of modeling REL data with individual inputs is preferred than a place-based approach that assigns the race and ethnicity based on zip code or block-level aggregate information.

- A TEP member also agreed with another TEP member that being transparent by showing what is modeled and what is not using and using this information in public reporting to incentivize plans to do better would be one strategy.
- How should disparity quality measures calculated using indirect estimation be used? E.g., confidential reporting, public reporting and pay for performance.
- A TEP member asked if the model has been validated with other datasets that are more or less prone to missing values.
- **Post Response Clarification**: Yes, the MBISG have been applied in datasets with very low and very high levels of missingness and done well in both settings.
- A TEP member noted that disparity quality measures using indirect estimation should be used as much as all other metrics currently in use caveating that it would be important to include a clear explanation of the method behind the measure so that stakeholders can assess its validity according to their own context. The TEP member flagged that the longitudinal analysis of the metrics that use MBISG 2.1 will help demonstrate the validity and usefulness of this approach while better methods are discovered.
- **Post Response Clarification**: Longitudinal studies using these methods are available on CMS/OMH's website.
- A TEP member appreciated Dr. Schreiber's participation during the meeting and felt it conveyed the importance of TEP feedback.
- A TEP member responded that these measures should be considered for confidential reporting, public reporting and pay for performance, but acknowledging all of the caveats previously mentioned.

Application to the CMS Disparity Methods

- In the future we are considering a different approach, what advice do you have for us regarding reference grouping? How should we consider reporting the intersectionality between race and ethnicity and other factors?
- A TEP member supported the idea of using White beneficiaries as the basis for comparison in a simple approach that allows large sample sizes for each broad group but noted that it could be enriched with intersectional dimensions such as socioeconomic status (SES) and perhaps accessibility to health care. The TEP member provided the example of White farmers who may be included in the "privileged" group by SES and race, but do not have easy accessibility to health care facilities and primary health facilities.
- A TEP member asked whether it would be possible to analyze datasets on a website platform using tools such as Tableau which would allow hospitals and other stakeholders to look for the components of intersectionality that matter most to them.

- **Post Response Clarification**: Interactive information on performance is available in several forums, including the Mapping Medicare Disparities and CMS Chartbook. In addition, RAND produces some intersectional analyses, as described above, for CMS/OMH using Medicare Advantage data.
- In terms of reference grouping, a TEP member noted that it is important to be aspirational in order to improve care in the population and that the main focus should be attaining best possible results. The TEP member highlighted that this framework could prevent defaulting to a-priori decisions on which groups are most "advantaged" and that is considered a reference group.
- A TEP member also suggested that perhaps the intersectionality of race and ethnicity with other factors could inform the choice of a reference group, which could serve as an alternative to having an aspirational target like previously mentioned.

Appendix D. List of TEP Members and Information from Initial Convening in May 2018.

Table 2. TEP Member Name, Affiliation, and Location from Initial Convening in May 2018

Name	Title, Organization	Location
Philip Alberti, PhD	Senior Director, Health Equity, Research, and Policy, Association of American Medical Colleges	Washington, DC
David Baker, MD, MPH, FACP	Executive Vice President, Healthcare Quality Evaluation, The Joint Commission	Illinois
Tamarah Duperval-Brownlee, MD, MPH, MBA, FAAFP	Vice President, Care Excellence, Ascension	Missouri
Lynda Flowers, JD, MSN, RN	Senior Strategic Policy Advisor, American Association of Retired Persons	Washington, DC
Jonathan Gleason, MD	Vice President, Clinical Advancement and Patient Safety, Carilion Clinic	Virginia
Shane McBride, MBA	Patient Advocate, Founder and CEO, Healthcare Strategy and Operations Consultant, Chiron Strategy Group, LLC	Massachusetts
Sarita Mohanty, MD, MPH, MBA	Vice President, Care Coordination for Medicaid and Vulnerable Populations, National Medicaid, Kaiser Permanente	California
Kristina Mycek, MS, CAS	Project Lead and Statistician, Consumer Reports	New York
Ninez Ponce, MPP, PhD	Associate Center Director, Center for Health Policy Research, University of California	California
Aswita Tan-McGrory, MBA, MSPH	Deputy Director, Disparities Solutions Center, Massachusetts General Hospital	Massachusetts
Jorge Villegas, PhD, MBA	Patient Advocate, Associate Professor of Business Administration, University of Illinois, College of Business and Management	Illinois
Kimberlydawn Wisdom, MD, MS	Senior Vice President, Community Health and Equity, Chief Diversity, Henry Ford Health System	Michigan

Appendix E. List of RAND, CORE and HCDI Members.

Table 3. Center for Outcomes Research and Evaluation (CORE) Team Members

Name	Role
Katie Apton, MPH	Health Outcomes Researcher
Susannah Bernheim, MD, MHS	Project Director
Lear Burton, BS	Research Support
N. Kojo Danquah-Duah, MPH, PMP	Project Manager
Leianna Dolce, BS	Research Support
Chengan Du, PhD	Analyst
Liana Fixell, MPH	Project Manager
Demetri Goutos, MBA	Project Coordinator
Sapha Hassan, MPH	Project Coordinator*
Jeph Herrin, PhD	Health Services Researcher
Thushara John, MA, MHA	Health Outcomes Researcher
Rachel Johnson-DeRycke, MPH	Senior Health Outcomes Researcher
Shani Legore, BA	Person and Family Engagement Communication Specialist
Zhenqiu Lin, PhD	Director, Data Management and Analytics
Genne Murphy, MFA	Project Coordinator
Alon Peltz, MD, MBA, MHS	Clinical Investigator*
Eve Rothenberg, BA	Research Support
Lisa Suter, MD	Contract Director, Quality Measurement Program
Lori Wallace, PhD, MPH	Health Services Researcher

**presenter*

Table 4. RAND Corporation Team Members

Name	Role
Jack Dembosky, PhD, MPP	Policy Analyst
Marc Elliott, PhD	Senior Principal Researcher*
Jennifer Gildner, MS	Research Programmer
Ann Haas, MS	Statistical Analyst
Steven Martino, PhD	Senior Behavioral Scientist
Nate Orr, MA	Policy Analyst

**presenter*

Table 5. HealthCare Dynamics International (HCDI)

Name	Role
Bella Lennon	Project Manager
Michelle Pascaran	Chief Administrative Officer
Rachel Smith	Chief Program Officer
Sandra Vilevac	Program Manager*

**presenter*