Summary of Technical Expert Panel (TEP) Meeting
October 31, 2022:
Hospital Disparity Index

February 2023

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

This material was prepared by CORE under contract to the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy.

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Background

The Centers for Medicare & Medicaid Services (CMS) contracted with Yale New Haven Health Services Corporation – Center for Outcomes Research and Evaluation (CORE) to develop the Hospital Disparity Index (HDI) to provide a single score summarizing several measurements of disparity in care at a hospital across several social risk categories, including dual eligibility for Medicare and Medicaid, patient race and ethnicity, and area-level indicators of risk. The contract name is Measure & Instrument Development and Support (MIDS): Development, Reevaluation, and Implementation of Outcome/Efficiency Measures for Hospital and Eligible Clinicians, Option Period 3. The contract number is HHSM-75FCMC18D0042.

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 bring expertise in consumer/patient/family caregiver perspectives, clinical content, performance measurement, and healthcare disparities. A schedule of TEP meetings can be found in Appendix A.

This report summarizes the feedback and recommendations received from the TEP during the first meeting in Option Year 3, which focused on the HDI, which was constructed to give a single score that reflects disparities related to multiple measures and social and demographic factors (SDFs). The full meeting minutes can be found in Appendix B and a detailed list of TEP members can be found in Appendix C.

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 through 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 TEP members, three did not agree to reconvene.

Two of the three 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, the October 31, 2022 TEP meeting was attended by eight of the nine members, listed in Table 1. See Appendix C for a full list of the nine 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 September 2022 to December 2023.

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. Attending TEP Member Name, Affiliation, and Location

Name	Organization (title); clinical specialty, if applicable	Location
Philip Alberti, PhD	Association of American Medical Colleges (AAMC) (Founding Director, Center for Health Justice, Senior Director, Health Equity Research and Policy)	Washington, DC
David Baker, MD, MPH, FACP	The Joint Commission (Executive Vice President, Healthcare Quality Evaluation)	Oakbrook Terrace, Illinois
Ashley Crowley	Person and Family Engagement Expert	Quinter, KS
Tamarah Duperval-Brownlee, MD, MPH, MBA, FAAFP	Accenture (Chief Health Officer)	St. Louis, MO
Jonathan Gleason, MD	Prisma Health (Executive Vice President, Chief Clinical Officer)	Greenville, SC
D'Anna Holmes	Person and Family Engagement Expert	Chicago, IL
Aswita Tan-McGrory, MBA, MSPH	Massachusetts General Hospital (Director, Disparities Solutions Center, Administrative Director, Mongan Institute)	Boston, MA

Name	Organization (title); clinical specialty, if applicable	Location
Jorge Villegas, PhD, MBA	University of Illinois at Springfield (Associate Dean and Professor, College of Business and Management); Person and Family Engagement Expert	Springfield, Illinois

TEP Meeting

CORE held a TEP meeting in October 2022 to discuss the development of a hospital equity score, which will summarize existing results regarding hospital outcomes disparities The aim of the TEP is to receive feedback on proposed methodologies and approaches.

This summary report contains a summary of this TEP meeting. This TEP is the first TEP in OP3 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 held.

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 Hospital Disparity Index (HDI).

During the TEP meeting, CORE solicited feedback from the TEP on the usefulness of a disparity index, what types of measures should be in the index, and which methodological approach CORE should use in handling the different SDFs that go into the index.

The TEP meeting presenters were Leianna Dolce, Amena Keshawarz, Megan Rushkin, and Jeph Herrin (CORE). 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.

Background and Approach

Presenting Background

- CORE presented on the background, components, and methods of the HDI.
- CORE stated the objective of the HDI is to construct a single disparity score that reflects disparities related to multiple measures and multiple SDFs. The intent is to synthesize information across multiple disparity metrics. This could give a chance to identify hospitals that uniformly do well in providing equitable care for patients on these measures.

Soliciting Feedback

- CORE solicited feedback from the TEP on if they thought a single disparity summary score would provide useful information, and if there are any methodological considerations that affect the useability.
- TEP members were concerned with the use of readmissions as an outcome.
- CORE solicited feedback on if TEP members thought the index should include other types of measures in addition to the currently included readmission measures.
- TEP members suggested process measures and primary care or outpatient settings may be beneficial for measurement.

Presenting Approaches

- CORE presented two approaches for measuring SDFs being considered (i.e., multifactor and single-factor approaches) and calculations and steps for each approach.
- CORE explained the concerns with using a multifactor approach include potential double counting of patients and having a small number of patients with specific SDFs that make it difficult to measure disparities across hospitals. The single-factor approach assigns each patient dichotomous value of "any SDF" and then the scores are pooled across each measure and combined to calculate an overall index score.
- CORE presented comparisons between the multifactor and single-factor approaches using correlations and summary values across hospital characteristics.

Soliciting Feedback

- CORE solicited feedback on if there are any specific index uses that the multifactor approach is better suited for compared to the single-factor approach and vice versa.
- The TEP provided feedback on the use of readmission measures within the index.
- The TEP provided feedback of some suggestions for other measures that would be valuable to have within the index.
- The TEP provided feedback on the two approaches for handling the SDFs within the index.
- TEP members who were unable to attend the meeting were sent the meeting recording and invited to provide written feedback following the meeting. All TEP members were invited to provide additional feedback via a Qualtrics survey with five targeted follow up questions and a section for additional comments.

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

Concerns

- TEP members shared concerns over readmission measures, noting that they are a complex health outcome.
- TEP members shared concerns over comparing hospitals using the Across-Hospital Disparity Method, noting that hospitals serve very different communities.
- TEP members had positive and negative responses regarding the usefulness of the index with some expression concern that one number that summarizing information could make it difficult for hospitals to know how to reduce disparities.

Suggestions and Other Feedback

- TEP members suggested looking at process and less complex measures to add into the index, as well as patient-centered measures that would improve patient experience.
- Following the overview of the two SDF approaches, the TEP provided general feedback on the two methods including noting the complexity of the methods.
- Some TEP members voiced some support for the single factor approach due it its simplicity and ability to include more hospitals.
- The TEP gave feedback on the direction in which the index is scored, i.e. that a high HDI score meant lower levels of disparity and recommended changing that.

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 useability of a single score that summarizes several measures of disparity across various social and demographic factors. The TEP gave feedback on the current measures included in the index, as well as what measures to include in the future. Two approaches to handling multiple social and demographic factors were presented, the multifactor and single-factor approach, and TEP members gave feedback for both approaches with some support for the single-factor approach. The TEP voiced concerns about comparing hospitals with the Across-Hospital Disparity Method. CORE will take this feedback into account in ongoing measure development activities.

Appendix A. TEP Call Schedule

A list of TEP meetings scheduled.

TEP Meeting #1

Monday, October 31, 2022 – 2:00-4:00PM EDT (Zoom Teleconference)

TEP Meeting #2

To be determined based on Yale CORE need and TEP availability

Appendix B. Detailed Summary of OP3 TEP Meeting #1

Date:
Monday, October 31, 2022, 2:00-4:00 PM ET

Participants:
Technical Expert Panel (TEP) Members: Philip Alberti, David Baker, Ashley Crowley, Tamarah Duperval-Brownlee, Jonathan Gleason, D'Anna Holmes, Aswita Tan-McGrory, Jorge Villegas

Yale New Have Health Services Corporation – Center for Outcomes Research and Evaluation (CORE): Susannah Bernheim, MD, MHS; Amena Keshawarz, PhD; Megan Rushkin, MPH; Lear Burton, BS; Kojo Danquah-Duah, MPH, PMP; Chengan Du, PhD; Zhenqiu Lin, PhD; Haiqun Lin, PhD; Si Zhou, MS; Jeph Herrin, PhD; Leianna Dolce, BS

HealthCare Dynamics International (HCDI): Leah Chambers, MHA; Achaia Logan, BS

The Center for Medicare & Medicaid Services (CMS): Vinitha Meyyur, PhD; Raquel Myers, PhD, JD, MPH; Michelle Schreiber, MD; Julia Venanzi, MPH; Tiffany Wiggins, MD, MPH; Stephanie Clark, BS

Welcome

- Ms. Leianna Dolce welcomed all participants and provided information on confidentiality and funding source. She provided an overview and the meeting agenda.

Introduction

- Ms. Leah Chambers 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.
- Ms. Dolce briefly introduced the CORE team and TEP Role.
- The TEP members introduced themselves (Philip Alberti, David Baker, Ashley Crowley, Tamarah Duperval-Brownlee, Jonathan Gleason, D'Anna Holmes, Aswita Tan-McGrory, Jorge Villegas).

Background

- Dr. Amena Keshawarz presented background on the Hospital Disparity Index (HDI) and explained the evolving language behind social and demographic factors (SDFs). Dr. Keshawarz explained that the terminology includes both "drivers of health" and immutable characteristics associated with structural discrimination.
- Dr. Keshawarz presented how the HDI methods use the CMS Disparity Methods and explained how the HDI was developed to include the Within-Hospital Disparity Method

and the Across-Hospital Disparity Method. Dr. Keshawarz explained the differences between those two methods.

- Dr. Keshawarz presented the objective of the HDI is to construct a single disparity score that reflects disparities related to multiple measures and multiple SDFs. Dr. Keshawarz continued to explain the intent is to synthesize information across multiple disparity metrics. This could give a chance to identify hospitals that uniformly do well in providing equitable care for patients on these measures.
- Dr. Susannah Bernheim stated there is a benefit to both the Within-Hospital and the Across-Hospital Disparity Methods and explained that later both pros and cons will be discussed.
- Dr. Keshawarz presented the components to the HDI. Dr. Keshawarz reiterated the goal of the TEP is to discuss the approach to HDI methodology, and that currently the components included in calculating the HDI include readmission measures and SDFs that are currently available during this stage of development. SDFs included in the index are dual eligibility status for Medicare and Medicaid, area level socioeconomic status data as calculated by the Area Deprivation Index (ADI) score, and indirectly estimated race and ethnicity (race and ethnicity is only used for the hospital wide readmission measure, not the condition specific measures).
- Dr. Keshawarz explained that although the Yale CORE team is developing the HDI methodology, at this point it is unknown how it may be used or implemented in the future, but the team welcomes thoughts from the TEP.

Initial Discussion Questions

- Dr. Keshawarz introduced the following discussion questions: Do you think a single disparity summary score would provide useful information to hospitals and patients? Why/ why not? Would certain methodological considerations affect the useability?
    - A TEP member asked if there was a reason readmission score was chosen for the HDI.
        - Dr. Keshawarz responded that the HDI was developed using readmission measures because hospitals currently confidentially receive stratified results on these readmission measures. She stated that the Yale CORE team would like feedback for more measures that may be useful to the HDI Methodology, but due to complexity of measures, this is a starting point in the development of this specific methodology.
- A TEP member commented that it's hard for patients to get a follow-up appointment within the next six months, therefore the system may be a contributing factor for readmission rates. Also emphasized the complexity of readmission rate factors.
    - Dr. Bernheim responded in agreement with the TEP member and asked if there were any thoughts on the benefit of having an aggregation of an individual's disparity results-- not just in the case of the readmission program.

- A TEP member responded that it would depend on the measures. Data collection is still variable and certain hospitals pay more attention to certain measures than others.
- A TEP member explained an approach using a measurement, inform intervention to action and address inequities that have been measured. A summary score does not allow understanding of where the action should be placed.
    - Dr. Bernheim thanked the TEP member and agreed that there is a benefit to individual measure scores providing information to providers, although the summary score may have a benefit for aggregating information.
- A TEP member noted that hospitals may serve different communities that vary with respect to the resources that are available, and this should be taken into consideration when using the Across-Hospital method to compare hospitals.
- A TEP member reiterated readmissions are an extremely complex health outcome, and hospital comparison is challenging.
- A TEP member asked a question in the chat: What exactly are we expecting patients to get out of this? Thinking about how the score is based on readmissions.
    - Dr. Bernheim explained CMS reports results for many measures that hospitals and patients then have to sort through, And the question is whether it would be useful to have a single indicator in the future that aggregates results, both for providers and patients.
- Dr. Keshawarz introduced another question: Do you think the index should include other types of measures in addition to the currently included readmission measures? Why/why not?
    - A TEP member responded that looking at process measures that are less complex; for example, UTIs, falls etc. would be more actionable than readmission measures.
    - A TEP member asked a question: Is this an in-patient or ambulatory measure?
        - Dr. Bernheim explained that the measure is based on in-patient readmissions.
    - A TEP member expressed that measuring disparities in primary care would be more important; using patient reported outcomes, or measures of access to care would also be important.
    - A TEP member expressed that in-patient readmission measures are seemingly longitudinal when compared to outpatient. A recommendation would be to keep readmissions separate from internal outcomes as it would be difficult to measure.
    - A TEP member expressed that CMS should be more innovative in trying to understand what health disparities means to patients. Health disparities do not capture some of the experiences marginalized patients are having in healthcare settings. Th TEP member continued to express that from a patient perspective,

health disparity does not mean how many falls or readmission rates; they mentioned things like waiting times.

- Dr. Jeph Herrin recapped questions and concerns TEP members had regarding usefulness of the HDI and having one number that summarizes information will make it difficult for hospitals to know how to reduce disparities. Also, concerns with social risk factors and types of measures. Readmission is difficult to measure due to its complex outcome that is affected by many factors. It was recommended to look at process measures and/or less complex measures, patient-centered measures that would improve patient experience.
- Dr. Bernheim discussed the transition into a methodological discussion in the context of an index that combines readmission measures.

Methods

- Dr. Herrin presented the key elements for the HDI. Also, advised TEP members to redirect focus from the outcome of readmissions and social and demographic risk factors used, but to the idea of combining different disparity measures for different outcomes.
- Dr. Herrin continued to explain the standardized within method results for all stratification factors utilizing standardized risk differences (SRD).
- Dr. Herrin explained the standardization of all disparity metrics.
- Dr. Herrin presented two approaches for measuring SDFs being considered (i.e., multifactor, and single-factor approaches) and calculations and steps for each approach.
    - The multifactor approach pools all within and across scores separately for each measure and for each SDF. These scores are then pooled across each measure to obtain a single measure HDI, and then combined to calculate an overall HDI score.
    - The single-factor method assigns each patient a dichotomous value of “any SDF” if dual eligible, ADI >= 85, or a probability of white race < 0.05, or “no SDF”. This single dichotomous variable is then used in calculating within- and across-scores separately for each measure, and then these scores are pooled across each measure and combined to calculate an overall HDI score.
- Dr. Herrin explained the concerns with using a multifactor approach are including potential double counting of patients and having a small number of patients with the specific SDF that made it difficult to measure disparities across hospitals; these concerns led to the development of the single-factor approach.
    - Dr. Herrin presented the multifactor approach calculation steps and explained the flowchart that followed.
    - Dr. Herrin clarified that the hospital wide readmission measure has five cohorts that are combined into a single measure. However, the Yale CORE team treated the five cohorts separately due to simplicity.

- Dr. Herrin presented the single-factor approach calculations steps and explained the flowchart that followed.

Results

- Ms. Megan Rushkin presented the multifactor approach (approach one) and the single-factor approach (approach two) and provided information about the number of included measures and hospitals, as well as the final distributions of the HDI for each approach.
- Ms. Rushkin presented comparisons between the multifactor and single-factor approaches using correlations and summary values across hospital characteristics.
    - In general, there were similar patterns by hospital characteristics among hospitals that can be calculated for both approaches.
    - The two approaches were positively correlated with a correlation coefficient r of 0.59.
    - Ms. Rushkin explained the inclusion criteria for hospitals for both approaches. Hospitals are eligible for inclusion using the multifactor approach if they have both within and across hospital disparity scores for dual eligibility and Area Deprivation Index (ADI) for the condition-specific readmission measures. Hospitals are eligible for inclusion using the single-factor method if they have at least one patient with any chosen SDF, and at least one patient with no chosen SDFs.
- Ms. Rushkin presented two tables comparing an example high HDI hospital with an example low HDI hospital for the single-factor and multifactor approaches respectively, explaining that the high equity hospital (i.e., low HDI score) performed better on nearly all individual readmission measures.

Methods Discussion Questions

- Dr. Herrin introduced the following discussion questions: (a) Are there any specific index uses you think the multifactor approach is better suited for compared to the single-factor approach? (b) Are there any specific index uses you think the single-factor approach is better suited for, compared to the multifactor approach?
    - A TEP member noted that it would be important to know more about the patients and hospitals that were omitted by each approach.
    - A TEP member commented that an index based on a single-factor approach would make it harder for a hospital to know the best course of action.
    - A TEP member commented that both approaches were hard to follow.
        - Dr. Bernheim responded that the single-factor approach allows us to include more hospitals and simplify categorization.
    - A TEP member restated that a high HDI score means fewer disparities, and their confusion with that concept.

- A TEP member suggested that intersectionality could be modelled directly.
- A TEP member strongly opposed combining within and across metrics into a single score.
- A TEP member commented on the value of simplicity, and that the single-factor approach can be more easily explained and allow hospital administrations to dig into their results and identify problems and solutions for improving equity. They also stated there is more variability in the single-factor approach, which is important for separating hospitals.
- A TEP member commented, it would be important for the hospital to be able to recreate the index, and that both approaches would be difficult for a hospital to implement.
    - Dr. Bernheim noted that for any approach there would be both a technical document and freely available SAS code for recreating the index.

Concluding Remarks and Next Steps

- Ms. Dolce thanked everyone and explained that a brief Qualtrics survey containing the questions introduced in the following three sides and space for additional comments will be sent following the meeting. Ms. Dolce also encouraged all TEP members to reach out with any additional feedback or questions via email at: cmsdisparitymethods@yale.edu.

Appendix C. List of TEP Members and Information

Table 2. TEP Member Name, Affiliation, and Location

Name	Organization (title); clinical specialty, if applicable	Location
Philip Alberti, PhD	Association of American Medical Colleges (AAMC) (Founding Director, Center for Health Justice, Senior Director, Health Equity Research and Policy)	Washington, DC
David Baker, MD, MPH, FACP	The Joint Commission (Executive Vice President, Healthcare Quality Evaluation)	Oakbrook Terrace, IL
Ashley Crowley	Person and Family Engagement Expert	Quinter, KS
Tamarah Duperval-Brownlee, MD, MPH, MBA, FAAFP	Accenture (Chief Health Officer)	St. Louis, MO
Jonathan Gleason, MD	Prisma Health (Executive Vice President, Chief Clinical Officer)	Greenville, SC
D'Anna Holmes	Person and Family Engagement Expert	Chicago, IL
Ninez Ponce, PhD, MPP	University of California, Los Angeles (UCLA) (Endowed Chair in Health Policy and Management, Principal Investigator, California Health Interview Survey, Professor (Department of Health Policy and Management)	Los Angeles, CA
Aswita Tan-McGrory, MBA, MSPH	Massachusetts General Hospital (Director, Disparities Solutions Center, Administrative Director, Mongan Institute)	Boston, MA
Jorge Villegas, PhD, MBA	University of Illinois at Springfield (Associate Dean and Professor, College of Business and Management); Person and Family Engagement Expert	Springfield, Illinois

Appendix D. List of CORE Team Members.

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

Name	Role
Susannah Bernheim, MD, MHS	Project Director
Lear Burton, BS	Research Support
N. Kojo Danquah-Duah, MPH, PMP	Project Manager
Leianna Dolce, BS	Project Coordinator
Chengan Du, PhD	Analyst
Jeph Herrin, PhD	Health Services Researcher
Amena Keshawarz, PhD	Project Lead
Mariel Thottam, MS, BCBA	Person and Family Engagement Communication Specialist
Ariel Williams, BS	Person and Family Engagement Communication Specialist
Haiqun Lin, MD, PhD	Analyst
Zhenqiu Lin, PhD	Director, Data Management and Analytics
Megan Rushkin, MPH	Analyst
Lisa Suter, MD	Contract Director, Quality Measurement Program
Si Zhou, MS	Analyst
Leah Chambers	HCDI Consultant
Achaia Logan	HCDI Consultant