NATIONAL QUALITY FORUM

TO: Expert Panel on Risk Adjustment and SES
FR: Karen Pace and Suzanne Theberge
SU: Briefing for in-person meeting January 15-16, 2014
DA: January 9, 2014

This memo provides information on the Risk Adjustment and SES Project and the upcoming meeting on January 15-16. The memo outlines the key topics and issues that the Expert Panel will need to address.

Actions

- Review this memo (pages 1-11) prior to the meeting and be prepared to discuss the issues and make recommendations.
- Review suggested references (see annotated list of references). *If you are unable to review all of them, please scan the list of references and abstracts and select those that you think are most relevant for which you can share key points during the Panel's discussions*.
- Review the agenda.
- Bring your laptop computer to the meeting so that you can access materials that you have downloaded or access on SharePoint.

Contents

Project on Risk Adjustment and SES or other Sociodemographic Factors

Purpose

The purpose of this project is to:

- Identify and examine the issues related to risk adjusting outcome and resource use performance measures for socioeconomic status (SES) or other sociodemographic factors such as race/ethnicity.
- Make recommendations regarding if, when, for what, and how outcome and resource use performance measures should be adjusted for SES or other sociodemographic factors. Make recommendations for NQF's endorsement criteria for outcome performance measures.

Scope

This project is focused on:

- Outcome performance measures as defined below
- Outcome performance measures considered for accountability applications as defined below
- Consideration of SES or other sociodemographic variables as factors for risk adjustment

It is not focused on:

- Specific performance measures (though some will be used for illustration)
- Adjustments for determining payment for services such as capitated payments
- Selecting a particular risk model

Deliverable

The Expert Panel's recommendations are expected to be in the form of principles, best practices, criteria and analyses to justify including or excluding SES or other sociodemographic factors.

Approach

A multistakeholder Expert Panel with a variety of experience related to outcome performance measurement and disparities will review the issues and make specific recommendations regarding the inclusion of SES or other sociodemographic variables in risk adjustment models for outcome performance measures. The expert panel's recommendations will be posted for public comment and final recommendations will be submitted for approval by the Consensus Standards Approval Committee (CSAC) and Board of Directors.

Definitions

The following definitions will be used to facilitate common understanding.

Accountability Applications – Use of performance results about identifiable, accountable entities to make judgments and decisions as a consequence of performance, such as reward, recognition, punishment, payment, or selection (e.g., public reporting, accreditation, licensure, professional certification, health information technology incentives, performance-based payment, network inclusion/exclusion).[1]

Health Disparity – Healthy People 2020 defines a health disparity as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to

health based on their racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion."

Healthcare disparity – Differences in health care quality, access, and outcomes adversely affecting members of racial and ethnic minority groups and socially disadvantaged populations. [2]

Outcome – the result of providing healthcare. ***Throughout this document, the term outcome will be used to broadly include the following types of outcomes:***

- Quality outcomes include:
  - Health outcome is the health status of a patient (or change in health status) resulting from healthcare—desirable or adverse.
  - In some situations, resource use may be considered a proxy for a health state (e.g., hospitalization may represent deterioration in health status).
  - Intermediate clinical outcome is a change in physiologic state that leads to a longer-term health outcome (e.g., hemoglobin, blood pressure).
  - Patient-reported outcome is any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else. The domains of PROs include health-related quality of life/functional status, symptom/symptom burden, experience with care (including engagement, activation), and health-related behaviors.[3]
- Economic outcomes include the cost and resource use associated with providing healthcare services. (Although efficiency is considered one aspect of quality, cost and resource use alone without consideration of quality is not considered a quality performance measure.)

Performance measure – Numeric quantification of healthcare quality for a designated accountable entity such as hospital, health plan, nursing home, clinician, etc. (NQF measure testing report)

Risk Adjustment – The process of controlling or accounting for patient-related factors before examining outcomes of care, regardless of context.[4] (Generally, process performance measures are not risk-adjusted.)

Social Determinants of Health – Healthy People 2020 defines social determinants of health as conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Conditions (e.g., social, economic, and physical) in these various environments and settings (e.g., school, church, workplace, and neighborhood) have been referred to as "place." In addition to the more material attributes of "place," the patterns of social engagement and sense of security and well-being are also affected by where people live. Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins.

Social disadvantage – Braveman et al define it as "Unfavorable social, economic, or political conditions that some groups of people systematically experience based on their relative position in social hierarchies. [5]

Sociodemographic – Broad term referring to demographic and socioeconomic factors.

Socioeconomic Status – Broadly conceptualized as one's position in the social structure that encompasses the notions of class, status, and power.[6] Socioeconomic status has traditionally been defined and measured by education, income, and occupation.[7]

Background

Outcomes as defined above are considered important for performance measurement because they often are the reasons for seeking and providing healthcare (e.g., to survive, improve or maintain function, relieve distressing symptoms) and are integrative of all care received. NQF endorses performance measures that are suitable for both performance improvement and accountability applications as demonstrated by meeting a standard set of evaluation criteria. Because outcomes can be influenced by factors other than the healthcare received, the criteria for validity include risk adjustment for "patient factors that influence the measured outcome (but not factors related to disparities in care or the quality of care) and are present at start of care". Current NQF guidance indicates that factors related to disparities, such as SES and race, should not be included in risk models; rather outcome measures should be stratified by such factors. However, specific guidance for stratification has not been developed and examples of such stratification in accountability applications have not been identified.

Endorsement of outcome performance measures for use in accountability applications has become increasingly controversial over the issue of adjusting outcome performance measures for patients' socioeconomic (SES). Recent examples are #1789: Hospital-wide all-cause unplanned readmission (See the Readmissions Project, section titled Candidate Consensus Standards Review) and #2158-Medicare Spending per Beneficiary Measure (MSBP) (See Cost and Resource Use Phase 1, section titled Pre-Meeting Member Comment, Phase 1). Risk adjusting outcome performance measures to account for differences in patient health status and clinical factors (e.g., co-morbidities, severity of illness) present at the start of care is widely accepted; however, adjusting for SES is more controversial. Although the impact of SES on health and healthcare has been well-documented, [8-10] there are at least two divergent views regarding SES in risk adjustment models for outcome performance measures:

> 1) Adjusting for SES is necessary for fair comparisons of providers, particularly those who care for disadvantaged populations because the effect of SES is beyond the control and responsibility of the healthcare system. For example, Satin [11] states "Asking clinics and physicians who work primarily with poor patient populations to achieve the same results as those working with wealthier populations is effectively asking for more, and in some cases, impossibly more from these providers. The results of such unrealistic demands may be fewer and fewer providers willing to serve the already underserved."
>
> 2) Adjusting for SES should not be done because it obscures disparities and implies that differences in outcomes based on SES are expected and accepted. For example, Iezoni [4, p. 21] states: "For some purposes, ethical concerns raise questions about whether and how to risk-adjust. Such situations arise when persons with certain attributes (e.g., gender, race, SES) that might be potential risk factors for a given outcome simultaneously face the likelihood of receiving substandard care because of those attributes."

Assumptions, Values, Core Principles

Although sound methods, data, and evidence provide the foundation, the question of whether to risk adjust outcomes for SES is more than a methodological or evidence problem. Perspectives on risk adjusting outcome performance measures for SES or other sociodemographic factors may be influenced by competing priorities and various assumptions, values, or biases. Identifying and openly discussing various perspectives will be essential to achieving the project goals. Being mindful of different assumptions and values will also be useful to recognizing potential unintended consequences of potential recommendations.

Core Principles

In order to reach agreement on recommendations, it will be important to first identify some core principles to provide a common ground for the Expert Panel's deliberations. The core principles can be reviewed as needed if the Panel reaches an impasse in making recommendations. The principles are not intended to imply a particular direction for recommendations related to risk adjustment for SES; rather they should represent a baseline of agreement on the key issues that must be considered in making recommendations. On the first call, the Expert Panel agreed on the following core principles:

1. Outcomes may be influenced by patient health status/clinical and sociodemographic factors (patient and community) in addition to healthcare services, treatments and interventions.
2. Outcome performance measures used in accountability applications need to be adjusted for differences in case mix to avoid incorrect inferences about performance. (Note that this principle does not identify which risk factors are appropriate and a how model is applied.)
3. Disparities in health and healthcare should be identified and reduced.
4. Performance measurement should not increase disparities in health and healthcare.
5. Risk adjustment is constrained by data limitations and data collection burden.

Actions

- At the in-person meeting, during introductions and disclosure of interests, Expert Panel members will be asked to share their current perspective on the topic of including SES or other sociodemographic factors in risk adjusting outcome performance measures.
- All panel members are asked to suspend judgment until all the issues are fully examined.
- All panel members are asked to actively pursue solutions and recommendations that accommodate the core principles.

Outcome Performance Measures and Risk Adjustment – the Basics

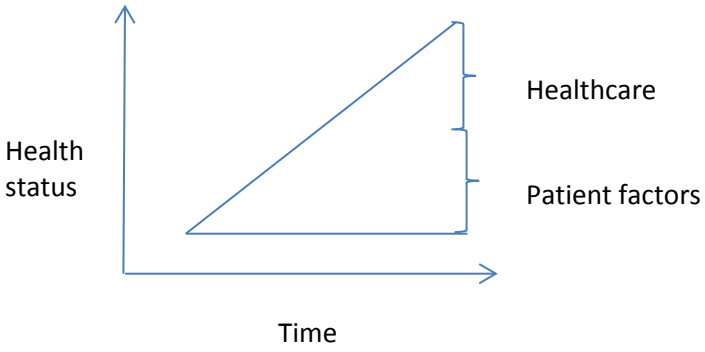
Outcome performance measures aggregate the data on individual patient outcomes for an accountable entity (e.g., hospital, clinician, nursing home). Outcomes generally are a function of several inputs including patient factors, treatment effectiveness, quality of care, and random events. This can be represented as an equation:

> **Outcomes = *f*** (intrinsic patient factors, treatment effectiveness, quality of care, random chance)
> [4, p. 5]

This is a simplified description in that outcomes are not only a function of these factors but represent the complex interaction of these factors.

Outcomes often represent a change in some health status indicator (e.g., function, pain) over time; that change can be due to both healthcare and patient factors as represented in Figure 1. Some outcomes, such as hospital readmission, are considered a proxy for a change in health status.

Figure 1. Outcome as a Change Over Time



The ultimate goal of performance measurement is to facilitate improvement in healthcare and health. Measurement is used to identify differences in quality of healthcare and identify opportunities for improvement. Unlike many process performance measures, which are focused on care practices that should be delivered to all patients in a specified target population, the goal for outcome performance may not be 100% (or 0%). Due to the limits of science, not all patients will achieve the outcome (e.g., survive), and the "right" rate may not be known. Consequently, it is through comparison across providers that opportunities for improvement are identified. Providers with superior risk-adjusted outcomes set the goal for what is possible to achieve. In order for performance results to be meaningful and valid for identifying differences in performance across providers, outcome performance measures must be adjusted for different levels of risk in the patients served.

Risk Factors

Iezzoni [4, p. 31] identified the major categories for the potential patient factors that may influence outcomes to include the following. This is not a comprehensive list and concepts may overlap. Additionally, not all factors may affect every outcome.

- Genetics (e.g., predisposition to conditions or health-related behaviors)
- Demographic characteristics (e.g., age, sex, race, ethnicity, primary language)
- Clinical factors (diagnoses, conditions and severity; physiologic stability; physical, mental, cognitive function)
- Psychosocial factors, socioeconomic, and environmental factors (e.g., family, education, occupation, economic resources, health insurance, neighborhood)
- Health-related behaviors and activities (tobacco, diet, physical activity)
- Quality of life, attitudes, and perceptions (health-related quality of life and overall health status; preferences; cultural, religious beliefs and behavior)

Selection of risk factors is not merely an empirical exercise. That is, an empirical association with the outcome of interest alone is not sufficient for use as a risk factor. The final selection of factors for risk adjusting outcome performance measures involves both conceptual and empirical considerations such as the following.

- Clinical/conceptual relationship with the outcome of interest

- Empirical association with the outcome of interest
- Contribution of unique variation (i.e., not redundant or highly correlated with another risk factor)
- Not confounded with quality of care – risk factors should be
    - present at the start of care and
    - should not represent the quality of care provided (e.g., treatments, expertise of staff)
- Resistant to manipulation or gaming – generally, a diagnosis or assessment data (e.g., functional status score) is considered less susceptible to manipulation than a clinical procedure or treatment (e.g., providing physical therapy).
- Accurate data that can be reliably captured – data limitations often represent a practical constraint to what factors are included in risk models.
- Improvement in risk model metrics (e.g., discrimination, calibration) and sustained with cross-validation

Methods

Common methods for risk adjustment include:[4]

- Stratification of outcome results for patients in different risk categories within each accountable entity. Risk categories could be constructed based on SES and/or other sociodemographic variables.
- Comparison of observed to expected outcomes for the accountable entity
    - Indirect standardization where the expected number of outcomes are determined by applying stratum-specific rates determined from all patients to the number of cases in each stratum for each provider
    - Extension to multivariable statistical models
- Combination of statistical risk model and stratification.

Another possibility is to stratify organizations by the proportion of their patients with certain characteristics such as SES (*we will refer to as* ***organizational stratification***). MedPAC[12] recently proposed a method specifically related to SES and hospital readmission rates is to create comparison groups for hospitals based on the proportion of low income individuals served. Readmission rates would be risk-adjusted based on clinical and health status factors, but for purposes of accountability, hospital performance would be compared to similar hospitals in terms of proportion of low income individuals in their case mix.

It is important to recognize when assessing risk models used for outcome performance measures, the metrics such as C-statistic or R-squared are not necessarily expected to achieve comparable values as models that include and are intended to explain the contribution of all variables that influence the outcome. In risk models, the independent variables are purposely limited to patient risk factors; variables related to care processes or structures are not included so that differences in risk-adjusted outcome rates can be attributed to differences in the care provided, i.e., differences in quality.

Statistical modeling to estimate the provider score on the outcome involves choosing from among a variety of options including:

- Random effects with shrinkage estimators vs. fixed effects
- Shrinking toward the overall average or some other benchmark (e.g., average of “like” providers
- Hierarchical models

- Bayesian analysis

The various methods may have different trade-offs and policy implications. For example, fixed effects models identify more outliers, some of which will be false positives; whereas, random effects models identify fewer outliers, some of which will be false negatives.[13]

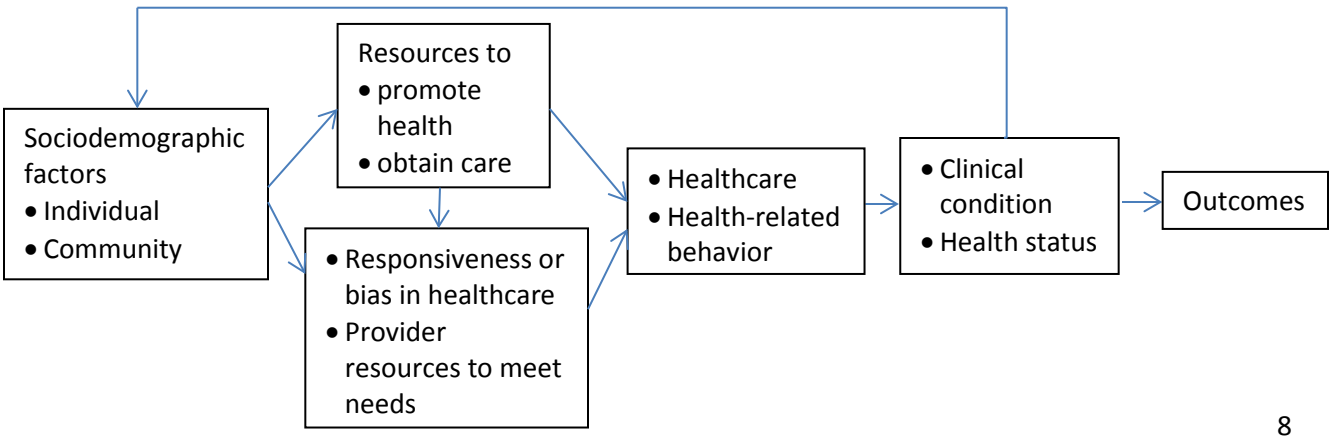
Sociodemographic Factors

The term *sociodemographic* will be used to include a variety of socioeconomic (e.g., income, education, occupation) and demographic factors (age, race, ethnicity, primary language). A substantial body of research has found that health and healthcare are influenced by a variety of demographic and socioeconomic factors.[8-10] The causes of healthcare disparities are multi-factorial. To varying extents, they potentially reflect bias and inequities in resources, at varying levels, e.g. patient, provider, and organization.

The mechanism(s) for the effect of sociodemographic factors on health status and outcomes may not always be clear, but some possibilities are depicted in the simplified pathways depicted in Figure 2.[7, 14] Although creating a definitive causal pathway is beyond the scope of this project, the mechanisms may have implications for potential recommendations. *For example, rather than SES, are there more proximal variables that directly affect outcomes? If SES affects health status and clinical conditions, is including those variables sufficient? To what extent will including clinical and health status factors (e.g., co-morbidity, health status, severity of illness) in the risk model account for the effect of the sociodemographic variables?*

One potential mechanism is that sociodemographic factors such as income, education, and health literacy could affect the availability of resources to promote or maintain health (e.g., knowledge of health promotion or how to manage self-care, insurance coverage, ability to pay for non-covered healthcare expenses, access to a usual source of care). Another potential and simultaneous mechanism may be the implicit biases or assumptions on the part of healthcare providers that influence their interactions with, and the care options given to, patients with different characteristics (e.g., race/ethnicity), thus increasing the likelihood of receiving substandard care. Clinical conditions and health status also could have a potential impact on sociodemographic factors, particularly on income and occupation. Another complexity is that some sociodemographic factors operate both in the present but also have a cumulative effect across the life course through a variety of mechanisms including early development and epigenetic effects.

Figure 2. Sociodemographic Factors and Outcomes



Community and patient level sociodemographic characteristics also influence provider resources to deliver care and interact with patient-level resources. For example, providers who serve an uninsured or under-insured population might have fewer resources for discharge planning or post-discharge follow-up, while the patients being discharged might lack the resources (e.g., cannot afford medications) necessary to prevent early readmission. A related issue is that of adjusting payments for services provided (e.g., capitation) to account for greater needs of patients who are socially disadvantaged. Some examples of this type of payment adjustment are 1) hospital payment adjustment disproportionate share (DSH) of certain low income patients (see overview of Medicare hospital payment); and 2) inclusion of Medicaid status in case-mix adjustment for Medicare Advantage plans (see overview of Medicare Advantage payment). Although this type of adjustment for payment is outside the scope of this project, it could have some implications. F*or example, if patients with certain sociodemographic characteristics have greater needs, does payment for their care reflect the higher cost of caring for them? If providers receiver greater payment for caring for these patients, should comparable outcomes be expected?*

The characteristics associated with being disadvantaged (e.g., low SES) are generally associated with less than optimal outcomes. However, for resource use and cost outcomes, the relationship could vary. Depending on timing and the population included, cost and resource use could be less because of inability to access preventive and early diagnostic services. Additionally, if sociodemographic factors lead to less use of healthcare services, data on health status and clinical conditions prior to the start of care may not exist to the same degree. That is, it those with lower SES use the system relatively less (controlling for morbidity) then adjustment of prior diagnoses might under under-adjust.

Based on the considerations for selecting risk factors noted above, sociodemographic factors ***could potentially be eligible*** for inclusion in a risk adjustment model. However, correlation with an outcome of interest alone is not sufficient to use for risk adjustment. If the pathway includes unresponsive or biased healthcare, including them in risk adjustment models may carry the implicit assumption that poorer outcomes are expected in disadvantaged populations and that healthcare providers are not expected to change practices to reduce disparities[4, 15] Some practices/interventions directly target sociodemographic factors (e.g., providing instructions in different languages, interpreters; prescribing generic vs. higher-cost brand name drugs; case managers/care navigators; post-hospital follow-up clinics). *Do providers who employ these practices have better outcomes? Are healthcare providers responsible for adjusting care practices based on sociodemographic factors? Do they cost more?*

Regardless of the mechanisms, reducing disparities is a national priority and requires the ability to measure those disparities.

Data Availability and Reliability

As previously mentioned, data limitations constrain what can be included in risk models. Sociodemographic factors other than age and sex often are not available, or not standardized sufficiently for use in performance measurement.[16] Therefore, if these factors should be included in risk models, data availability is a critical consideration.

Patient- or Aggregate-Level Factors

Typically, risk models include patient factors. However, an alternative might be to focus on the accountable entity being measured (e.g., proportion of low-income or minority patients served by a hospital) or the community (e.g., average income, healthcare resources available). These aggregate level characteristics could be included in statistical models to determine the benchmark group for a shrinkage estimator, or as a hospital characteristic in a hierarchical model, or used to construct peer groups for comparisons.

Use of Outcome Performance Measures in Accountability Applications

NQF-endorsed performance measures are expected to be used in accountability applications as defined above. The NQF criteria currently do not differentiate among the various accountability applications (e.g., public reporting vs. pay for performance) and require all performance measures demonstrate reliability and validity and adequate risk adjustment so that correct conclusions about the quality of care can be made. *Is the need for validity of conclusions about quality different when using an outcome performance measure to identify which providers to include in a network, or where to seek care, or who to reward or penalize in a pay-for-performance program? If so, what is the conceptual and empirical basis for the differences?*

NQF criteria and endorsement do not include requirements for, or evaluation of, procedures for implementation and reporting of the computed performance measure score (e.g., reporting with or without confidence intervals or sample sizes; methods for determining rankings or ratings, statistically significant differences, or incentives and penalties). However, some of the methods applied after performance measure score is computed could affect the validity of the conclusions.

Increasingly, concerns have been expressed about the policy response to outcome performance results. For example, if providers serving disadvantage populations have poorer outcome performance and incur financial penalties, it could worsen disparities in health and healthcare by reducing resources available to care for their patients.

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Appendix—Expert Panel Bios

Kevin Fiscella, MD, MPH (Co-Chair)
Professor, Family Medicine, Public Health Sciences, Community Health and Cancer Center, University of Rochester Medical Center
Kevin Fiscella, MD, MPH, is a tenured Professor of Family Medicine, Public Health Sciences, and Community Health, and Oncology at the University Rochester School Medicine. His scholarly work has focused on both conceptual models and empirical research related to health care disparities. His current work addresses practical strategies to mitigate disparities in health care quality. He has served on numerous national committees related to health and health care disparities. He has published more than 180 papers in peer-reviewed journals and has received major research grants from numerous federal agencies and private foundations.

David Nerenz, PhD (Co-Chair)
Director, Center for Health Policy & Health Services Research, Henry Ford Health System
David R. Nerenz, PhD, is Director of the Center for Health Policy and Health Services Research at Henry Ford Health System in Detroit. He is also Director of Outcomes Research for the Neuroscience Institute, and Vice-Chair for Research of the Department of Neurosurgery at Henry Ford Hospital. He was appointed in May of 2012 as a Commissioner on the Medicare Payment Advisory Commission (MedPAC). He recently served as the Chair of the Institute of Medicine Committee on Leading Health Indicators for Healthy People 2020 and Chair of the IOM Subcommittee on Standardized Collection of Race/Ethnicity Data for Healthcare Quality Improvement.

Jean Accius, PhD, PMP
Director, Health and Long-Term Services and Supports, AARP
Jean Accius, PhD, is an expert in health and long-term care policy. His background includes translating research into policy and practice. Currently, Jean is the Director of Health and Long-term Services and Supports (LTSS) at AARP. In this capacity, he leads the policy development process on health and LTSS related issues that guides AARP's legislative, regulatory and litigation activities. He also provides strategic advice and counsel to senior AARP leadership and other departments to ensure policy integration and consistency across the association.

Alyce Adams, MPP, PhD
Research Scientist II and Chief of Health Care Delivery and Policy, Division of Research, Kaiser Permanente
Alyce S. Adams, MPP, PhD, is Research Scientist II and Chief of Health Care Delivery and Policy at the Kaiser Permanente Division of Research in Oakland, California. Her research explores disparities in chronic disease treatment outcomes using longitudinal data methods. Dr. Adams' current studies include a cluster randomized clinical trial to improve diabetic peripheral neuropathy treatment outcomes funded by the Patient Centered Outcomes Research Institute and an evaluation of the impact of Medicare Part D among dual Medicaid and Medicare enrollees funded by the National Institute on Aging. She has a PhD in Health Policy from Harvard University.

Mary Barger, PhD, MPH, CNM, FACNM
Associate Professor of Nursing, University of California San Diego, and American College of Nurse Midwives

Mary Barger PhD, MPH, CNM, FACNM, is a perinatal epidemiologist and has practiced clinical nurse-midwifery for over 25 years. She has taught in a school of public health, a medical school, and two schools of nursing. The focus of her research has been on maternal morbidity and mortality with a focus on cesareans and using administratively collected data, such as hospital discharge data and birth data, to examine processes and outcomes of care. One of her recent studies combined survey data with GIS information to further understand the racial disparities in cesarean rates in California

Susannah M. Bernheim, MD, MHS
Director, Quality Measurement, Yale New Haven Health System Center for Outcomes Research and Evaluation (CORE)
Susannah M. Bernheim, MD, MHS, is a Family Physician, Health Services Researcher and the Director of Quality Measurement at Yale-New Haven Hospital's Center for Outcomes Research and Evaluation (CORE). She has extensive experience leading teams in measure development, maintenance, NQF endorsement, and implementation. Her research focuses on the intersection of healthcare quality, outcomes and socioeconomic status. She received her MD at the University of California San Francisco, and her Master of Health Sciences at Yale University. Following a research fellowship and prior to joining CORE she served as Deputy Director of Performance Management for the Yale New Haven Health System.

Monica Bharel, MD, MPH
Chief Medical Officer, Boston Health Care for the Homeless Program
Monica Bharel, MD, is the Chief Medical Officer for the largest nonprofit health care organization for homeless individuals in the country. Under her leadership, the organization achieved Level 3 NCQA PCMH recognition and a 3-fold improvement in women's health quality indicators. She was appointed by Governor Patrick to serve on the Behavioral Health Integration Task Force under the Massachusetts payment reform initiative. She has spoken locally and nationally about the needs of vulnerable and homeless individuals. She is currently focused on ensuring that state and national health care reform efforts enhance the care for homeless individuals, without inadvertently widening health care disparities.

Mary Beth Callahan, ACSW/LCSW
Senior Social Worker, Dallas Transplant Institute
Mary Beth Callahan has worked in nephrology social work since 1984. She is currently Senior Social Worker at Dallas Transplant Institute (DTI) and has had the privilege to work with ESRD patients on hemodialysis, peritoneal dialysis and transplant. She has served on numerous advisory boards and professional committees. She served as CNSW Chair from 1996-1998 and is co-developer of the CNSW's Outcomes Training Program. Her focus with transplant recipients is to help them prepare to return to work whenever possible and/or to live life to the fullest. One of her ongoing efforts is to encourage other staff members to keep rehabilitation in the forefront of their minds. She hosts Job Club monthly at DTI. Job Club developed from joint research grants from the Society for Transplant Social Workers and the Council of Nephrology Social Workers and provides patients with information on Social Security Work Incentives and connects patients with vocational rehabilitation resources and hope.

Lawrence Casalino, MD, PhD
Livingston Farrand Professor of Public Health; Chief, Division of Outcomes and Effectiveness Research, Weill Cornell Medical College
Lawrence Casalino, MD, PhD, has written some of the seminal articles on unintended consequences of quality measurement and on SES disparities and quality measurement. He has also served on relevant

national committees. He has quite a lot of knowledge about the organization of medical practice and hospital care and about the responses of providers to incentives. This knowledge comes from quantitative and qualitative research as well as from the 20 years that he spent as a family physician in full-time practice, during which time he also served as a hospital medical staff president and vice president of a large independent practice association.

Alyna Chien, MD, MS

Assistant Professor, Boston Children's Hospital

Alyna Chien, MD, is a physician health services researcher at Harvard Medical School and Boston Children's Hospital. She is the leading pediatric expert on the use of performance incentives in healthcare and has extensive experience using established risk adjustment methods. Currently, she is examining whether geocoded socioeconomic information can improve pediatric risk adjustment algorithms so that healthcare payments can better reflect pediatric patient complexity. She has used similar geocoding techniques to examine the degree to which socioeconomic factors have affected the ability of very large physician organizations to respond to performance incentives. Her work is funded by AHRQ, NICHD, and RWJF.

Marshall Chin, MD, MPH

Richard Parrillo Family Professor of Healthcare Ethics in the Department of Medicine, University of Chicago

Marshall H. Chin, MD, MPH, FACP, Richard Parrillo Family Professor of Healthcare Ethics in the Department of Medicine at the University of Chicago, is a general internist with extensive experience improving the care of vulnerable patients with chronic disease. Dr. Chin is Director of the RWJF Finding Answers: Disparities Research for Change National Program Office. He was a member of the IOM Committee on Future Directions for the National Healthcare Quality and Disparities Reports. He serves on the NQF MAP Coordinating Committee and was a member of the NQF Healthcare Disparities and Cultural Competency Consensus Standards Steering Committee.

Mark Cohen, PhD

Statistical Manager, Continuous Quality Improvement, Division of Research and Optimal Patient Care, American College of Surgeons

Mark Cohen, PhD, is the Statistical Manager, Continuous Quality Improvement, Division of Research and Optimal Patient Care, American College of Surgeons, and Adjunct Associate Professor of Surgery, Feinberg School of Medicine, Northwestern University. Since 2008, he has managed statistical efforts related to the ACS National Surgical Quality Improvement Program (NSQIP), ACS Universal Surgical Risk Calculator, ACS Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP), and the ACS NSQIP Pediatric program. He has 125 publications and his current research focuses on optimizing risk-adjustment and reporting methodologies used in these programs. Before joining the ACS, Dr. Cohen was Statistician and, later, Technical Director at the Naval Institute for Dental and Biomedical Research.

Norbert Goldfield, MD

Medical Director, 3M HIS Clinical and Economics Research, 3M

Dr. Goldfield works as a medical director of 3MHIS, developing classification tools linking payment to quality. This work is used throughout the United States and overseas, with public and private payers. Dr. Goldfield is a board certified internist practicing at a community health center. He edits the peer reviewed Journal of Ambulatory Care Management and has published extensively. He is on a number of boards including Health Care for All. He is also the founder and executive director of Healing Across the

Divides (www.healingdivides.org), an organization seeking to improve the health of Israelis and Palestinians.

Nancy Garrett, PhD
Chief Analytics Officer, Hennepin County Medical Center
Nancy Garrett, PhD, is currently Chief Analytics Officer at Hennepin County Medical Center, where she is developing methods to measure the impact of socioeconomic status on cost and quality measures for HCMC's diverse safety net population. She has an extensive background in applied health services research, and authored a chapter on provider profiling in a managed care textbook. Nancy is on NQF's Cost and Resource Use Steering Committee where she raised issues about adjusting for socioeconomic status that helped lead to the convening of this expert panel. Nancy has a Ph.D. in Demography from the University of Illinois.

Atul Grover, MD, PhD, FCCP
Chief Public Policy Officer, Association of American Medical Colleges
Atul Grover, MD, PhD, is the Chief Public Policy Officer for the Association of American Medical Colleges (AAMC). In this role, he manages the AAMC's health, educational, and scientific policies. Dr. Grover joined the AAMC in its Center for Workforce Studies, where he managed research activity and directed externally funded workforce studies. Prior to the AAMC, Dr. Grover was a senior consultant in health care finance and applied economics for The Lewin Group, Inc and also served with the Health Resources and Service Administration. Dr. Grover is a clinical faculty member at the George Washington School of Medicine.

David Hopkins, PhD
Senior Advisor, Pacific Business Group on Health
David S. P. Hopkins, PhD, is Senior Advisor at the Pacific Business Group on Health. Hopkins is also affiliated with the Center for Health Policy and the Clinical Excellence Research Center at Stanford University Medical School. He earned his A.B. in Biology from Harvard, and his M.S. in Statistics and Ph.D. in Operations Research from Stanford. Hopkins chaired the California Cooperative Healthcare Reporting Initiative (CCHRI) Executive Committee from 1996-2012 and is the former Chair of the Integrated Healthcare Association Pay-for-Performance Technical Efficiency Committee. He served two terms on NQF's Consensus Standards Approval Committee and currently chairs the NQF Purchaser Council.

Dionne Jimenez, MPP
Research & Policy Coordinator, Service Employees International Union
Dionne Jimenez is a research and policy coordinator for the Service Employees International Union, which represents 2.2 million workers advocating to improve their lives and the services they provide. She performs public policy analysis and develops public policy positions for SEIU on health care financing, workforce, quality of care & life, and other key issues related to the health care sector. Previous professional experience includes serving as staff and legislative assistant to Congressman George Miller (D-CA). Dionne is a proud first-generation college graduate. She has a Master of Public Policy degree from the University of California, Los Angeles, School of Public Affairs, and a BA in Political Science from the University of California, Berkeley.

Steven Lipstein, MHA
President and CEO, BJC
Steven Lipstein has led BJC Healthcare since 1999. He is highly engaged in ensuring that people everywhere receive high-quality, safe care. BJC is the largest provider of uncompensated care in Missouri. From 2008 to 2010, Mr. Lipstein co-chaired the oversight committee for Missouri Medicaid. Prior to joining BJC, Mr. Lipstein held executive roles at the University of Chicago and The Johns Hopkins Health System. He is vice chair of the Board of Governors for the Patient-Centered Outcomes Research Institute. He graduated from Emory University, has an MHA from Duke University, and completed an administrative fellowship at Massachusetts General Hospital.

Eugene Nuccio, PhD
Assistant Professor, University of Colorado, Anschutz Medical Campus
Eugene Nuccio, PhD, Assistant Professor, holds a doctorate in Education Psychology and has extensive experience with statistical analysis, measurement, and risk adjustment of outcomes for Medicare home care recipients. Since 2004 he has led the development of the last three sets of 40+ prediction models used to risk adjust home health outcomes nationally. He initiated innovations in how to represent OASIS data as well as methodological changes to develop complex multivariate models. Under the direction of MedPAC, Dr. Nuccio linked CMS claims, OASIS, and other data sources to produce experimental quality measures and prediction models. His contributions to the scientific literature on risk adjustment include presentations at AcademyHealth.

Sean O'Brien, PhD
Assistant Professor, Biostatistics and Bioinformatics, Duke University Medical Center
Sean O'Brien, PhD, is an Assistant Professor in the Department of Biostatistics and Bioinformatics at Duke University Medical Center. Since 2005, he has served as statistical director of the Society of Thoracic Surgeons (STS) Data Warehouse and Analysis Center and as co-investigator of several grants and contracts using large registries to study comparative effectiveness and health care quality. Dr. O'Brien also works on the development and evaluation of quantitative methods for healthcare provider performance assessment. His research interests include risk adjustment methodology, composite measures, and Bayesian modeling.

Pam Owens, PhD
Senior Research Scientist, AHRQ
Pamela Owens, PhD, is a senior research scientist at the Agency for Healthcare Research and Quality (AHRQ). Dr. Owens is the Scientific Director of the AHRQ Quality IndicatorsTM (QIs) and co-leads Healthcare Cost and Utilization Project (HCUP) outpatient data development. Dr. Owens' research experience includes the quality and access to care for various populations, conditions and settings, including children, low income, mental health, asthma, readmissions, ambulatory surgery, emergency department and inpatient settings. Her work has appeared in journals such as the JAMA, Medical Care, Health Services Research, Annals of Internal Medicine, Pediatrics, Academic Emergency Medicine, Psychiatric Services, and Journal of Preventive Medicine. Dr. Owens received a Ph.D. in epidemiology and health policy from Yale University and completed a post-doctoral fellowship at Johns Hopkins. She also has six years of clinical experience as an occupational therapist.

Ninez Ponce, MPP, PhD
Professor, Department of Health Policy and Management - UCLA Fielding School of Public Health
Ninez Ponce, MPP, PhD, is a professor in the Department of Health Policy and Management at the UCLA Fielding School of Public Health. In 14 years at UCLA, she has taught courses on health insurance, health

economics, health policy, and research methods, with a research focus on racial/ethnic disparities in cancer prevention and control. She also conducted program evaluation, research, and public policy for a W.K. Kellogg Foundation national initiative to improve health care for the underserved. She has served on expert advisory groups for the Institute of Medicine, the Office of the Patient Advocate, and the UCLA Department of Health Services.

Thu Quach, PhD, MPH

Research Director, Asian Health Services

Thu Quach, PhD, MPH, is an epidemiologist and primary research interest has focused on the influence of environmental and sociocultural factors on immigrant population health. As a research scientist at the Cancer Prevention Institute of California, a non-profit research organization, she leads research studies focusing on the booming nail salon workforce, comprised mainly of Vietnamese immigrants. In 2011, after years of research collaboration, she was recruited by Asian Health Services to become the inaugural research director at this community health center (CHC) serving low-income Asian Americans patients. She spearheads efforts across several CHCs to incorporate social determinants of health factors in risk adjustment.

Tia Goss Sawhney, DrPH, FSA, MAAA

Director of Data, Analytics, and Research, Illinois Department of Healthcare and Family Services

Tia Goss Sawhney, DrPH, FSA, MAAA, is the Director of Data, Research, and Analytics with the Illinois Medicaid plan. She is the author of the 2010 paper "Health Insurance Risk Adjustment: The Income Effect". The paper is included in her 2012 dissertation "Controlling Indirect Selection under Healthcare Reform" available at *www.soa.org/files/sections/health-dissertation-**sawhney**.pdf.* She is Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries and active in each organization.

Nancy Sugg, MD, MPH

Medical Director Pioneer Square Clinic & Downtown Homeless Programs, Harborview Medical Center

Nancy Sugg, MD, MPH, is Associate Professor of Medicine in the Division of General Internal Medicine at the University of Washington and Medical Director of Harborview Medical Center's Pioneer Square Clinic and Downtown Homeless Programs. She is the Chair of the Care Management Committee at Harborview Medical Center, focusing on decreasing inpatient lengths of stay and readmissions and improving transitions of care. She works closely with Seattle-King County Public Health's Healthcare for the Homeless Network developing integrated medical services for homeless and outcomes measures for clinics caring for underserved populations. Dr. Sugg directs research projects and mentors future primary care providers and policy makers for underserved populations.

Rachel Werner, MD, PhD

Associate Professor of Medicine, University of Pennsylvania

Rachel Werner, MD, PhD, is an Associate Professor of Medicine at the University of Pennsylvania. She received her medical degree from the University of Pennsylvania School of Medicine, where she also did her residency in Internal Medicine. While completing a clinical fellowship in general internal medicine, she also received a Ph.D. in health economics from the Wharton School at the University of Pennsylvania. Dr. Werner's research seeks to understand the effect of healthcare policies and delivery systems on quality of care. In particular, she has examined the role of provider payment and financial incentives on provider behavior, the organization of healthcare, racial disparities, and overall healthcare quality. Her work has empirically investigated numerous unintended consequences to quality improvement incentives and was among the first to recognize that public reporting of quality

information may worsen racial disparities. She is currently principal investigator of an R01 from the Agency of Healthcare Research and Quality (examining how pay-for-performance in hospitals changed the value of healthcare) and an R01 from the National Institute of Aging (examining the effect of Medicaid pay-for-performance for nursing homes on delivery of nursing home care). She also directs one of five national centers to evaluate the effectiveness of the medical home by the Veterans Health Administration. She has received numerous awards including the Dissertation Award and the Alice Hersh New Investigator Award from Academy Health and the Presidential Early Career Award for Scientists and Engineers. Her research has been published in high-impact peer-reviewed journals, including *JAMA*, *Journal of Health Economics, Health Services Research,* and *Health Affairs*. In addition to her research, Dr. Werner is a practicing primary care internist at the Philadelphia VA Medical Center and regularly attends the hospital's internal medicine service. She supervises healthcare provided by Hospital of the University of Penn.