

Population Health Measures: Assessment and Design Technical Expert Panel Summary Report

Arbor Research Collaborative for Health

Prepared for the Centers for Medicare & Medicaid Services

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1. Technical Expert Panel Summary

1.1 Overview

The Centers for Medicare & Medicaid Services (CMS) has contracted with Arbor Research Collaborative for Health (contract number HHSM-500-2013-13004I, task order HHSM-500-T0002) to develop a strategic framework and measure development plan for assessing the implementation of population health strategies in CMS programs. This includes understanding the measures that currently exist, gaps in existing measures, and evaluating potential measure application to CMS quality programs, payment policies, and innovative models of healthcare delivery.

Key tasks during the base period of the project include the following:

- Develop a strategic framework for the development of population health measures within the CMS programmatic context;
- Conduct an environmental scan of existing population health measures within CMS and across the Department of Health and Human Services (HHS);
- Conduct a gap analysis of the measures identified in the environmental scan to facilitate prioritization of future measure development efforts; and
- Recommend a plan for creating a usable population health measurement infrastructure, including consideration of use cases to illustrate potential CMS programmatic applications for population health measures.

1.2 Objectives

The objectives for this Technical Expert Panel (TEP) are described in the Charter (see **Attachment**) that was ratified by the TEP on February 3, 2015.

The TEP was charged with reviewing major contract deliverables and providing recommendations for a population health measure set to be used in the context of CMS programs. The TEP was convened for two formal meetings, listed below in **Section 1.3**. During the first meeting, the TEP reviewed the results of the **Strategic Framework** for population health measurement in the CMS context, and the **Environmental Scan** that identifies current CMS programs, existing measures, and current data sources relevant to population health measurement. During the second meeting, the TEP reviewed the **Gap Analysis** that identifies key areas for population health measure development, and was consulted on the **Final Recommendations** for a population health measure set.

1.3 Meetings

The Call for Nominations for this TEP was posted to the CMS website from November 14 – December 10, 2014. Meetings occurred between January and March 2015, including:

- Pre-TEP preparatory conference call: January 23, 2015
- TEP meeting #1: February 20, 2015
- TEP meeting #2: March 3, 2015

Each meeting was conducted virtually through webinar and teleconference capability, and the materials for discussion were shared with the TEP in advance of each meeting. In addition to participating in the conference calls, members were also encouraged to send written feedback or comments via email. Meeting minutes were prepared subsequent to each meeting and circulated for review.

1.4 Members

The TEP was composed of 10 individuals (**Table 1**) representing the following areas of expertise and perspectives:

- Subject matter expertise: population health measurement; subjective measures of health status; measurement of the determinants of health; measurement of health disparities
- Performance measurement
- Quality improvement
- Health information systems
- Long term services and supports
- Integrated care delivery
- Consumer/patient/family perspective
- Purchaser perspective

Table 1. TEP Membership List

Name, Credentials	Affiliation, City, State	Conflict of Interest Disclosure
Amy Aronsky, DO, FCCP, FAASM	CareCentrix, Hartford, CT	None
Lawrence Busch, PhD, MS	Michigan State University, East Lansing, MI	None
Barbara Gage, PhD, MPA	Post-Acute Care Center for Research, Washington DC	None
Andrew Hertz, MD, FAAP	University Hospitals, Rainbow Babies and Children’s Hospital, Cleveland, OH	None
Sanne Magnan, MD, PhD	Institute for Clinical Systems Improvement (ICSI), Bloomington, MN	None
Jean Flatley McGuire, PhD	Department of Health Sciences, Bouve College, Northeastern University, Boston, MA	None
Amy Mullins, MD, CPE, FAAFP	Quality Improvement, American Academy of Family Physicians, Leawood, KS	None
Michael Stoto, PhD	Department of Health Systems Administration, Georgetown University, Washington, DC	None
Andrew Suchocki, MD, MPH	Clackamas County Health Centers, Oregon City, OR	None
Steven Teutsch, MD, MPH (TEP Chair)	Center for Health Policy and Economics, University of Southern California, Los Angeles, CA	None

2. Introduction

The need to control increasing health care costs, unify delivery of care, focus on prevention and wellness, and improve quality of care has been recognized for some time. In 2008, Berwick et al. introduced the Triple Aim, which calls for simultaneous, integrated initiatives to improve the patient's experience with care (better care), improve the health of populations (better health), and decrease the per capita cost of health care (lower cost) (Berwick et al. 2008). Informed by this concept, the Patient Protection and Affordable Care Act (Affordable Care Act) enacted in 2010 marked the beginning of a new era in efforts to improve the health of Americans and to reform the United States (US) health care system. Provisions for developing and testing new models of health care delivery and payment present CMS with enhanced policy levers to expand the agency's role as a driver of health care innovation. Chief among these is the opportunity to transform the clinical care system from a model that reacts to the acute needs of patients to a model that promotes the health of populations. The agency has already begun exploring new avenues of care delivery and payment that take into account a multiple determinants model of health. As existing strategies mature and new ones are developed, measurement will be needed to provide feedback on the effectiveness of these initiatives as well as incentivize continued infrastructure investment.

The development of population health measures for use in CMS programs is accompanied by a number of opportunities and challenges. On one hand, by expanding its emphasis and incorporating system-level interventions that address the multiple, population-level factors, CMS is poised to make meaningful contributions to overall improvements in the nation's health. As part of its strategy to better understand the challenges, ensure work was not duplicated within and across agencies already working heavily in this arena, and identify clear, actionable next steps for measure development, CMS launched the Population Health Measures: Assessment and Design project. This project includes a series of major deliverables to support the development of a population health measurement strategy that could be considered by CMS. This series of five reports includes: a **Strategic Framework** for approaching population health measurement; a **Business Case** for population health measurement in CMS programs; an **Environmental Scan** of existing measures and available data infrastructure; a **Gap Analysis** informing where further work is needed in research and data infrastructure; and **Final Recommendations** for actionable next steps including initial use cases for measure development.

To assist in achieving the project's objectives of assessing feasibility, ensuring work was not duplicated, and identifying actionable next steps, a TEP was convened to review and evaluate these reports, and advise the Project Team on population health measurement recommendations for CMS.

3. Strategic Framework

Following the introductory overview of the Population Health Measures: Assessment and Design project, the TEP began review of the Strategic Framework. It was noted that this report is designed to support the development of the CMS population health measurement initiative, and lays out an approach for pursuing population health measurement in the context of CMS programs. It was emphasized that this

report is designed to raise critical conceptual issues and offer potential pathways forward in this rapidly evolving field.

In laying the foundation for TEP discussion, the overarching goals of the Strategic Framework were presented. These included:

- Alignment with the four foundational principles of the CMS Quality Strategy:
 - Eliminate racial and ethnic disparities
 - Strengthen infrastructure and data systems
 - Enable local innovations
 - Foster learning organizations
- Producing a transformative strategy that builds upon rather than duplicates the important work in population health being done by CMS' sister agencies
- Providing a balanced measure portfolio in terms of both population health topic areas (determinants, outcomes) and measure domains (structure, process, outcomes)
- Focusing on actionable measure topic areas within CMS' mission and sphere of influence that will have meaningful impact on the health system

3.1 Definitions

The Strategic Framework incorporates the role of health determinants in the definition and measurement of population health. Specific working definitions used throughout the report for the various components of population health were presented to the TEP for comment. These included:

Health Outcomes. These are defined as the category of health states that together define the overall health of a population, such as total mortality rate and life expectancy, functional status, and quality of life. As intermediate outcomes, prevalence or incidence of specific disease or injury rates, as well as total burden of morbidity are included.¹

Health Determinants. Determinants are the full spectrum of characteristics and processes that together influence the health of individual persons as well as the total population. These include: individual (innate) factors, behaviors, clinical care, and the social and physical environments.

Population. Within the context of CMS programs, four types of subpopulations were considered:

- **Treated population.** Persons treated by clinical practitioners in a designated area or at a set of clinical facilities.
- **Patient population.** Persons who visit or contact particular clinical practitioners or facilities within a specified timeframe, whether or not they receive or are prescribed any treatment.
- **Potential patient (entitled) population.** Any persons who would be expected to visit or contact particular clinical practitioners or facilities if they felt the need for clinical care.
- **Community (total) population.** Any persons who reside in a specific geographic area.

¹ It was noted that the definition of health outcomes is consistent with that of the World Health Organization.

Because this framework is concerned with measurement of population health strategies, it is important to understand key components of the health system as well as population health. These definitions were also outlined for TEP comment:

Health System. The set of entities or organizations that have a primary role in maintaining and improving population health. These include:

- **Clinical Care Sector.** The entire spectrum of facilities and services in which health care providers deliver health care to individual patients. It also includes the private and public insurance plans that help finance the utilization of clinical care services (Jacobson 2012).
- **Public Health Sector.** The network of administrative or service units of local, state, or the federal government as well as tribes and territories concerned with health and carrying responsibility for the health of a geopolitical jurisdiction.
- **Community Sector.** The spectrum of community organizations, advocacy groups, social services, educational institutions, or businesses that are involved in specific actions for community improvement.

The TEP members inquired about the scope of *population health* within the context of CMS programs. CMS noted that it recognizes that there are two fundamental conceptions about population health: enrolled population and total population health. CMS noted that it understands that the Centers for Disease Control and Prevention (CDC) are targeting total population health, but CMS is targeting enrolled population health. It was stated that the CMS vision begins with the direct enrolled populations that CMS serves, but there are also regulatory responsibilities through the Affordable Care Act that include the private sector. The overall vision is to catalyze alignment across multiple sectors of health care coverage to impact total population health. The programs that are being examined are looking to hold health systems accountable through value-based purchasing and payment, but also through models such as the State Innovation Models (SIMs). It was noted that CMS is looking to go beyond a purely clinical sector approach to interaction within the community.

The TEP discussed the differences between the *treated population*, *patient population*, and the *potential patient (entitled) population*. The TEP noted that there are different ways to conceptualize the individuals who might interact with the health system. For example, there are patients in the clinical care system that are being treated for a health condition; there are individuals in the clinical care system who have no specific health condition but are a part of the health system; and there are all individuals in a geographic area. (While the first two categories could be considered patients, the latter category refers to residents.) It was acknowledged that definition of the *treated population* can be seen as having major importance in quality measure development work, but there may not be a need for strong distinction between this sub-population and the *patient population*. However, an important difference is that the *patient population* might apply to individuals who only visit clinics for wellness visits and are not necessarily receiving treatment. Despite this nuance, it was also noted that attempting to make this distinction between the treated and patient populations could potentially confuse clinicians, who may not perceive an important difference between the two populations. TEP members indicated that

depending on what is being screened or measured, these populations could have very different meanings. As a potential resolution to this debate, it was suggested that revising the terminology from “patient” to “client” might be a way to improve the clarity of the definitions. It was also commented that this project aims to push boundaries to provoke more thought about health care consumers that might be outside the realm of the traditional clinician-patient interaction. To this end, broadening the terminology might allow the project to be more expansive and innovative in its approach. Clinicians could think about addressing social needs outside the setting of the clinic, as part of the treatment plan. This would also drive recognition of the distinction between medical and social services, since not all services accessed by a patient would necessarily be medical.

The TEP also discussed the definition of health “system”, and cautioned that the word “system” implies that health care in the United States is one entity, whereas it is actually very fragmented. The alternative language “set of collaborating or interdependent entities” was proposed. It was also inquired whether there would be a need to differentiate between the medical, administrative, and social support components of the system. The TEP acknowledged that the health system definitions focus on certain entities, but that the system must deliver individual health services whether they are clinical or non-clinical, as well as have programs and policies in place that are organized to improve health. It was agreed that the task at hand is to move the health system in the US away from fragmentation and toward greater integration, and that a population health approach presents a great opportunity for work in this area.

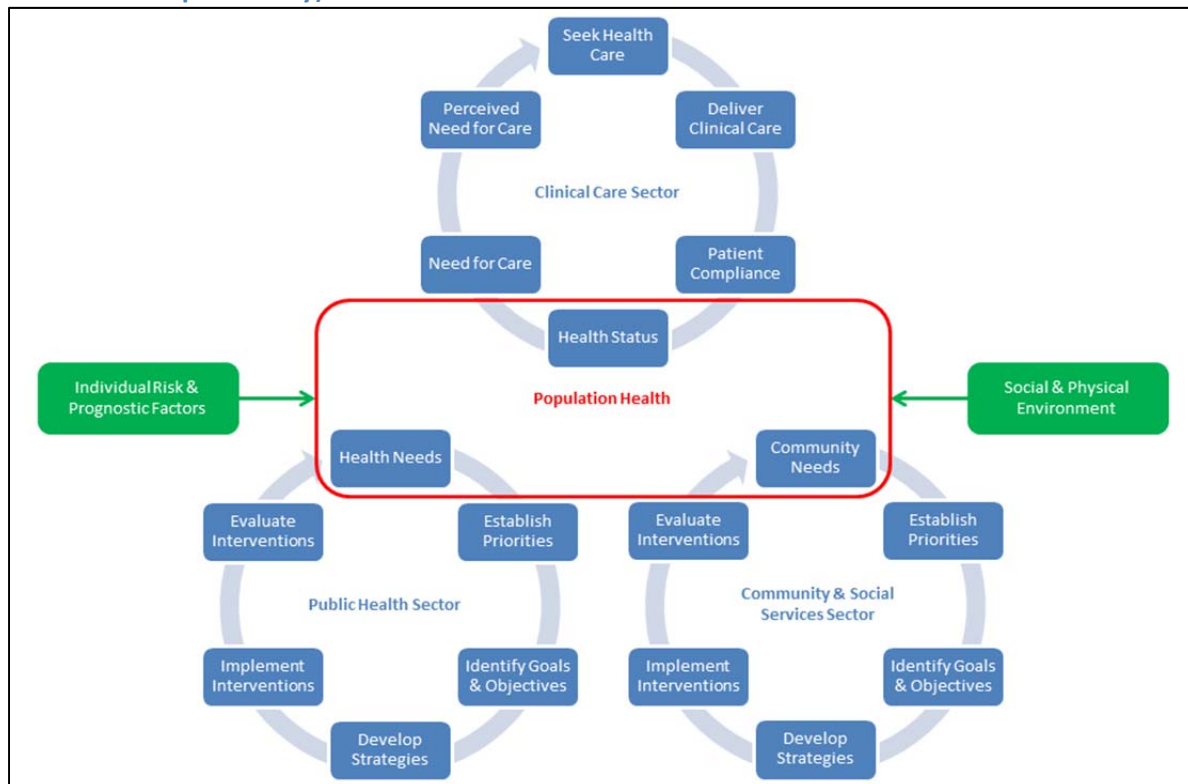
3.2 Conceptual Model

A draft conceptual model providing the underlying basis of the Strategic Framework was presented to the TEP for discussion (**Figure 1**). It was noted that in furthering its population health agenda, CMS could focus on incentivizing uptake of population health strategies in its programs and holding the clinical care sector accountable for its role in improving population health. It was proposed to the TEP that two key activities are necessary for CMS to achieve its goals: 1) promoting multi-sector approaches to care delivery; and 2) increasing its emphasis on health determinants that are modifiable within the context of CMS programs. Thus, it was noted that pathways whereby CMS can impact determinants beyond quality of care must be identified and pursued. The conceptual model begins this discussion by demonstrating the intersection between the clinical care, public health, and community and social services sectors. It was noted that population health is the focus of this conceptual model and is shown at the intersection of the sectors.

The TEP evaluated the strengths and weaknesses of this model. Concerns were shared about why *health status*, *health needs*, and *community needs* are highlighted as the focal points of each sector and are included within the population health box. One concern was that “status” seems to refer to an output of health, whereas the term “needs” suggests that there is no output produced. The emphasis on “needs” in the public health sector and community and social services sector might be an inaccurate representation of the end product that would belong in the population health domain. The TEP considered how the public health sector and the community and social services sector might be producing an output that is relevant to population health. Rather than creating a need (as implied in the diagram), these sectors should be creating something that if taken together with the output of the

clinical sector would help reach the desired population health outcome. It was suggested that the product of the community and social services sector could be “healthy community.” For the public health sector, it was suggested that terminology describing optimal health would be needed.

Figure 1. Conceptual Model: Population Health at the Center of an Integrated Health System (Draft for Discussion Purposes Only)



The TEP also agreed that the *social and physical environment* was perhaps under-emphasized within the diagram, and that this area could benefit from increased focus or relative importance. The TEP noted that the way in which the individual risk factors and the social and physical environmental factors are displayed might create the impression that those areas do not have the same complexity and value for population health as the three sectors presented in the circles. These other factors are not minor areas, and can have significant impact on population health. A TEP member inquired whether the social and physical environmental factors were actually outside the purview of work for population health measurement. Another member indicated that if the intent is to gain accountability for the clinical care sector, then the best option will not result in direct improvements to the social and physical environmental factors or individual risks. There was some consensus that it would help to include *individual risk and prognostic factors* and *social and physical environment* inside of the population health box. Along with all the factors that population health measures would aim to improve among the clinical care, public health, and community sectors, there should also be aims to improve the individual risk and prognostic factors and the social and physical environment factors.

The question was raised whether this conceptual model was intended to be aspirational or realistic. The TEP indicated that it seems to show the current state of the health system, rather than a desired future

state. The Project Team confirmed that the diagram reflects the current status, and that the aspiration or goal is to help drive and incentivize greater integration between and among the different sectors. It was noted that recent Institute of Medicine (IOM) reports describe the health system in much broader terms, with the various stakeholders that shown as an overlaying diagram with an integrator in the middle (IOM 2013b). This would illustrate a more integrated system with mutual accountabilities in place. It was also noted that the Framework appears to focus on measurement and not necessarily on connecting the fragmented health system. The report would benefit from additional discussion in this area.

Relating to the perceived level of integration between sectors, the TEP also discussed that the model seems to imply that all three health sectors contribute equally to population health, whereas this may not actually be the case. The sectors also appear in the diagram to be working independently of each other, while in reality they may be more interdependent. The TEP suggested that the three circles representing each sector in the diagram could be made more interactive, to reflect the different sectors working together. The description of this model in the Strategic Framework could focus on how CMS programs and models could be used at the intersection of the three sectors to help drive greater interaction between them. Other suggestions were to include consideration of the weighting of each sector, or possibly the creation of two separate diagrams: one showing the sectors and factors contributing to population health, and the other showing how the sectors are related.

The TEP was asked to consider what CMS could measure to drive its programs to improve health determinants and outcomes. This could include areas such as behavioral, social, and environmental determinants through risk assessments, counseling, referrals, and community health needs assessments (CHNAs). If providers are held accountable for CMS patient outcomes, this could drive the providers to discover best practices for achieving those outcomes. This might be accomplished by providing services within the clinic or working with external sources to provide services. Holding providers accountable for patient outcomes could give providers an incentive to partner with organizations within the community, particularly in circumstances where providers cannot achieve goals without external relationships or collaboration. One TEP member noted that an example of this would be tobacco use, where providers were held accountable for outcomes of tobacco use in the clinical care setting. Others echoed this and noted that CMS has already begun moving in this direction, because its programs are beginning to cover care transitions, care coordination, management, wellness visits, and preventive services. Another TEP member commented that there are examples of this work within the CMS Accountable Care Organizations (ACOs) and bundled payment systems. An analogy to food supply chains was made, to explain that this project is working to push health service providers to take more responsibility for the condition in which people enter their care. The TEP also indicated that Federal and State agencies could be encouraged to build infrastructure to improve conditions that could reduce disparities.

The TEP was prompted to provide commentary on what types of measures should be targeted for use and/or development. For example, measures of needs assessment would look very different from measures that would hold providers accountable. It was suggested that measures could be created to determine how well clinical care providers are integrating with the public and social sectors. It was also proposed that CMS could coordinate at the federal level with other agencies that might already be

operationalizing measures in these areas. Some areas of interest may be impossible for providers to accomplish alone, which would create the need to collaborate with other sectors of the health system.

The TEP inquired whether policy development and/or revision would be a possibility for CMS. In response, CMS explained that the agency is limited by statutory responsibilities and its organizational mission, but that it might have room to expand within models implemented by the Innovation Center. The TEP posed the question whether the State Innovation Models (SIMs) are an area where this transformation can be achieved. CMS indicated that states can use the levers available to them to drive legislation, and where possible, Medicare can collaborate to drive health system reform and change. The TEP noted that under the ACOs and community transition programs, CMS is providing an incentive for providers to work with community-based organizations. CMS responded that this is one of the main tasks of this project: to find ways to push CMS toward driving improvements in the health care system. One TEP member cautioned that although holding providers responsible for outcomes could produce results, holding providers accountable for microscopic aspects of structures or processes might be ineffective.

3.3 Driver Diagram

The TEP was asked to consider the drivers of health improvement that would most modifiable by CMS programs, as well as those most amenable to measurement. **Table 2** provides a draft template for driver diagrams that could be tailored in two ways: by health outcome or determinant (*aim*), and by CMS program (which would impact the specific *secondary drivers* selected for inclusion). Here, the *aim* represents a health outcome or determinant that could be quantified by an outcome measure (e.g., mortality rate, average functional status score, prevalence of smoking), modifications to all of which would collectively represent improvements in population health. *Primary drivers* represent the broad areas where CMS efforts could have the biggest impact on population health, while the *secondary drivers* indicate the more granular pathways through which CMS could drive change in population health. The secondary drivers provide the measure topics out of which specific measures could be developed to build population health measures sets. It was noted that secondary drivers shaded in gray represent areas where CMS already has extensive ongoing work. Accordingly, the Strategic Framework does not recommend population health measurement efforts attempt to duplicate work in these areas. Rather, it will be important to coordinate with these programs to collaboratively ensure any *de novo* efforts are complementary.

The TEP was asked to provide feedback on whether the primary drivers included in the diagram are appropriate, or whether there are any gaps that need to be filled. Initial comments included that cost and policy are noticeably missing from the diagram. It was also suggested that health behaviors and upstream determinants be listed as primary drivers. The question was posed whether policy and system change are described clearly enough in the diagram, and it was suggested that multi-sector collaboration could be considered system change. The TEP inquired whether policy was currently implied in the diagram, or whether it would be appropriate to add explicit reference to policy. It was suggested that policy, systems, and environmental change could possibly be grouped together.

Table 2. Template Driver Diagram for Population Health Improvement in the Context of CMS Programs. (Draft for Discussion Purposes Only)

Aim	Primary Drivers	Secondary Drivers
Improve population health determinants or outcomes*	Equitable access to services	Availability/coverage of necessary services [§]
		Ability to physically attend services
		Availability of culturally and linguistically appropriate services (CLAS)
	Quality of care	Risk assessment and appropriate follow-up
		Provision of evidence-based care [§]
	Multi-sector collaboration	Coordination of care
		Community health needs assessments
		Build the population health evidence base
	Individual-driven behavior change [§]	Family and caregiver support [§]
		Positive experience of care [§]
← Causality ←		

*Represents a suite of outcome measures for population health determinants and outcomes.

[§]Cells shaded in gray represent areas where CMS already has extensive ongoing work.

While some TEP members felt that the driver diagram template was appropriately constrained to acknowledge areas where CMS could have the most impact, others felt that the constraints were too narrow. For example, describing the need for equitable access might be better stated as equitable outcomes. It was suggested that the diagram shows a very conventional approach to health care, whereas this project could be looking to explore more innovative drivers. It was also discussed that the *aims* were meant to be inclusive, and reflect the outcomes we are trying to achieve. *Primary drivers* have more potential for standardization, while the *secondary drivers* could be open to interpretation based on local needs. Interventions and their implementation are likely to vary, so as the level of detail increases in the driver diagram, it might be more difficult to specify. One possible solution to this would be to re-name the secondary driver column as “examples of secondary drivers,” with an explanation that these would vary by context or setting.

The TEP also discussed other terminology within the diagram that might benefit from clarification. For example, the question was posed whether *individual driven behavior change* might be confusing, considering that the goal of population health might seem at odds with a focus on individual behavioral changes. It was suggested that this could be re-termed “self-driven behavior change,” and the TEP generally agreed with this approach. Another question prompted discussion about whether the idea of *multi-sector collaboration* included criminal systems, education systems, and others. This could potentially be implied in the diagram, since these sectors have an effect on the overall well-being of the community. The TEP also discussed the terminology *coordination of care*, which might be narrowly interpreted as strictly clinical care coordination. This language may need to be broadened to include coordination of social services. “Services coordination” was proposed as a possible rephrasing. It was noted that this should be a topic of priority and that service coordination should include both patient and community engagement.

The importance of keeping in mind the programs and policy levers available to CMS was emphasized. For example, its ability to influence the education sector would be limited. Unless the proposed measure areas have relevance to CMS programs and activities, it would not be within the scope of this project. The TEP noted that CMS has reached beyond the traditional Medicare and Medicaid requirements through the partnership with the Administration of Community Living (ACL) to establish aging disability resource centers.

The TEP suggested that cost is a driver of outcomes. The rise of health care costs is reducing the support of funds to social services and other social determinants of health, and one way to increase the reach of population health would be to reduce the cost of health care and reinvest that in other aspects of the system. It was generally agreed that cost should be included in the driver diagram, since affordability is one of the key areas within the CMS Quality Strategy. A recent IOM report noted that 30% of medical care costs from the health care industry are wasted (IOM 2013a). There is also a paper reviewing what could be done with this wasted money if it were returned to the private and public sectors that originally paid for the services for investment in areas that improve health (McCullough et al. 2012). The TEP noted that when considering costs, it might be possible to use claims data to drive community interventions.

The TEP was asked to provide input about how to begin building a set of priority population health measures. The goal would be to identify a balanced portfolio of measure topics that could be applicable not only across CMS programs but within them, since internally the programs can have different roles and responsibilities. The TEP noted that although achieving a balanced measure set is an important goal, it is also worth considering that the area of access to care, for example, is already a main focus of existing measurement and may have a limited contribution to population health. New and transformative population health measures should prioritize measures related to outcomes and upstream factors over process/access measures. The next steps in selecting the measure portfolio would include determining priority areas and reviewing currently available measures that could be implemented in the near term, along with identifying the infrastructure needed to accommodate measure development in the longer term. The TEP discussed that many available measures are not relevant to what CMS would be aiming to accomplish. By selecting different CMS programs and working them through the driver diagram, the diagram could be used to help identify commonalities (in addition to gaps) in those programs. Commonalities, or categories, found to be applicable across multiple programs could then be examined at the level of secondary drivers. A possible drawback to this strategy would be its potential to miss more aspirational areas of interest.

In terms of prioritizing areas of population health, it was noted that the County Health Rankings uses outcomes, clinical care, social determinants, physical environment, and individual behaviors. The American Health Rankings frames these priorities somewhat differently, with the addition of biology. The IOM core metrics task uses population health, cost, clinical care, and engagement. A document recommended for review was the NQF summary of the National Quality Strategy (NQF 2011) and measure development for large populations such as dual eligible beneficiaries (NQF 2014).

3.4 Summary of TEP Feedback

During the discussion of the Strategic Framework summarized above, the following modifications were suggested and generally agreed upon by the TEP:

Conceptual Model

- Rather than “needs,” there was consensus that the output of the public health and community sectors should be revised to reflect a status or product (e.g. healthy community).
- The TEP generally agreed that greater emphasis should be placed on the social and physical environment factors within the diagram, and that perhaps this – along with the individual risk and prognostic factors – should be placed inside the population health box.
- TEP members also agreed that the model could demonstrate increased interaction among the three sectors to reflect the interdependency, and that the sectors could be weighted to avoid the impression that all three act equally upon population health.

Driver Diagram

- TEP members agreed that areas missing from the driver diagram include cost of care and reference to policy.
- The TEP suggested that environmental and behavioral determinants be included among the primary drivers (rather than the aim).
- The TEP suggested that the secondary drivers should be open for interpretation or increased specificity at the local level, whereas the primary drivers are more appropriate for standardization.
- The TEP suggested prioritizing measures related to intermediate outcomes, with fewer measures on prescriptive process drivers. The TEP agreed on the importance of finding the right balance of outcome and process measures for a parsimonious set.

4. Environmental Scan and Gap Analysis

4.1 Environmental Scan

The Environmental Scan presents the current population health measurement landscape in the context of the Strategic Framework. Five spreadsheets accompany the Environmental Scan to provide detailed results for each of the following sections:

- **Scan of CMS Programs.** A scan of CMS programs to better understand the contexts in which population health measures could be applied.
- **Scan of CMS Program Measures.** Within the programs included in the above scan, quality measures currently in use in order to understand how aspects of population health are currently measured across CMS were reviewed.

- **Scan of Existing Population Health Measures.** A broad scan of major quality measure databases and quality measurement programs housed not only within CMS but across the United States Department of Health and Human Services (HHS) and beyond to identify existing quality measures which may be adopted for future CMS population health measurement.
- **Scan of Existing Data Sources.** A review of major data sources identified through the scan activities with potential for use in population health measurement.

The Environmental Scan employs a working definition of population health as established in the Strategic Framework. **Table 3** shows how the working definition of population health is divided into 6 population health topic areas made up of 22 population health topics. The focus is on elements of population health where the clinical care sector is capable of having the most meaningful impact, either independently or in collaboration with the public health and community sectors.

Table 3. Defined Population Health Topic Areas for the Measures Scan (Draft for Discussion Purposes Only)

Population Health Topic Area	Population Health Topic
Equitable Access to Care	Insurance Coverage
	Access to Appointments/Referrals
	Culturally and Linguistically Appropriate Services
Quality of Care	Preventive Services
	Risk Assessments (Upstream)
Multi-Sector Collaboration	Clinic-Community Relationships
	Community Health Needs Assessments (CHNAs)
Health Behaviors	Diet
	Physical Activity
	Smoking
	Substance Abuse
	Blood Glucose (Physiologic Marker)
	Blood Pressure (Physiologic Marker)
	Body Mass Index (Physiologic Marker)
Cholesterol (Physiologic Marker)	
Upstream Determinants	Physical Environmental Factors
	Social Environmental Factors
Health Outcomes	Mortality
	Functional Status
	Health Related Quality of Life
	Healthy Life Expectancy
	Disease Burden

In reviewing this table of the scanned measure topic areas, the TEP noted the relationship of this table to the driver diagram (**Table 2**): the first three areas listed in Table 3 (equitable access to care, quality of care, and multi-sector collaboration) are primary drivers in Table 2, and the next two areas (health

behaviors and upstream determinants) should also be considered for primary drivers. The last topic area (health outcomes) is the aim of the driver diagram.

The scan of CMS programs and measures included searches of CMS websites for programs and innovation models relevant to population health measures. The scan emphasized currently active CMS Innovation Center models, managed care plans, public reporting programs, and value-based purchasing programs. The scan reviewed measure sets associated with the CMS programs and models. Measures were included in the final list if they were relevant to the measure topic areas identified above. Measures were categorized by topic area and measure domain (structure, process, and outcome).

Results from the scan were presented to the TEP (**Table 4**). The scan identified 23 programs and 38 models. Among these, 548 measures were found, with 263 measures relevant to the population health topic areas previously identified (**Table 3**). Relevant measures were found in all 23 of the programs scanned, and 13 of the 38 models. Of the 263 measures, 10 were structure measures, 126 were process measures, and 127 were outcome measures. Most measures were related to the topic area of quality of care, and, within that, the topic of preventive services.

Table 4. Number of CMS Measures by Measure Area and Domain (Draft for Discussion Purposes Only)

Population Health Topic Area	Measure Domain			Grand Total
	Structure	Process	Outcome	
Equitable Access to Care	6	0	12	18
Access to Appointments/Referrals	6	0	11	17
Culturally/Linguistically Appropriate Services*	0	0	0	0
Insurance Coverage	0	0	1	1
Quality of Care	2	78	5	85
Preventive Services	2	78	5	85
Risk Assessments (Upstream Factors)*	0	0	0	0
Multi-Sector Collaboration*	0	0	0	0
Clinic Community Relationships*	0	0	0	0
Community Health Needs Assessment*	0	0	0	0
Health Behaviors	1	22	23	46
Blood Glucose	0	2	3	5
Blood Pressure	0	2	5	7
Body Mass Index	0	4	0	4
Cholesterol	0	6	5	11
Diet*	0	0	2	2
Physical Activity*	0	0	1	1
Smoking	1	4	5	10
Substance Abuse	0	4	2	6
Upstream Determinants*	1	0	0	1
Physical Environmental Factors*	0	0	0	0
Social Environmental Factors*	1	0	0	1
Health Outcomes	0	26	87	113

Population Health Topic Area	Measure Domain			Grand Total
	Structure	Process	Outcome	
Disease Burden	0	9	30	39
Functional Status	0	17	33	50
Health Related Quality of Life	0	0	18	18
Mortality	0	0	6	6
Grand Total	10	126	127	263

*Represents gap in available measures.

The broader scan of existing measures reviewed the major quality and population health measure databases and programs housed not only within CMS but across HHS, as well as population-based health surveys. Searches were conducted on the same topic areas as above, and included alternative search terms to ensure a comprehensive scan. Measures were categorized by topic, measure domain, and whether the measure was designed for the clinical care or public health sectors.

Results from this scan were presented to the TEP (**Table 5**). This scan identified 2,049 total measures, with 979 clinical care sector measures and 1,070 public health sector measures. These measures included 203 structure measures, 1,081 process measures, and 765 outcome measures.

Table 5. Number of HHS Measures by Measure Area and Type (Draft for Discussion Purposes Only)

Population Health Topic Area	Measure Domain			Grand Total
	Structure	Process	Outcome	
Equitable Access to Care	7	42	14	63
Access to Appointments/Referrals	0	30	1	31
Culturally/Linguistically Appropriate Services*	7	11	3	21
Insurance Coverage	0	1	10	11
Quality of Care	44	463	64	571
Preventive Services	43	418	63	524
Risk Assessments (Upstream Factors)*	1	45	1	47
Multi-Sector Collaboration*	10	9	4	23
Clinic Community Relationships*	10	9	4	23
Community Health Needs Assessment*	0	0	0	0
Health Behaviors	96	436	393	925
Blood Glucose	2	29	36	67
Blood Pressure	2	61	71	134
Body Mass Index	2	43	38	83
Cholesterol	5	66	41	112
Diet*	20	44	47	111
Physical Activity*	21	56	40	117
Smoking	32	95	63	190
Substance Abuse	12	42	57	111
Upstream Determinants*	28	72	39	139
Physical Environmental Factors*	7	49	1	57
Social Environmental Factors*	21	23	38	82
Health Outcomes	18	60	251	329
Disease Burden	13	0	47	60

Population Health Topic Area	Measure Domain			Grand Total
	Structure	Process	Outcome	
Functional Status	0	55	31	86
Health Related Quality of Life	0	1	12	13
Healthy Life Expectancy	0	0	14	14
Mortality	5	3	147	155
Grand Total	203	1081	765	2049

*Represents areas where gaps exist in CMS measures.

The TEP was asked to evaluate whether there were areas of measurement missing from the Environmental Scan. The measures that were excluded were specific quality of care measures that pertained to adherence to best practices. These measures were excluded because the scope of this measurement program is complementary to what CMS is already measuring. The TEP inquired whether transportation, as it relates to access to clinical and social services, was included. The Project Team indicated that this topic was included in the scan.

One suggestion from the TEP was to differentiate measures for age or gender categories. This could help identify where gaps may exist for measurement among specific sub-populations. Another suggestion was that measures of waste in the health care system might be appropriate to include. TEP members noted that not only do costs vary widely at the community level, but there are also vast differences in costs between the US and other countries. It was proposed that CMS could try to incorporate comparative data from other countries regarding these areas of interest. There may be ongoing work in other countries that would be useful to review. For example, one TEP member noted there is a cross-national study of the investments of medical care versus social services (Bradley et al. 2011). In the aggregate, the US is about average, but it spends two-thirds of the total expenditure on medical care while the rest of the world spends two-thirds on social services. This has potentially large implications on health care and population health.

The TEP inquired whether the *functional status* topic area had any measures with community tenure as an outcome of effectively offering services such as long-term support. It was noted that there is key work being integrated into the long-term services and support (LTSS) population-level work within state programs. There are programs aiming to standardize measurement of functional status across all levels of care throughout health systems.

It was observed that some of the areas of interest were determined to be issues of equity and disparity, and there are not many specific measures in those areas. It was inquired whether there are any measures like this in current use, and which disparities and equities need to be recommended. A TEP member suggested that it would be best to look at differences between subgroups, rather than a single measure of disparity, since single measures used to assess disparities tend to be very complicated.

The TEP noted that there appear to be no measures listed that relate to well-being. The Project Team explained that the scan explored *health related quality of life*, and the results were relatively limited. For CMS, the process of delivering a quality of life assessment was associated more with outcome measures. The challenge is to consider accountability in implementing a quality of life outcome measure in a

clinical care setting. Holding providers accountable for quality of life measures poses potential difficulties. It was noted that an advantage of quality of life measures is that they relate to the foundational principles of the CMS Quality Strategy. Although they pose a challenge, they could potentially foster collaborative learning among organizations as well as local innovations. It could provide an avenue for improvement, and perhaps include a linkage to payment at a later time. The TEP also discussed that another issue in measuring quality of care as it relates to post-acute and hospice care would be the patients’ preferences and goals. In this area, measures relating to shared decision-making could potentially be explored. Other subcategories for quality of life would include patient engagement and end-of-life measures, as well as the amount of administrative time required of patients (e.g., completing time-consuming or duplicative paperwork).

It was noted that in the development of measures, it will be important to consider prevention of “gaming” the system or inadvertently encouraging unethical practices. It will be necessary to take this into account during measure development and implementation.

4.2 Gap Analysis

Building on the work done in the Strategic Framework and the Environmental Scan, the Gap Analysis synthesizes the results of the scan and identifies opportunities for future measure development. The Project Team noted the Gap Analysis facilitates prioritization at a topic level, and that in-depth measure-level gap analyses will likely be needed once topic areas are selected for next steps. The 22 population health topics outlined above (**Table 3**) were grouped into one of three categories:

1. **Established.** Measures are currently in use by CMS programs/models.
2. **Existing.** Measures are not currently in use by CMS programs/models, but measures are in use in other HHS initiatives.
3. **Missing.** Measures were not identified as in use either by CMS or other HHS initiatives.

The categorization of the topic areas is displayed in **Table 6**.

Table 6. Categorization and Number of Existing Measures by Scan (Broader HHS Initiatives, CMS Programs and Models, LTSS Programs Only) (Draft for Discussion Purposes Only)

Population Health Topic Area	Measurement Category*	Broader Scan	CMS Scan	LTSS Scan
Equitable Access to Care		63	18	2
Access to Appointments/Referrals	E	31	17	2
Culturally and Linguistically Appropriate Services	X	21	0	0
Insurance Coverage	E/X	11	1	0
Quality of Care		571	85	18
Preventive Services	E	524	85	18
Risk Assessments (Upstream Factors)	X	47	0	0
Multi-Sector Collaboration		23	0	0
Clinic-Community Relationships	X	23	0	0

Population Health Topic Area	Measurement Category*	Broader Scan	CMS Scan	LTSS Scan
Community Health Needs Assessments	M	0	0	0
Health Behaviors		925	46	3
Blood Glucose	E	67	5	0
Blood Pressure	E	134	7	1
Body Mass Index	E	83	4	1
Cholesterol	E	112	11	0
Diet	E/X	111	2	0
Physical Activity	E/X	117	1	0
Smoking	E	190	10	0
Substance Abuse	E	111	6	1
Upstream Determinants		139	1	0
Physical Environmental Factors	X	57	0	0
Social Environmental Factors	E/X	82	1	0
Health Outcomes		329	113	25
Disease Burden	E	60	39	3
Functional Status	E	86	50	21
Health Related Quality of Life	E	13	18	1
Healthy Life Expectancy	X	14	0	0
Mortality	E	155	6	0
Total		2,049	263	48

* E=Established; X=Existing; M=Missing

The Environmental Scan and Gap Analysis identified measure topics of interest where CMS does not currently have any measures, but measures may be available in other settings and could be leveraged for use in CMS programs. Specifically, gaps in CMS measures were found to exist in the areas of culturally and linguistically appropriate services (CLAS), risk assessments (upstream factors), multi-sector collaboration (clinic-community relationships and CHNA), diet, physical activity, and upstream determinants (physical and social environmental factors). For many of these topics, measures were found in the broader scan and may represent opportunities for adaptation and implementation within CMS programs. Notably, within multi-sector collaboration, no measures of CHNAs were identified, so this may be an important opportunity for new measure development.

It was acknowledged that there are potential challenges for adapting public health sector measures, and the effort needed to adapt these measures could vary widely. It was also noted that when adapting measures, it would be valuable to consider any evidence available that using a measure makes a difference and would be effective for targeting interventions.

4.3 Summary of TEP Feedback

During the discussion of the Environmental Scan and Gap Analysis summarized above, the following modifications were suggested and generally agreed upon by the TEP:

- The TEP suggested the Project Team may want to include searches for measures on cost of care, disparities, and patient/community engagement.
- The TEP suggested differentiating measures for age or gender categories.

5. Final Recommendations

5.1 Leveraging Existing Measures

The TEP was asked to help identify recommendations for immediate next steps regarding population health measure development and implementation in CMS programs and models. The goal would be to balance leveraging existing measures for immediate implementation with targeted *de novo* development in areas of high priority. The TEP was reminded that final recommendations should seek to be transformative, actionable, and feasible for pursuit over the next 12 months. In considering the adaptation of measure sets, it will be important to bear in mind the target program. For example, measure sets could be considered for the state level (e.g., for implementation in states participating in the state innovation models [SIMs] initiative). For SIMs, the target population would be the state population. For this example, it may be possible to adapt public health sector measures more readily (e.g., where the data source is population-based surveys). States also have greater ability to facilitate cross-sector collaboration (making diffuse accountability comparatively less of a challenge). The TEP was urged to consider additional programmatic settings for measure set adaptation.

The TEP noted that there are currently measure harmonization efforts ongoing with CMS, National Quality Forum (NQF), and others, especially around ACO and patient-centered medical home (PCMH) measure sets. This initiative is attempting to develop a common core measure set with supplemental measures. While this effort includes some population health aspects, it also includes many more measures across a variety of different areas. One challenge with this effort relates to how the measures are implemented, because providers may be reluctant to select measurement that would be difficult to enact.

The TEP discussed how measurement could be implemented in the area of referrals to other services, which would entail consideration of patient engagement and follow-through on those referrals. It was suggested that CMS could incentivize screening for behavioral risk factors, such as alcohol abuse, by providing reward or reimbursement for these interventions in the clinic setting. Efforts to evaluate which patients have received treatment are limited, and even though referrals can be monitored, there should also be a way to track the downstream factors associated with referral. It was acknowledged that setting up a bidirectional system of communication linked to the clinical care sector is a work in progress. It would be beneficial to have measurement associated with referral and compliance with the suggested regimen, but the process of building those community linkages and navigating privacy issues represent possible challenges. Concerns were also expressed regarding how much would be reasonable to ask of a clinician, given that clinician visits are often short and there may not be time for many additional tasks. A measure might be of better use if applied at the system level rather than at the individual clinician level.

Issues of accountability are also important challenges. It was inquired whether CMS would be able to hold a provider group accountable to their surrounding geographic community. This could be joint accountability as a component of a SIM program, and could be consistent with measurement in readmissions programs which hold hospitals and skilled nursing facilities jointly accountable. The concern was raised that there are vast differences in the resources available at centers to implement collaborative programs; while some facilities are predominantly staffed by clinicians only, others have personnel devoted to grant-writing and community outreach. In the context of these considerations, CMS emphasized that the agency is subject to statutory limitations, and the best way to hold stakeholders accountable would be through payment and policy levers. One example is the ACOs, where if the organizations need to partner with external groups to accomplish their work, they could pay those groups to collaborate. Public health organizations should think more broadly about improving health by working with others beyond the clinical care sector. Fee-for-service clinics could be incentivized to utilize outside resources, such as grants, to help build relationships outside of their own setting. But financial incentives may not be enough; personnel are needed at the facilities to write grants for funding, build relationships, and help connect patients with community services.

The TEP discussed how a measure set could work at the state level. It was noted that some SIM programs across the country are beginning to consider measurement at the point where providers cannot achieve the desired results without collaborating with others in the community. Measurement could be prioritized based on areas where there could be a short return on investment, such as with substance abuse. The challenge remains how to hold providers accountable for programs that reach beyond clinical services, and how CMS could help incentivize these programs. CHNAs are helpful in providing these kinds of opportunities for connecting providers with outside initiatives. If CMS could help to standardize measurement implementation through organizations like SIMs, it might allow hospitals to set priorities and work from similar expectations. Some communities have begun to integrate on a broader scale; for example San Diego County has a health and social services agency. Its primary goal is to pull together all the pieces of the health care system under one partnership that functions with a common mission and utilizes standardized metrics. It was noted that this would be considered an “accountable care community” approach. The TEP generally agreed that having common measures and central coordination would help improve interaction between sectors of the health system, and that the SIMs might be well positioned to help facilitate this. One suggestion was that CHNAs would be an ideal start, and having a standard set of metrics for needs assessments to be used by ACOs, hospitals, or public health agencies would also benefit from having a central source or data repository. The system of information collected could be used to target interventions.

How to create a balanced and prioritized set of measures was also discussed. For example, although care coordination is a significant opportunity for improvement especially in the context of institutional level measurement, social, physical, and environmental factors are also very important. It was noted that institutions and health systems are not necessarily well positioned to measure or target interventions in decreasing disparities, given that they do not collect data on race and ethnicity in relation to outcomes. CMS could potentially utilize claims data to help with this measurement, or there might be a need to encourage more reliable collection of this type of data at the institutional level to

learn more about stratified health outcomes. There are clear infrastructure issues in this area, and it was indicated that the Department of Health and Human Services (HHS) is interested in moving toward universal collection of “REAL” data (race, ethnicity, and language). CMS could incentivize collection of race and ethnicity data, as well as incentivize or support training for the personnel executing the data collection, given that there are potential cultural issues associated with obtaining this data.

The TEP generally agreed that payment would be needed to incentivize implementation of measurement, and that measuring intermediate outcomes would likely have greater success than measuring longer term outcomes. Investment strategies could consider clinician action plans and CMS’ willingness to pay for metric improvement. Setting specific time horizons would also be valuable, and could help prevent clinicians from becoming discouraged or disengaged.

5.2 Developing New Measures

There was strong consensus among TEP members that a major gap in current measurement is the area of multi-sector collaboration, which presents an opportunity for the development of new measures. There are many possible interpretations or definitions of multi-sector collaboration, and thus a variety of approaches to operationalize it for measurement. It was reiterated that CHNAs represent an important avenue for measure development. It was proposed that CMS could develop standardized measures for hospitals to use in CHNAs. For example, state health departments produce data for counties that are standard comprehensive measures of population health. Although this type of work has traditionally been conducted by the Centers for Disease Control and Prevention (CDC), there is the opportunity for CMS to hold health systems accountable for acting upon CHNAs in a consistent way. For example, CMS could help standardize the *outcomes* that CHNAs strive to accomplish, and could also help provide standard *processes* for CHNAs by offering a menu of proven intervention options that would link CMS programs to reimbursements. Individual communities would have the flexibility to decide how best to accomplish the desired outcomes within their specific contexts, by selecting from the available menu of process options. It was also suggested that hospitals with CHNAs should identify the external partners that they work with, and a categorization scheme could be set up to create an index based on how many organizations a hospital reports working with in each of the categories. Another TEP member referenced a report that speaks to the levels of collaboration among health systems via a spectrum of collaborative work (NIH 2011). Some TEP members inquired whether it might be possible to create a mechanism to measure the co-management or exchange of information between sectors, but others cautioned that there is a lack of infrastructure to support information sharing between institutions. A suggested measurement would be assessing whether the information is being shared or exchanged, and not necessarily the requirements of the exchange. It was also suggested that there could be a documented process for exchanging information, particularly clinical information, across all collaborators.

While it was also generally agreed that the social and physical environments present an opportunity for measurement, some TEP members cautioned that it might be difficult to operationalize these areas within the context of CMS programs. The feasibility of measuring the physical environment is a concern; it was mentioned as an example that if chemical factories are releasing toxins into a community, the clinical care sector will not be able to have much impact. Health literacy was offered as another example. It was noted that some organizations are exploring gathering more data about social determinants and

needs assessment from the Medicaid application, but that the question remains how this data could be used. The collection of data in the clinical setting has not yet acknowledged the “whole person,” and it will be important to incorporate these types of data to help drive this change. Social determinants, such as transportation and child care, could also be more explicitly incorporated, but the collection of non-clinical measures linked to health outcomes would necessitate payment rewards or investments to help enable not only the data collection, but also the productive use of these data. The importance of understanding the use of the data, beyond just requesting that it be collected, was noted. For example, some data could be used for risk assessment, while other data could be used to modify individual or community outcomes. It could potentially be applied to socioeconomic status, followed by stratification of the outcomes to focus on improvement strategies. If there are costs involved in collecting new data, the data collection must be clearly tied to the goal of driving activity.

The TEP was reminded to keep in mind CMS’ ability to implement measurement in this area, within this project’s scope of work. While it is possible to recommend structure or process measures that can improve community-wide health, there are other areas that could be prioritized that would be not only more easily implemented but would also have shorter-term impacts. It was indicated that CMS could promote engagement at the federal agency level, and utilize its leverage as the biggest payer to encourage buy-in from other sectors. It was also proposed that CMS could potentially influence referrals to services such as employment, education, training, and other community level interventions.

The TEP discussed issues related to fostering care coordination. It was suggested that CMS could help to increase referrals to mental health facilities, but the concern is that these types of resources are not available in every community. Many communities are underserved, and needs assessments could help evaluate and ensure appropriate coverage. The need for mental health services is important, and CMS could potentially use payment incentives to draw attention to this issue. Regarding appropriate settings, community health centers were also suggested as an ideal place for measurement; although they may have limited resources, the aim of improving population health through metrics is something that is already part of their vision. It was also noted that while risk adjustment is less important with homogenous geographically defined populations, there is often a wide variability in the populations served by large provider organizations. The TEP discussed an initiative called the Closing the Referral Loop Project, sponsored by the American Medical Association (AMA) and Physician Consortium for Performance Improvement (PCPI). This program aims to establish mutual accountability of referrals between primary care physicians and the referral service or organization. It was suggested that the project at hand could build from the work that PCPI is currently conducting.

The TEP noted that CMS could consider reviewing the ways in which process measures might result in return on investment, although process measures might need to be refined based on the context in which they are applied. Since there is limited information available about which processes truly work in different settings, measurement should focus on outcomes that are believed to reflect areas where collaboration makes a difference. The desired outcomes are those that are clinical, but are also within the clinician’s power to control. It was inquired what the focus within clinics could be, and how programs could be incentivized that are directly tied to clinical outcomes in terms of behavioral change. To foster this kind of activity within a community through these metrics, measurement needs to begin

outside of the clinicians, because clinicians may have limited ability to impact some community needs – for example, getting a community park constructed or affecting changes to a school lunch menu. The TEP generally agreed that the solution should not be clinician-centered. It was suggested that outcome measures might provide an end goal for clinicians and institutions to achieve, but that they would have the ability to find the best practices to achieve that goal. However, providers should be asked to collect and document anecdotal data to determine how the improved outcome was achieved, so that the process can be replicable (and even recommended) for others. Additionally, the concern was raised that without support, the effectiveness of initiatives based on outcome measures would be limited and would likely vary between small and large practices. For example, it was noted that penalizing a small family practice and a large health institution would have different impacts on providers, and it is important to consider the settings appropriate for measurement implementation. Without monetary incentives and manpower to support the extra work needed, improvement initiatives might not be successful.

5.3 Summary of TEP Final Recommendations

At the conclusion of the meetings, the TEP summarized and consolidated its feedback into a list of recommendations. The list below presents the TEP’s final recommendations and also reflects additional refinement which occurred via electronic communication with TEP members subsequent to the meetings.

1. The TEP recommended the development of measure sets that leverage existing measures and meet the following conditions:
 - a. Measure sets should be applied at the health system level and geopolitical jurisdictions rather than the individual provider level.
 - b. Measure sets should focus on intermediate outcomes including health behaviors rather than long-term health outcomes that may be difficult to attribute to the health care system or process measures that may vary locally and inhibit goals of parsimony.
 - c. Measure sets should include cost of care (or framed as an affordability measure), such as NQF’s total cost of care measure or resource use measure, and measures of waste in the system.
 - d. The measure set should consider inclusion of measures with a life cycle approach, specifically for pediatric, adult, and elderly populations, as well as physical and mental health.

2. The TEP recommended de novo measure development in the following areas:
 - a. Multi-sector collaboration
 - i. More work is needed to determine what measures might be appropriate for multi-sector collaboration. Examples of topics that could be pursued include:
 1. Measures related to the degree of collaboration between a health care delivery system and community agencies.
 2. Measures related to established relationships with specific sectors (e.g., behavioral health, education, etc.).

3. Measures assessing the process for exchanging information across sectors, if the value of such measures can be determined and supported.
 4. Measures assessing the status of completion of community health needs assessments (CHNAs) and ensuring results are connected meaningfully to health improvement activities.
 - ii. In addition to process measures, it is perhaps more important to consider development of outcome measures that are sensitive to multi-sector collaboration.
 - b. Community health needs assessments (CHNAs)
 - i. Development of standardized population health metrics for use as part of CHNAs, including metrics for use as part of the CHNA as well as metrics related to how CHNAs are planned, implemented, and assessed. Given the growing number of metric sets being developed in this arena, there is need for consolidation and alignment.
 - c. Social determinants
 - i. Measures incentivizing the collection of race/ethnicity and social determinants data by health care delivery systems for use in risk adjustment of outcomes, stratifying outcome measures, and linking payment to reducing disparities. Measure implementation will need to consider unintended consequences of linking payment to disparities reductions.
 - ii. Measures assessing health literacy.
 - iii. Measures of investments in clinical services versus social services
 - d. Access to care
 - i. Measures assessing access to specific health services (e.g., behavioral health, mental health, etc.), where access refers to availability, ability to receive services, and appropriateness of services to achieve equitable outcomes and decrease disparities.
 - e. Quality of life and functional measures
 - i. Measures related to patients' preferences/goals and their well-being, patient engagement, and end-of-life measures
3. The TEP recommended that CMS align its population health measure development efforts with those occurring in the clinical quality measures and Meaningful Use programs as well as other population health measurement enterprises (IOM, NQF, CDC, etc.), and collaborate across Federal agencies to align measures of health behaviors and upstream determinants.
 4. The TEP recommended CMS develop a set of metrics for assessing the health of communities that could be used for advocating for programs and policies as appropriate within CMS and in other federal agencies.

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Attachment

Technical Expert Panel Charter

Technical Expert Panel Charter

Project Title:

Population Health Measures: Assessment and Design

Dates:

Duration of commitment will be between January and March 2015, including:

- ◆ Pre-TEP conference call: January 2015
- ◆ TEP meeting #1: February 2015
- ◆ TEP meeting #2: March 2015

Each TEP meeting will be conducted virtually through webinar and teleconference capability.

Project Overview:

The Centers for Medicare & Medicaid Services (CMS) has contracted with Arbor Research Collaborative for Health (contract number HHSM-500-2013-13004I, task order HHSM-500-T0002) to develop a strategic framework and measure development plan for assessing the implementation of population health strategies in CMS programs. This includes understanding the measures that currently exist, gaps in existing measures, and evaluating potential measure application to CMS quality programs, payment policies, and innovative models of healthcare delivery.

As part of its measure development process, CMS asks contractors to convene groups of stakeholders and experts who contribute direction and thoughtful input to the measure contractor during measure development and maintenance.

Project Objectives:

Key tasks to be completed during the base period of the project are as follows:

- ◆ Conduct an environmental scan of existing efforts to develop population health measures;
- ◆ Develop or adapt a strategic framework for the development of population health measures within the CMS programmatic context;
- ◆ Conduct a gap analysis of the existing clinical and public health measures pertaining to population health; and
- ◆ Recommend a plan for creating a usable population health measurement infrastructure, including consideration of use cases to illustrate potential CMS programmatic applications for population health measures.

TEP Objectives:

This TEP will consist of approximately 10 individuals with the following perspectives and areas of expertise:

- ◆ Subject matter expertise: population health measurement; subjective measures of health status; measurement of the determinants of health; measurement of health disparities
- ◆ Health information systems
- ◆ Long term services and supports
- ◆ Performance measurement
- ◆ Quality improvement
- ◆ Integrated care delivery perspective
- ◆ Consumer/patient/family perspective
- ◆ Purchaser perspective

TEP members will review results from an environmental scan and gap analysis and, in combination with his/her own expertise, make recommendations related to potential CMS program use of population health measures including the development of a prioritized list of potential measures.

Scope of Responsibilities:

TEP members will review the results of a strategic framework for population health measurement in the CMS context and an environmental scan that identifies current CMS programs, existing measures, and current data sources relevant to population health measurement (TEP meeting #1) as well as a gap analysis that identifies key areas for population health measure development (TEP meeting #2). Upon reviewing and assessing the current landscape of population health measurement, TEP members will provide recommendations to the measure contractor on potential use cases for implementation in CMS programs. Specifically, the TEP will provide recommendations on mitigating potential challenges and barriers as well as methods for data collection and reporting flow when implementing population health measures or strategies in CMS programs. Additionally, the TEP will provide recommendations on a list of potential measures for the measure contractor to further develop.

The TEP will discuss, share opinions, and provide input on the above topic, and final decisions on their recommendations will be determined by consensus. If a consensus cannot be reached, a vote will be taken and the results will be recorded and documented in both the meeting minutes and TEP Summary Report.

Guiding Principles:

In evaluating potential measures and use cases within CMS programs, the TEP will use the evaluation criteria developed by CMS, NQF, and as described in the MMS Blueprint as well as any additional criteria they identify when evaluating potential measures. In particular, they will address the importance, reliability, and validity of potential measures, as well as the feasibility and usability of implementation. The supporting material that the TEP will review prior to the meeting will assist with identifying any pre-existing gaps as well as any possible implementation scenarios.

The measure contractor will document the meeting proceedings in detailed meeting minutes. These minutes will be used as a reference and will be delivered to the CMS GTL/COR. Following the TEP meetings, a TEP Summary Report will be prepared and provided to the public via posting on a CMS website after review and approval by the CMS GTL/COR. Within the TEP Summary Report, individual TEP members will not be named as having endorsed specific recommendations. The TEP and its opinions will be described as a collective unit; however, the report will contain a roster of the panel membership. If any TEP members

wish to not be named in the roster, the measure contractor will include their participation and role but describe them as “anonymous”.

Estimated Number and Frequency of Meetings:

- ◆ Pre-TEP conference call: January 2015
- ◆ TEP meeting #1: February 2015
- ◆ TEP meeting #2: March 2015

Each TEP meeting will be conducted virtually through webinar and teleconference capability.

Date Approved by TEP:

February 3, 2015

TEP Membership:

See attached Composition (Membership) List.