

Priority Setting for Healthcare Performance Measurement: Addressing Performance Measure Gaps for the Health Workforce

FINAL REPORT

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EXECUTIVE SUMMARY

Research addressing the size and distribution of the healthcare workforce is plentiful, however less attention has been given to the deployment of the health workforce to promote effective prevention and care coordination. To begin to address this need, NQF convened a 20-member multistakeholder Health Workforce Committee including representatives with expertise in the areas of primary care, behavioral health, public/population health, cultural competence and diversity, health disparities, safety net care, long-term services and supports (LTSS), home and community-based care including both ambulatory and inpatient setting-based services. The Committee contributed content knowledge and expertise over the course of the project assisting with the identification of existing research, measures, and resources to identify performance measure gaps. The Committee also provided feedback on the conceptual framework to assess measurement needs and through a consensus process, prioritized recommendations for Health Workforce performance measurement concepts, specifically focused on prioritizing opportunities to measure workforce deployment in ways that promote effective prevention and care coordination.

Guided by the Committee, this project identifies priorities for performance measure development in health workforce deployment for prevention and care coordination, within a conceptual measurement framework. Additional research needs are identified in the priority areas where more work is needed, where additional data sources are needed, and where the evidence is insufficient to provide a clear path to measurement. The report is intended to assist public and private stakeholders, including policymakers, healthcare providers and systems, educational institutions and measure developers with initiating health workforce performance measurement that seeks to improve prevention and care coordination.

The work of the HHS Interagency Task Force informed the development of the framework, and the proposed measure concepts reflect as much as feasible the five principles enumerated in the Task Force report: moving toward a value-based system; using workforce levers at the federal level to improve access to primary care (Medicare and Medicaid payment policy, Graduate Medical Education (GME) and other workforce training programs, loan and scholarship programs, and promotion of quality and efficiency through delivery system reform); making full use of every member of the healthcare team; aligning the workforce to population needs; and transforming healthcare delivery through workforce innovation.¹ It is worth noting that the measure concepts

proposed here primarily focus on *deployment to improve prevention and care coordination*. In “the path forward,” several additional observations are made regarding areas not prioritized by the Committee, but which are recommended for future study.

Eight domains within the framework were identified as key areas for measurement:

- training, retraining and development;
- infrastructure to support the health workforce and to improve access;
- retention and recruitment;
- assessment of community and volunteer workforce;
- experience (health workforce and person and family experience);
- clinical, community, and cross disciplinary relationships;
- workforce capacity and productivity; and
- workforce diversity and retention.

All of the domains are expected to lead to long term aspirational outcomes that map to the National Quality Strategy’s three-part aim of better care, affordable care, and healthy people and communities.

Within these eight domains, the Committee identified the five highest priority domains for measurement for the near term, and recommended concepts for measurement in these areas as follows.

Infrastructure

- use of health IT for prior-authorization approvals
- telehealth use for behavioral health management, extension of the health workforce in geographic shortage areas, or for health maintenance, decision-making, and prescribing as appropriate

- measurement of the integration of the personnel needed to facilitate health information exchange into an organization’s infrastructure as appropriate
- training programs for workers, focused on the use of health IT to improve access, prevention, care coordination, and its value for quality improvement purposes

Training and Development

- inclusion of core competencies for the care of frail older adults and persons with disabilities, within educational programs or institutions
- availability of instructors or faculty in educational programs or institutions who can teach new competencies needed for new models of care (hours and re-teachability are assessed)
- number of hours of training that educational programs or institutions devote to team-based practice, person-centered care, and to providing care in new care delivery models
- availability of training/retraining programs within health systems or long term care systems/facilities for workers in team-based practice, person-centered care, and to providing care in new care delivery models

Capacity and Productivity

- access to appropriate health care provider measured by percentage of instances individuals received desired appointments or saw desired professional
- person and family overall experience of care delivered by interprofessional teams
- person and family perceptions of the adequacy and efficiency of team-based care
- provider/facility level for cultural competency captured on existing standardized tools for experience of care for persons and families

Clinical, Community, and Cross-Disciplinary Relationships

- assessment of community engagement and team-based practice in facilities the provision of preventive care and care coordination, including ACOs, health systems, systems or long term care systems, facilities and extended care services, using and building upon nationally endorsed measure sets (e.g., the ACO measure set), associated with team mix.

Diversity and Retention

- workforce retention by discipline area, geographic region, organization, industry, and employment vs. unemployment
- community level minority representation of the health workforce as represented in census data
- amount of variation in the number of health workers from ideal forecasting at the state level and smaller relevant geographies, e.g. Health Professional Shortage Area (HPSA), Medically Underserved Area (MUA), Primary Care Shortage Area (PCSA), county, etc.

- the ratio of discipline-specific workers to the baseline needs of specific populations, using census data
- cultural competency scores on existing standardized tools for person and family experience

Although the remaining three framework domains are essential, the current state of the evidence base and availability of data sources to support robust measurement in these areas present significant challenges to measurement.

Public comments from experts and organizations echo the Committee's acknowledgment of new and future initiatives in this topic area, which will dramatically impact and improve workforce measurement, particularly those that capture person and family centered perspective, vulnerable populations and under-resourced geographic areas. Future measure development should focus on measures of health workforce deployment and use with the greatest impact on health outcomes.

PROJECT PURPOSE

Over the past ten years, the use of healthcare performance measurement has sharply increased in the U.S. Nonetheless, it is widely recognized that many gaps in important measurement areas still exist. Section 1890(b)(5) of the Social Security Act requires the National Quality Forum (NQF), as the consensus-based entity, to describe gaps in endorsed quality and efficiency measures in the Annual Report to Congress and the Secretary of the Department of Health and Human Services (HHS). Building on work done by NQF in 2011 and 2012 on the status of measure gaps more broadly, this project is intended to further advance the aims and priorities of the National Quality Strategy (NQS) by identifying priorities for performance measurement; scanning for potential

measures and measure concepts to address these priorities; and developing multistakeholder recommendations for future measure development and endorsement. This report presents findings in the topic area of health workforce.

Environmental Context

The **National Quality Strategy** serves as the overarching framework for guiding and aligning public and private efforts across all levels (local, state, and national) to improve the quality of healthcare in the U.S. The NQS establishes the “three-part aim” of better care, affordable care, and healthy people/communities, focusing on six priorities to achieve those aims as shown in Figure 1 below.

FIGURE 1. NATIONAL QUALITY STRATEGY AIMS AND PRIORITIES



In pursuit of the NQS, HHS has contracted with NQF to focus on measure gaps in five specific areas, including:

- **Adult Immunization**
- **Alzheimer's Disease and Related Dementias**
- **Care Coordination**
- **Health Workforce**
- **Person-Centered Care and Outcomes**

The recommendations generated through this project are intended to strategically target measure development efforts in health workforce. This work is part of an ongoing partnership between HHS and NQF to advance quality measurement by bringing together diverse stakeholders to provide balanced input. Specifically, the project presents a unique opportunity for a multistakeholder committee to influence the *de novo* development of measures.

Setting Priorities for Health Workforce Performance Measurement

This project supports the goal of HHS to better deploy the health workforce to improve prevention and care coordination efforts. Specifically, the NQF was tasked to provide HHS with recommendations on priorities for performance measurement by:

- Providing multistakeholder information regarding high-leverage measurement areas related to health workforce deployment
- Identifying existing measures and measure concepts that may be useful for performance measurement

- Prioritizing opportunities and next steps for measure development and endorsement

The demand for a skilled health workforce—both new and existing workforce members—to ensure access to effective preventive care and to coordinate care is growing faster than the nation's training system is responding, neither with the numbers, skills, nor deployment where they are needed most.^{2,3} A high quality healthcare system that promotes the highest attainment of health is dependent upon a fully trained and effectively deployed health workforce, along with a new vision for workforce measurement and training.⁴ Currently, various entities are considering workforce issues and are working to develop measures that use both qualitative and quantitative methods of measuring how a capable, efficient, and person-centered workforce can be deployed.

Four general guidelines were noted in the development of proposed measure concepts to address the challenges of health workforce measurement:

- **Take a person-centered, needs-based approach:** Ensure that care recipients have the knowledge, resources, and skills they need to navigate the health system and coordinate the care they receive in order to keep themselves healthy and achieve positive health outcomes.
- **Measures of structure, process, and outcome are all important:** As the state of measurement in the area of health workforce deployment is still in its infancy, measures in all these categories need to be developed to assess the efficiency and effectiveness of the workforce.

Several Committee recommendations on care coordination measurement priorities closely relate to findings that emerged from exploration of the other gap areas, particularly the topic of care coordination. Please use the links provided above to find more information on those related efforts.

- **Acknowledge all components of the health workforce:** The health workforce consists of both paid and unpaid workers. The unpaid workforce delivers a large volume of care which often taps into the unique knowledge of the needs of their care recipients. By acknowledging the contribution of the unpaid workforce, better quality of care coordination can occur, thus improving overall health outcomes of their care recipients.
- **Focus on health workforce-specific measures:** Developing measures that refer to specific types of workers in order to gauge their effectiveness and efficiency, as well as improve the quality of care delivery, will be critical.

This work focused primarily on paid professional and paraprofessional workers, including physicians, nurses, behavioral health professionals, oral health professionals, clinical social workers and other health professionals); the nonclinical workforce (e.g., public health and human service professionals); and long-term services and supports (LTSS) personnel (e.g., home health aides, certified nursing assistants, personal care attendants). The work of unpaid workers, including caregivers, volunteers, peer counselors, informal supports was also acknowledged and discussed as an area where measurement can be considered in terms of paid workforce interaction with the unpaid workforce where feasible.

The intent of this project is to begin exploration of health workforce measurement and beyond the size and distribution of specific health workers and give attention to measures addressing the full and effective deployment of the health workforce to promote prevention and care coordination, particularly for vulnerable populations and under-resourced geographic areas. It is not meant to be a definitive list of workforce measure concepts, but an important start to measure identification and development. The focus of this work includes workforce education, training, and retraining to

equip the workforce with the essential skills to employ team-based care approaches and provide high quality, culturally competent, and person-centered care. Appropriate deployment of the workforce is expected to increase the capacity of health organizations, medical homes, and other care delivery models to improve the quality of care coordination and prevention. Moreover, the integration of electronic health records, interactive systems, and infrastructures to support and extend the workforce, are also explored. Mechanisms for shared accountability for population health between communities and the healthcare delivery system are considered.

Guided by the multistakeholder NQF Health Workforce Committee ([Appendix B](#)), this project identifies priorities for performance measure development in health workforce deployment for prevention and care coordination. Additional research needs are identified in the priority areas where more work is needed, where additional data sources are needed, and where the evidence is insufficient to provide a clear path to measurement. The Committee had eight months to consider and prioritize opportunities to measure workforce deployment in the context of prevention efforts and care coordination, and offered important considerations for measurement in this area including level of evidence, feasibility, and challenges to workforce measurement in developing the recommendations submitted in this report.

In fulfillment of its charge, this report is intended to assist public and private stakeholders, including policymakers, healthcare providers and systems, educational institutions and measure developers with initiating health workforce performance measurement that seeks to improve prevention and care coordination. This initial effort is not intended to be exhaustive and the Committee is aware of several fast-moving initiatives that will have important bearing on the future of health

workforce measurement, including regulatory activity related to the designation of vulnerable populations and shortage areas; legislative activity and the recent Institute of Medicine (IOM) report on GME funding and governance⁵; and state and private efforts concerning interprofessional team deployment models and supply and demand forecasting.

The project approach and general methodology is provided in [Appendix A](#). A compilation of comments received on the Committee's draft recommendations is provided in [Appendix F](#).

SUMMARY OF RECOMMENDATIONS

The Health Workforce Committee provided input on a conceptual measurement framework for health workforce deployment to analyze and prioritize measurement needs to improve the effectiveness and efficiency of health workforce deployment in the areas of prevention and care coordination. The work of the HHS Interagency Task Force informed the development of the framework, and the proposed measure concepts reflect as much as feasible the five principles enumerated in the Task Force report: moving toward a value-based system; using workforce levers at the federal level to improve access to primary care (Medicare and Medicaid payment policy, Graduate Medical Education (GME) and other workforce training programs, loan and scholarship programs, and promotion of quality and efficiency through delivery system reform); making full use of every member of the healthcare team; aligning the workforce to population needs; and transforming healthcare delivery through workforce innovation.⁶ It is worth noting that the measure concepts proposed here primarily focus on *deployment to improve prevention and care coordination*. In “the path forward,” several additional observations are made regarding areas not prioritized by the Committee, but which are recommended for future study.

The IOM report, “Health Professions Education: A Bridge to Quality,” which focuses on integrating a core set of competencies into health professions education: person-centered care, interprofessional teams, evidence-based practice, quality improvement and informatics, is also one of the guiding resources for development of the framework.⁷ In particular, the key domains within the framework reflect the conclusions in the report that:

- poor systems design has led to errors, poor quality of care, and dissatisfaction among

individuals being cared for and health professionals;

- systems of care need reform, and greater coordination and collaboration among health professionals is needed as well as more attention to prevention and the behavioral determinants of health to meet the needs of the chronically ill;
- technological advances in information technology should be harnessed to improve access and help establish evidence bases through research on clinical practice;
- there is a need for a new relationship of shared decision making between individuals being cared for and health care providers, in which providers are attentive to the values, preferences and cultural backgrounds of individuals and their families;
- shortages and effective deployment of existing professionals need to be addressed; and
- gaps exist between the way health professionals are prepared and what they are called upon to do in practice.

Within these contexts, desired improvements in the quality and efficiency of health workforce deployment to improve prevention and care coordination were examined, and the Committee identified key areas for measures of structure, process, and outcomes. Within the framework, eight domains were identified as key areas for measurement. Four domains were identified as essential inputs for measurement:

- training, retraining and development;
- infrastructure to support the health workforce and to improve access;
- retention and recruitment; and

- assessment of community and volunteer workforce.

Other domains were identified as intermediate outcomes for measurement:

- experience (health workforce and person and family experience);
- clinical, community, and cross disciplinary relationships;
- workforce capacity and productivity; and
- workforce diversity and retention.

All of the domains are expected to lead to long term aspirational outcomes that map to the National Quality Strategy's three-part aim of better care, affordable care, and healthy people and communities.

Within these eight domains, the Committee identified the five highest priority areas for measurement for the near term. Two of the five are the essential inputs of infrastructure and training, retraining, and development. The remaining three comprise the intermediate outcomes of improved capacity and productivity; clinical, community, and cross disciplinary relationships; and workforce diversity and retention. A high level overview of the proposed priority structure and the related process and outcome measure concepts within these domains follows. A detailed description of each domain area and the measure concepts considered and prioritized by the Committee within each of those domains is included later in this report.

Infrastructure

- use of health IT for prior-authorization approvals
- telehealth use for behavioral health management, extension of the health workforce in geographic shortage areas, or for health maintenance, decision-making, and prescribing as appropriate
- measurement of the integration of the

personnel needed to facilitate health information exchange into an organization's infrastructure as appropriate

- training programs for workers, focused on the use of health IT to improve access, prevention, care coordination, and its value for quality improvement purposes

Training and Development

- inclusion of core competencies for the care of frail older adults and persons with disabilities, within educational programs or institutions
- availability of instructors or faculty in educational programs or institutions who can teach new competencies needed for new models of care (hours and re-teachability are assessed)
- number of hours of training that educational programs or institutions devote to team-based practice, person-centered care, and to providing care in new care delivery models
- availability of training/retraining programs within health systems or long term care systems/facilities for workers in team-based practice, person-centered care, and to providing care in new care delivery models

Capacity and Productivity

- access to appropriate health care provider measured by percentage of instances individuals received desired appointments or saw desired professional
- person and family overall experience of care delivered by interprofessional teams
- person and family perceptions of the adequacy and efficiency of team-based care
- provider/facility level for cultural competency captured on existing standardized tools for experience of care for persons and families

Clinical, Community, and Cross-Disciplinary Relationships

- assessment of community engagement and team-based practice in facilities the provision of preventive care and care coordination, including ACOs, health systems, systems or long term care systems, facilities and extended care services, using and building upon nationally endorsed measure sets (e.g., the ACO measure set), associated with team mix.

Diversity and Retention

- workforce retention by discipline area, geographic region, organization, industry, and employment vs. unemployment
- community level minority representation of the health workforce as represented in census data
- amount of variation in the number of health workers from ideal forecasting at the state level and smaller relevant geographies, e.g. Health Professional Shortage Area (HPSA), Medically Underserved Area (MUA), Primary Care Shortage Area (PCSA), county, etc.
- the ratio of discipline-specific workers to the baseline needs of specific populations, using census data
- cultural competency scores on existing standardized tools for person and family experience

Although the remaining three domains are essential, the current state of the evidence base and availability of data sources to support robust measurement in these areas present significant challenges to measurement. These are primary reasons for the dearth of measures of the health workforce that look beyond enumerating the health workforce and the units of time workers spend delivering care. However, HHS partners, the Committee, and key informants ([Appendix E](#)) to this process noted that work is underway to make additional data sources available, and

there are pockets of research and innovation in which evidence is being developed to support measurement in the domains of workforce recruitment and retention, assessment of community and workforce needs, and improved workforce and person and family experience, as well as the high priority domains identified above. Measures of health workforce training outputs, by clinical type, clinical focus, and practice location have been developed for some health professions, and the methods by which these can be re-assessed and maintained have been demonstrated.^{8,9,10,11,12} Such measures are relevant to the IOM's most recent call for training accountability (2). However, these measures are not available for most health workers and were not the focus of this report.

Research Recommendations

The Committee's research recommendations focus on enhancing the knowledge and understanding of the relationships among the health workforce, and the structure, processes, and outcomes of improved health workforce deployment. One priority area is learning how the variation in state practice laws affects efficient health workforce deployment. Another is understanding the various compositions of collaborative, interprofessional care teams (which can include direct-care workers and family caregivers) and how they influence access and outcomes. The quantifiable impact of health information exchange at the point of care delivery, and the effectiveness of person and family use of technology to help manage chronic conditions are also areas for further research. The Committee noted that innovative public and private partnerships will be required to advance cross-cutting and systems-focused research, and that some of this coordinated work is currently underway.

The Committee discussed at length the tension between effectiveness, efficiency, and quality in the measurement of health workforce deployment for prevention and care coordination. It was

noted that this tension will only increase as the field works to deliver high quality care at a lower cost. Workforce mix and the types of preventive services provided within any health or long-term care system are already evolving. It was stressed, however, that in measuring the workforce, quality of care should always be the priority.

In addition, future measurement efforts must move beyond single worker estimating models to determine health workforce needs for care coordination and prevention; what is needed are measures derived from models that incorporate overlapping scopes of service and different models of care in meeting person and family needs, and that have a person and family centered perspective. Measure development should focus on measures of health workforce deployment and use with the greatest impact on health outcomes, including public health initiatives; measures that improve the overall delivery of care; improve communication across all levels of care, and focus on person and family reported outcomes and perceptions of the care they receive. Some areas with the greatest potential for transforming how the health workforce delivers care lie outside the traditional healthcare system and within the communities, particularly for high-need, at-risk individuals with the most need for social services. New clinical and community resource coordination programs have begun to explore strengthening these connections and can show promise with adequate funding.

The timing of the bulk of the Committee's work was such that the panel was unable to factor in burgeoning new work in this topic area, which will dramatically impact and improve workforce measurement. Members cited several examples of important initiatives which will move the field forward toward measurement that will broaden the current scope of measurement related to workforce deployment to promote effective prevention and care coordination, particularly for vulnerable populations and under-resourced geographic areas. Members also articulated a

critical need for additional efforts to examine potential measure concepts that better reflect recent work and to further address the important areas of measurement identified by the HHS Interagency Task Force:

- moving toward a value-based system
- using workforce levers at the federal level to improve access to primary care (Medicare and Medicaid payment policy, Graduate Medical Education and other workforce training programs, loan and scholarship programs, and promotion of quality and efficiency through delivery system reform)
- making full use of every member of the healthcare team
- aligning the workforce to population needs, and
- transforming healthcare delivery through workforce innovation

Several other contemporary workforce policy efforts are aligned with these areas identified by HHS as priorities:

- A proposed rule for HPSAs and Medically Underserved Areas (MUAs) designation is working its way through HHS and will have health workforce measurement requirements
- The IOM report on GME Financing and Governance report recommendations have several physician measurement needs (2)
- The Agency for Healthcare Research and Quality's (AHRQ) and the National Center for Health Statistics (NCHS) are developing a physician workforce survey that includes measures of other workers in clinical settings
- Several HRSA program areas have been in search of meaningful workforce measurement including Titles VII and VIII of Section 747 of the Public Health Service Act (PHSA),¹³ and the Teaching Health Center Graduate Medical Education (GME) program¹⁴

RELATED EFFORTS IN HEALTH WORKFORCE MEASUREMENT

NQF Consensus Development Projects

Achieving the NQS aims of better care and healthy people/healthy communities requires an adequate supply and distribution of a well trained workforce that can promote best practices for prevention and care coordination. However, only limited work that broadly examines the link between health workforce deployment, and improved quality of care has taken place to date. Only a handful of health workforce measures have been brought forward for endorsement across various topics areas and to date NQF has only endorsed a small number of structure and process workforce measures.

As part of its focus on improving population health,¹⁵ NQF commissioned a paper to identify an analytic framework for population health assessment and measurement, in which ten essential public health services or domains were highlighted, including the need to “assure a competent public health and personal health workforce.”¹⁶ NQF work related to nursing home care¹⁷ examined the link between staffing and quality of care, and resulted in the endorsement of workforce related measures specific to nurse staffing. NQF has also broadly reviewed its portfolio of NQF-endorsed measures and called out measure gaps in the adequacy of the oral health workforce. Additionally, in the area of safety, NQF mapped several measures to the NQS safety goals which touch on workforce issues.¹⁸

In its **Healthcare Disparities and Cultural Competency Consensus Standards** work, NQF addressed disparities and cultural competency, established criteria to evaluate disparities-sensitive measures, and endorsed over 35 measures. The

endorsed measures include measures specific to workforce and communication, drawn from the nine domains of the **Communication Climate Assessment Toolkit** (CCAT) in the areas of workforce development, organizational support for workforce engagement of all individuals, organizational assistance enabling the workforce to understand the sociocultural factors of the community being served, and workforce training in accessing and using language services.¹⁹

NQF Measure Prioritization Projects

The workforce is a foundational element for promoting health and for delivering high-quality care. Four concurrent projects currently underway at NQF focus on the identification and prioritization of measure gaps—and the composition and deployment of the workforce has relevance for all of them.

The effort to prioritize care coordination measures is perhaps most closely related to the discussion of health workforce measures. This project seeks to identify measures that bridge clinical care and community health within the context of a health neighborhood, requiring a workforce with training, skills, and expertise oriented toward social as well as medical issues. The effort to prioritize adult immunization measures also has a community focus that will stretch the accountability of performance measurement to providers and health workers outside of hospitals and physician offices.

The effort to prioritize person- and family-centered care and outcome measures also brings much to bear on the workforce through its emphasis on the delivery of care that is based on a person or family's goals and preferences. This project

emphasizes important humanistic elements such as compassion and respect, often considered “soft skills” that are not necessarily part of today’s medical or health education programs. The closely related project focused on measures for **Alzheimer’s disease and related dementias** similarly speaks to the need for a different kind of workforce that can work *with* persons with challenging and complex conditions and situations in partnership to achieve their goals as they are able to define them.

HHS Interagency Task Force

HHS’s Interagency Health Workforce Task Force was established to examine ways to build the healthcare workforce and improve the delivery of healthcare services, particularly primary care services, across the nation. Their work is guided by five key principles for workforce reform:

- moving toward a value-based system,

- using workforce levers to improve access to primary care,
- making full use of every member of the healthcare team,
- aligning the workforce to population needs, and
- transforming healthcare delivery through workforce innovation.

Federal influence over workforce policy includes:

- Medicare and Medicaid payment policy
- Graduate Medical Education and other workforce training programs
- Loan and scholarship programs
- Promotion of quality and efficiency through delivery system reform²⁰

Additional work is recommended to specifically address the principles or levers outlined in the Task Force paper.

CONSIDERATIONS FOR MEASURE DEVELOPMENT

Structural measures of the health workforce include features of healthcare organizations or personnel that can influence the capacity to provide high quality care coordination and prevention. These could include organizational policies and procedures, systems, and experience of staff. Structural measures are often blunt instruments for assessing quality; yet good structure, sufficient resources, and proper system design are the foundation for protecting and promoting quality of care. Health workforce structure measures include allowable activities and scope of practice laws, the skills mix of care teams, composition of primary care practices, and components of education and training.

Process measures focus on healthcare-related activities performed for, on behalf of, or by a person or family. Workforce process measures relate to how the workforce is deployed, types of workers delivering specific care, use of team-based care, and use of health information technology.

Health workforce outcome measures can center on access: assessing the ability for individuals to get access to a provider when they need one, whether the service is received in a timely manner, and whether they receive the knowledge and learn the skills they need to attain and maintain health. Satisfaction and experience with care are also in this category.

NQF conducted a preliminary environmental scan of measures ([Appendix C](#)) and measure concepts and identified several examples of structure process and outcome measures, which are mapped to domains and subdomains relating to healthcare workforce deployment for prevention and care coordination. One example of an existing workforce structure measure that is mapped

to the workforce capacity and productivity domain within the framework is the CMS measure assessing the “percent of primary care physicians who successfully qualify for an electronic health record program incentive payment.”²¹ Another is NQF-endorsed measure #1898, “health literacy measure derived from the health literacy domain of the C-CAT,” developed by the American Medical Association (AMA). It is a measure of health literacy related to person-centered communication, and is derived from items on the staff and individual surveys of the Communication Climate Assessment Toolkit. This measure is mapped to the domain of experience within the framework.

An example of a process measure is an NQF endorsed cultural competency implementation measure, #1919 which is an organizational survey designed to assist healthcare organizations in identifying the degree to which they are providing culturally competent care and addressing the needs of diverse populations, as well as their adherence to 12 of the 45 NQF-endorsed[®] cultural competency practices prioritized for the survey. The target audience for this survey includes healthcare organizations across a range of health care settings, including hospitals, health plans, community clinics, and dialysis organizations. Information from the survey can be used for quality improvement, provide information that can help health care organizations establish benchmarks and assess how they compare in relation to peer organizations, and for public reporting. This measure is mapped to several domains within the framework: workforce diversity and retention; infrastructure and training, retraining and development.

An outcome measure related to the health workforce is #0166 HCAHPS, a measure under

review as of this writing, which includes a 27-item survey instrument with 7 domain-level composites including: communication with doctors, communication with nurses, responsiveness of hospital staff, pain control, communication about medicines, cleanliness and low noise levels of the hospital environment, and discharge information, developed by the Agency for Healthcare Research & Quality (AHRQ).²² The measure is mapped to the domain of experience within the framework.

These measures served as a backdrop to the work of establishing the framework domains and identifying potential measure concepts that could be mapped to each domain.

CONCEPTUAL FRAMEWORK

The Committee developed a conceptual measurement framework informed by foundational work to analyze and prioritize measurement needs to improve health workforce deployment in the areas of prevention and care coordination. In addition to guidance and recommendations of key advisors, HHS and a review of the literature, existing frameworks specifically integrated into this work included:

- **AHRQ’s Care Coordination Measures Atlas** (CCM Atlas)
- **AHRQ’s Clinical-Community Relationships Measures Atlas and Evaluation Roadmap** (CCRM Atlas)
- **IOM’s Health Professions Education: A Bridge to Quality**, and
- **NQF’s Multiple Chronic Conditions (MCC) Measurement Framework**.

While focused primarily on the professional and paraprofessional workforce as a more feasible opportunity for measurement, the framework also incorporates the important roles of family caregivers in promoting prevention, care coordination, and in reducing disparities as well as their expanding role which includes providing care of the kind and complexity once only provided in hospitals.²³ The framework is intended to encompass measurement across settings and across the lifespan, provide information regarding considering how accountable entities may be identified, and how measures may be reported at appropriate levels of analysis.

Several influencing factors informed the discussion of gaps in health workforce performance measures: the influencing factors cited within the HHS Interagency Task Force report such as population growth, the aging of the population, the growing burden of chronic diseases across all age groups, the adoption of new technologies

in medical practice, the anticipated retirement of baby boom health care practitioners, and the expansion of insurance coverage through the ACA,²⁴ and important overarching issues that may impact performance measurement. Overarching issues include policy constraints (e.g., regulations, fiscal realities, and changing payment models, diverse needs and resources of communities); current and future workforce trends and needs (e.g., an aging workforce); population demographics (e.g., social and cultural factors); and data elements and sources needed to inform evidence-based measurement.

Framework Definitions

The following working definitions guided the project and the recommendations of the Committee for measure concepts relating to health workforce deployment. In this context the term “deployment” refers not just to health worker assignment or scheduling, but refers to the deployment of health workers that are well prepared to deliver effective and efficient person-centered, culturally sensitive care, and to deliver care as part of interprofessional teams in the provision of preventive care and in the coordination of care.

Health workforce. The World Health Organization (WHO) defines the health workforce as “all people primarily engaged in actions with the primary intent of enhancing health.” The WHO definition notes that workers are not just individuals but are integral parts of functioning health teams in which each member contributes different skills and performs different functions. Nonclinical workers are included in this definition, as well as health systems workers, thus broadening the scope beyond traditional healthcare providers. As a result, the term workforce includes the clinical workforce (e.g., physicians, nurses, etc.);

the nonclinical workforce (e.g., public health and human service professionals); and long-term services and supports (LTSS) personnel (e.g., home health aides, certified nursing assistants, personal care attendants).

Care coordination. NQF adopted the CCM Atlas' broad definition of care coordination as "the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of healthcare services. Organizing care involves the marshaling of personnel and other resources needed to carry out all required patient care activities and often is managed by the exchange of information among participants responsible for different aspects of care." In keeping with the CCM Atlas, successes and failures in care coordination are captured in the draft framework from the perspective of persons and families, healthcare professionals, and system representatives.

The CCM Atlas notes that individuals perceive care coordination failures in terms of unreasonable levels of effort required on the part of themselves or their informal caregivers during transitions between healthcare entities. Healthcare professionals in turn consider instances when individuals are directed to the "wrong" place in the healthcare system or have poor health outcomes as a result of poor handoffs or inadequate information exchanges as failures to effectively and efficiently coordinate care. They also perceive failures in terms of unreasonable levels of effort required on their part in order to accomplish necessary levels of coordination during transitions among healthcare entities. The CCM Atlas includes the perspective of systems of care the goals of which are to integrate personnel, information, and other resources to carry out all required care activities between and among care recipients and families in order to better coordinate care. System representatives perceive failures in coordination as those that affect the financial performance of the system and when a person experiences a clinically

significant negative outcome resulting from fragmented care.

Additionally, the experience of care coordination from the perspective of the community and volunteer workforce should be considered. These perspectives may be important for comprehensively measuring the performance of the health workforce in coordinating care and providing preventive care.

Primary care. The IOM definition of primary care informed this work: "the provision of integrated, accessible health services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community." The definition was developed by the IOM Committee on the Future of Primary Care as part of a two year study to address opportunities for and challenges to reorienting healthcare to emphasize the function of primary care. This work is also informed by the CCRM Atlas, which focuses on the role of a primary care practice in providing for and recognizing the need for preventive health services. This includes arranging for the delivery of services not provided in the primary care setting (i.e., providing referrals to community resources), as well as the differentiation between clinics/clinicians and community-based resources.

Health. The WHO definition of health, which states that "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," was enhanced to encourage consideration of an individual's capacity to achieve and maintain health. This expansion of the definition reflects the goal of overall well-being as well as individual experience with care, and focuses this work on how workforce deployment can improve the capacity of individuals to manage their own health, and the quality of care delivered to individuals.

Prevention. This work was guided by the National Prevention Strategy (NPS) where the intent is to

move to a system of care that includes a focus on wellness and prevention by the most effective and achievable means.²⁵ The framework domains are informed by the NPS strategic directions of healthy and safe community environments, clinical and community preventive services, empowered people, and the elimination of health disparities. For the purposes of this work, all three levels of prevention are considered: primary (disease prevention), secondary (early detection), and tertiary (disease management). The framework is also intended to capture opportunities for measurement across the lifespan and across settings.

Measurement Domains

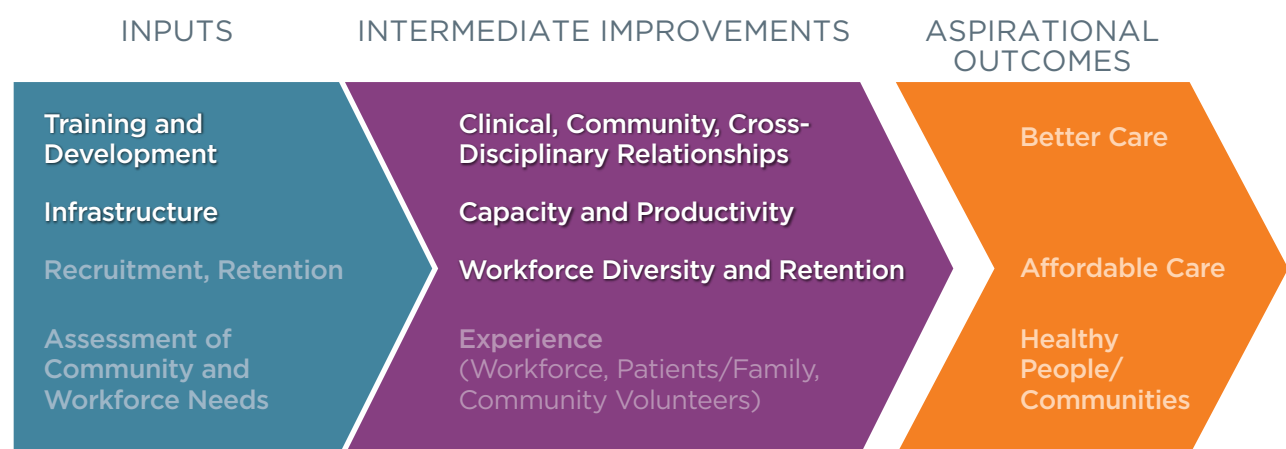
The full conceptual framework ([Appendix D](#)) is presented as a logic model and includes eight domains to reflect inputs, intermediate outcomes, and long-term outcomes. It is designed to produce measures that will assure achievement of the longer term outcomes for a well-deployed health workforce. The inputs and intermediate outcomes

offered ample opportunity for the consideration of high-impact measures and are reflected in Figure 1.

Through a modified-Delphi process, five of the eight domains were prioritized for further recommendations on measure concepts.

Committee members prioritized the infrastructure and training, retraining and development domains as the highest priority for measurement of inputs that are expected to support the deployment of the workforce in the delivery of care coordination and prevention services. Following in priority were the domains of capacity and productivity; clinical, community, and cross disciplinary relationships; and workforce diversity and retention domains as the top priority domains of intermediate outputs for measurement. These priorities are highlighted above. Although assessment of community and workforce needs, experience (workforce, person and family, community volunteer experience), and recruitment and retention were considered important, they were prioritized less highly due to issues related to the evidence base, data availability, and feasibility for measurement.

FIGURE 1. MEASUREMENT DOMAINS



PRIORITIZED MEASUREMENT DOMAINS AND CONCEPTS

Infrastructure. The Committee rated the infrastructure domain as one of the highest priority areas for performance measurement. The domain addresses supports for clinicians, organizations, and systems to better coordinate people and processes. Measurement in this area may address the degree to which a sustainable organizational infrastructure exists to leverage technology and collaborative practice, to optimize service capacity and relationships between workforce and community, and to support the workforce in efficiently and effectively improving quality.

This category includes health information technology (HIT) infrastructure (such as use of EHRs and telehealth/telemedicine capabilities) to support the workforce, enhancements meant to improve access to care in clinics, offices or diagnostic centers, organizational structure that supports interprofessional health care teams, and delivery system design (including participation in person-centered medical homes (PCMHs), accountable care organizations (ACOs), or other new models of care).

Concepts prioritized in this domain include deploying health workers to enhance access and extending the health workforce in shortage areas. Concepts in this category also relate to the HHS Interagency Task Force priorities of making full use of every member of the care team, aligning the workforce to population needs and transforming healthcare delivery through workforce innovation.

As part of an initial exercise, Committee members considered concepts related to the following:

- scope of practice policies,
- staffing policies and practice agreements,
- infrastructure enhancements to improve

access as measured by training and technical assistance ratings,

- organizational use of expanded hours,
- use of nonphysicians for care delivery,
- participation in new models of care,
- relationships with and use of community care resources, and
- organizational planning in terms of assessing community needs and workforce needs.

In prioritizing concepts that were the most impactful, feasible, and forward-looking, however, Committee members highlighted the critical need to assess the use of health information technology (health IT) to support and extend the workforce, and the need to assess infrastructure enhancements that can increase access, including measurement of participation in and leveraging of services related to new models of care such as PCMHs and ACOs. The Committee also emphasized the need to measure organizational efforts related to assessing, facilitating, and connecting persons and families to community supports and resources. Promising measure concepts for the future include assessing how health IT is used, rather than if health IT is used.

Proposed Measure Concepts

The Committee proposed measurement concepts for development in the following areas:

- use of health IT for prior-authorization approvals
- telehealth use for behavioral health management, extension of the health workforce in geographic shortage areas, or for health maintenance, decision-making, and prescribing as appropriate

- measurement of the integration of the personnel needed to facilitate health information exchange into an organization's infrastructure as appropriate
- training programs for workers, focused on the use of health IT to improve access, prevention, care coordination, and its value for quality improvement purposes

Other concepts that were strongly considered but presented feasibility challenges in terms of data source and evidence base include: assessment of the interoperability of health information exchanges (HIEs) across providers; assessment of the ease of access to medical records; and measuring health systems or long term care systems on the percent of time that individuals received appointments when desired or the provider they preferred.

Training and Development. This domain includes training and retraining that is intended to allow workers to deliver care in new models of care such as ACOs, patient centered medical homes (PCMHs) and dental homes, and other coordinated systems of care such as integrated healthcare networks. These models will require the caregiving disciplines to work together in a more coordinated effort over time. Instructor and faculty development and training are included in this category to ensure education will reflect changes to the healthcare delivery system and interprofessional team-based care. In addition, continuing education will be critical to ensure the advancement of a workforce that will meet the needs of persons and families and the system. The Committee did not address measures of institutional training accountability or federal levers identified by the HHS Interagency Task Force.

The primary focus of the recommended concepts in this domain is the deployment of health workers that are well prepared to deliver effective and efficient person-centered, culturally sensitive care, and to deliver care as part of interprofessional teams in the provision of preventive care and

in the coordination of care. These concepts relate to the priorities of making full use of every member of the healthcare team and aligning the workforce to population needs. The Committee initially discussed recommending a common set of core competencies and training for specified workforce roles, and work in this area is currently underway. This includes work to transform health professional education by the American Medical Association (AMA) (Accelerating Change in Medical Education), the IOM global Forum on Health Professions Education, and work by health profession accrediting bodies, such as the Accreditation Council for Graduate Medical Education (ACGME),²⁶ the Interprofessional Education Collaborative (IPEC)—which includes the Association of American Medical Colleges (AAMC), American Association of Critical-Care Nurses (AACN), American Association of Colleges of Pharmacy (AACP), American Dental Education Association (ADEA), American Association of Colleges of Osteopathic Medicine (AACOM), and Association of Schools and Programs of Public Health (ASPPH)²⁷—and work by the AAMC on Core Entrustable Professional Activities for Entering Residency.²⁸

In prioritizing concepts, however, competency in the care of frail older adults and persons with disabilities was identified as a top priority. Recommended concepts in this domain have important care coordination and preventive care implications with regard to competencies in the care of frail older adults and those with disabilities, the existence of training and retraining programs for workers to practice in new models of care, the number of instructors or faculty to teach and the number of training or retraining hours devoted to practice in new models of care. The Committee stressed that a larger paraprofessional and direct workforce will be needed, and that scope of practice and organizational practices empowering health workers to work to the full extent of their education, licensure, and skill level is a very feasible place to begin measurement to improve the effectiveness and efficiency of the workforce,

particularly as workforce shortages in certain areas intensify. Committee members specifically noted the work of the American Geriatric Society to develop health professional training modules in geriatrics, and data can be gathered via surveys that are already in place, with some changes. The goal would be to assess whether educational institutes are aware of and have implemented new competencies and compare data at specific time periods to see if uptake improves over time. Several organizations have also been actively involved in the development of curricula, competencies guidelines, and training which may provide opportunities for measure development.²⁹

One proposed measure concept is the evaluation of instructors or faculty available to teach in new models of care and competencies. This concept is aimed at ensuring health profession schools are recruiting and supporting adequate numbers of instructors or faculty to train workers in the pipeline in new competencies, whether health workers are caring for older adults, frail elders and disabled persons, managing chronic disease, or providing palliative care. Data could be gathered by using data that is already being collected via surveys by parent organizations of colleges of nursing, medicine, podiatry, pharmacy, social work, and other disciplines. Once data are analyzed, gaps could be identified and addressed to increase the capabilities of the schools.

Assessing hours of training in educational programs or institutions in delivering care in new delivery systems is a concept related to ensuring that students have exposure to working on interprofessional teams, new delivery systems (e.g., in an ACO or a PCMH or integrated care model), and exposure to community-based work. It should be noted that student also need role models as well as exposure to working on interprofessional teams. This concept was identified as essential to predispose future healthcare workers to serve in these environments. Educational institutions could be surveyed, using current, modified instruments.

In addition to training workers entering the

workforce in new models of care, measures may be necessary to assess the retraining of health workers who have traditionally served in inpatient settings, and who may be called upon to transition to outpatient settings to support newer models of care. States are examining and defining potential measures that will allow them to understand what models of care are needed, particularly in the areas of mental health and oral care. The National Governor's Association is leading much of the work in this area and can be a potential source of data and evidence development.³⁰

Proposed Measure Concepts

The Committee proposed measurement concepts for development in the following areas:

- inclusion of core competencies for the care of frail older adults and persons with disabilities within educational programs or institutions
- availability of instructors or faculty in educational programs or institutions who can teach new competencies needed for new models of care (hours and re-teachability are assessed)
- number of hours of training that educational programs or institutions devote to team-based practice, person-centered care, and to providing care in new care delivery models
- availability of training/retraining programs within health systems or long term care systems/facilities for workers in team-based practice, person-centered care, and to providing care in new care delivery models

Aspirational measure concepts were also raised, such as assessment of whether health systems or long term care systems or ACOs have care plans in place, and if they are being used. The goal is to assess the actual availability of interprofessional care plans and their development, particularly for vulnerable people in systems or in practices. Committee members identified a current CMS demonstration project related to ensuring that every individual

has a care plan. Whether physicians or nurse practitioners are aware of and using the care plan could be assessed at the system, or ACO level. The use of a care plan could be a proxy for interprofessional activity and practice. Another concept concerning the development or adaptation of interprofessional curricula that can be applied to all health profession educational programs or institutions was discussed, and the work of the Interprofessional Education Collaborative, the Association of American Medical Colleges (AAMC), and other partners regarding interprofessional training was discussed as a potential model.

Capacity and productivity. This domain captures improved effectiveness and efficiency in the provision of care and the geographical distribution of the health workforce. Committee members discussed equipping and deploying workers where they are needed for efficiency and aligning the workforce to population needs. The Committee considered measurement focused on health plan network adequacy, understanding the experience of the workforce, understanding individual and family perceptions of care provided by the workforce, and understanding the distribution of workers versus community needs and impacts on preventive care and care coordination.

Prioritized concepts for measurement include assessing access to clinicians and social workers and other professionals that help with nonmedical issues in large health or long-term care systems; and assessing person and family perception of care and the adequacy of team-based care. Using the ACO CAHPS survey with the inclusion of workforce metrics is a potential way to gather the data. Capturing the mean score for cultural competency on existing standardized tools for person and family experience of care, and measures that could be used as a proxy for health outcomes were also identified.

Proposed Measure Concepts

The Committee proposed measurement concepts for development in the following areas:

- access to appropriate health care provider measured by percentage of instances individuals received desired appointments or saw desired professional
- person and family overall experience of care delivered by interprofessional teams
- person and family perceptions of the adequacy and efficiency of team-based care
- provider/facility level for cultural competency captured on existing standardized tools for experience of care for persons and families

The Committee initially proposed a measurement concept for infant mortality rates compared to healthcare workforce within geographic boundaries amenable to clinical, community, or policy interventions at the national or state level, intending the concept to be used as a proxy for health outcomes. However, the Committee was subsequently made aware that there is movement away from using infant mortality rates for this purpose for reasons including the low prevalence of this event, and the difficulty of accurate measurement at the national and state level.³¹ Additional input from Committee members and the public suggests that measurement in other areas such as Health Professional Shortage Areas (HPSAs) for primary care, mental health and oral health is more appropriate; HPSA designations are based in part on the supply of health professionals serving the community or population that is designated.

The concept of whether persons and families are able to use after-visit data via an electronic form or to access services through technology, including the ability to consult with clinicians through telemedicine and evolving patient portals, was deemed impactful, but a lower priority due to the difficulty of accurately measuring these concepts. Other concepts that present feasibility concerns include a concept assessing the geographical distribution of the workforce by examining a ratio of health workers to population by defined geographic area using census data.

This concept is problematic because results could be skewed for occupations with limited presence in a geographic area. Assessing whether information is provided to individuals regarding physician quality, availability and price, facility use of team-based care approaches, and team composition were determined to be important but potentially challenging concepts due to limited data availability and definitional issues concerning team and team-based care.

Clinical community and cross-disciplinary relationships. Assessment of clinical and community cross-disciplinary relationships is a priority, including assessment of interactions with public health and community resources on behalf of consumers, and knowledge and use of community services to address social determinants of health. It is expected that these relationships will be strengthened by increasing the familiarity of the health workforce with community resources; using team-based plans of care; using surveillance systems to monitor population health; and improving coordination with financial, education, and social services to support care and strengthen interorganizational relationships. All of these factors aim to make healthcare professionals and community resources proactive and ready to provide care.

In an early Committee exercise, concepts were raised related to workforce deployment in terms of distribution and enumeration, multidisciplinary care plans that include use of community resources, numbers or percentages of persons referred to a community health educator referral liaison, and actions taken by organizations and clinicians to respond to person and family, and community needs. However, through extended discussion the Committee identified one forward looking, impactful, but moderately feasible measure concept related to evaluating the composition of teams that are performing well on national measure sets and assessing the performance of systems, ACOs, facilities, or practices on national measure sets, including the

ACO measure set, compared to team mix.

Proposed Measure Concept

- Assessment of the performance of ACOs, health or long-term care systems, facilities on nationally endorsed measure sets (e.g., the ACO measure set), associated with team mix.^{32,33}

A promising, but perhaps more challenging concept identified in this domain related to measuring the use of practice resources and contacts within the community by capturing the number of clinical to community referrals. The aim of this concept is raising healthcare worker awareness of community resources and understanding how they are using these resources. The Committee discussed measure concepts related to facility use of team-based care or approaches to improve care coordination and prevention, but because of the evolving nature of team-based care, deemed these as lower priority.

Diversity and retention. The diversity and cultural competency of the workforce is expected to improve with increased minority representation and improved cultural competency of the workforce. It is expected that deployment of the health workforce will improve with improvement in workforce satisfaction resulting in increased retention and/or reduced turnover. Committee members identified retention planning as an underlying driver of workforce turnover, and they noted that it is essential to reduce areas of underservice, and align the workforce with population needs in terms of employing a workforce that is culturally sensitive and representative of the community in which they serve to more effectively and efficiently provide care. Concepts related to the percentage of persons reporting that their healthcare provider explained things in ways they could understand, the percentage of clinicians that leave the workforce, and assessment of the make-up of the workforce by worker background were considered.

The Committee ultimately proposed high

impact and feasible concepts related to workforce retention and reduction of turnover as measured by: discipline area, geographic region, organization, industry, and employment vs. unemployment, and a concept for community level minority representation of workforce as represented in census data. Assessing the level of standard deviation from ideal forecasting at the state level with the aim of identifying the accuracy of workforce forecasting, using the state Standard Occupational Classification (SOC) system and the stated ideal number of health workers was also proposed. It is expected that states could use the metric to understand whether and how to adjust the numbers for their state. For example, if states are above the ideal, they understand they should hire less; below it, they should recruit more workers. In terms of understanding retraining needs by discipline, the same approach could be used.

Other prioritized concepts are: assessing the ratio of discipline-specific workers to the baseline of specific populations using census data which collects occupational data for the SOC and providing a way of comparing the diversity of a community and the diversity of the health workforce within that community; and finally, the mean score on existing standardized tools for person and family experiences as it pertains to cultural competency.

Proposed Measure Concepts

The Committee proposed measurement concepts for development in the following areas:

- workforce retention by discipline area, geographic region, organization, industry, and employment vs. unemployment
- community-level minority representation of the health workforce as represented in census data
- amount of variation in the number of health workers from ideal forecasting at the state level
- the ratio of discipline-specific workers to the baseline needs of specific populations, using

census data

- cultural competency scores on existing standardized tools for person and family experience.

The Committee agreed that one area to explore for measurement relates to assessing target retention and recruitment numbers by states, which are typically categorized by workforce discipline, and measuring how large health or long-term care systems, vary from those target numbers in their retention and recruitment of health workers by discipline. Currently, development of this metric is hampered by limited available data and the need to develop additional evidence on which to base this type of measurement.

Research Recommendations

The Committee identified issues regarding the development of future workforce structure, process, and outcome measures, including the need to establish evidence bases in several domains, identification of data sources and details of how the data should be presented, and also raised important broader issues in workforce deployment.

Interprofessional, team care. Specific ways in which teams can increase effectiveness of care and help eliminate waste still need to be studied. Entirely new health professions, such as care navigator and care coordinator, could vary depending on the needs of persons and families. Teams, while primarily led by clinicians, could include members with diverse sets of skills, including licensed, certified social workers whose key tasks include assessment of person and family needs and functional capacity and needed referrals, and care “navigators” who coordinate supports within the community. Direct care workers and family caregivers are also included in care teams, and have the intimate, daily interaction with individuals receiving care, that no other member of the team has, and can play a crucial role in recognizing early warning signs

of complications. Research and review of current, rapidly moving initiatives in this area is needed to achieve greater clarity about the team members, their roles and impacts on outcomes.

The Committee identified research needs involving to the need to define terms relating to collaborative, interprofessional care teams: the composition of teams and the functional roles within them, the functions of “care coordinators” and “care navigators,” and the need to account for influencing factors such as changing payment models, and community specific needs. Related to this, qualitative descriptions of how the workforce is deployed are needed from researchers, in order for developers to understand potential impacts across a variety of scenarios and precisely how team-based models are implemented.

Although the configuration of interprofessional care teams for transitional care and long-term management of chronic conditions require further research, along with impacts on workforce and person and family experience and outcomes, there are existing models that primarily focus on transitions of care during and after hospitalization. These include the Transitional Care Model, an intensive, nurse-led care management program provided to high-risk seniors during and after hospitalization,³⁴ and the Care Transitions Model that begins when an individual is scheduled to be discharged from the hospital and is focused on helping older persons at high risk for complications or rehospitalization.³⁵ The Bridge Model focuses on long-term, comprehensive chronic condition management and is a person-centered, social work-led, interprofessional model of transitional care. In addition, current work supported by the Robert Wood Johnson Foundation is now exploring how innovative workforce models can be replicated and adopted by primary care practices across the country, the *Primary Care Team: Learning from Effective Ambulatory Practices* (LEAP) project. The LEAP project is fostering an online learning community for others to converse and share best practices,

and developing a toolkit to distill their insights for others’ use. The Committee is also aware of many state and private efforts on interprofessional team deployment models, and articulated a critical need for additional efforts to examine potential measure concepts in this area to better reflect recent work.

Scope of practice. Because of the influence scope of practice has on how clinicians are deployed and, in turn, how they are prepared for practice, the development of scope of practice measures within the training, retraining and development domain at a population level may be very challenging given the variation of laws governing licensure across states and the need for culture change. This makes the creation of measure specifications that can be universally applied for accountability very difficult. Research is needed comparing scope of practice laws across the country to establish a baseline for examining best models, and assessing the variability of state laws related to the scope of practice for physicians, dentists, nurses, nurse practitioners, direct care workers, and others to get a sense of the areas of greatest variability.

Other research recommendations that rose to the top include recommendations to:

- study relationships between clinical educational institutions’ curriculum and projected population health needs
- study international models that require medical students practice in underserved areas, and
- develop evidence regarding compensation levels, caseload and case mix that improve workforce experience and retention.

The study of highly evolved patient portals like those employed in large health systems such as Geisinger and HealthPartners is also recommended.

Data sources. The Committee discussed the pros and cons of various existing data sources, development of new data sources and potential costs and burdens associated with measurement. Data sources for measure development include

public sources such as census data, data available at the HRSA National Center for Health Workforce Analysis³⁶ and the National Ambulatory Medical Care Survey (NAMCS); literature; universities; community based organizations; practitioner data from employers, certifications, and renewals; patient data from surveys; and administrative claims data. Accessing some pools of data may require the development of relationships.

New data sources are being developed, and one example is the current work of the National Center for Interprofessional Practice and Education, a public/private partnership with HRSA, the University of Minnesota and private funders, to develop a National Center Data Repository to study many elements of aligning clinical practice transformation with interprofessional education. The National Center has a growing network of practice and education partners to collect data around workforce development that is connected to the NQS three-part aim of better care, affordable care, and healthy people/communities.

Funding for data source development is an influencing factor and that it is important to first determine what metrics of workforce deployment will deliver real impact, and use the results of this analysis to inform the development of data sources to support measurement. For example, by looking at demand and understanding which professionals are most needed and cost effective in terms of outcomes and quality, developers would be able to understand the pressing workforce needs.

Committee members also discussed the importance of retraining the current workforce in the use of health IT to capture and analyze data in order to meet the demands of implementing performance measures. The Committee agreed that it is important to understand from providers and other measure end-users what is needed to meet the measurement burden. It also agreed that existing data collection efforts should be leveraged.

CONCLUSION

Overall, future measurement efforts should avoid bucketing providers by specialties in determining workforce needs for care coordination and prevention. Focus should be on measures that are fluid and dynamic and have a person and family centered perspective. Users of measures should be able to recognize what is needed in terms of overlapping services and different models of care in meeting person and family needs.

Measure development should focus on measuring the activities that are most powerful in attaining and maintaining better health. These include public health initiatives; measures that improve the overall delivery of care; improve communication across all levels of care, and focus on person and family reported outcomes and person and family perceptions of the care they receive. Measure concepts that will have a high impact and that are feasible with current evidence and data have been identified to begin to address existing needs, in the domains of infrastructure, training, retraining and development, improved capacity and productivity, clinical, community and cross disciplinary relationships, and workforce diversity and retention. However, some areas with the greatest potential for transforming how the health workforce delivers care lie outside the formal healthcare system and within the communities, particularly for high-need, at-risk individuals with the most need for social services. New clinical and community resource coordination programs have begun to explore strengthening these connections and can show promise with adequate funding.

The timing of the bulk of the Committee's work was such that the panel was unable to factor in burgeoning new work in health workforce deployment, which will dramatically impact measurement in this area. Members cited several examples of important initiatives which will move measurement forward and will broaden

the current scope of measurement related to workforce deployment to promote effective prevention and care coordination, particularly for vulnerable populations and under-resourced geographic areas. Committee members articulated a critical need for additional efforts to examine potential measure concepts that better reflect the thoughtful and timely results of this recent work. Specifically, NQF could be an important partner in offering additional guidance to inform measurement development efforts related to recent workforce events including:

- The IOM Report on GME Financing and Governance
- The HHS Interagency Task Force principles and federal levers
- AHRQ/NCHS/CDC work, *Collecting Data on Physicians and Their Practices Final Report*

Such a review could focus on measurement that assesses community problems with access to care, to accountability for training institution funding, for improved deployment, specifically geographic dispersion, and to improved recruitment, debt avoidance, and retention measurement.

The Path Forward: Challenges and Opportunities

Health workforce deployment is a rapidly evolving area for quality and performance measurement, which makes the work of this Committee so important. Overall, the Committee agreed measurement of the deployed health workforce must begin by assessing the needs of the population being served in order to understand which improvements to the system are required. In particular, measurement of the effectiveness and efficiency of deployed workforce in the provision of preventive care and care coordination was discussed as a critical but difficult area. Always

linking quality with efficiency was emphasized, and aspirational concepts in this area include tracking the number or percent of times an individual is touched by each health worker and comparing these metrics to population health metrics such as infant mortality rates or child vaccination rates to determine correlations. A conceptually difficult but impactful concept is the assessment of the team mix that provides the best outcomes and the highest efficiency. This could be examined in terms of professional certifications and/or credentials, or the percent of the team working to the top of their education and training. Connecting efficiency to the health workforce can also be examined for a given population of people to determine the most effective mix of workers and also the most economical mix. With new models of care, it is expected that high-functioning efficient systems will become increasingly identifiable and standards regarding worker mix will emerge.

Key challenges were identified in the areas of determining appropriate levels of analysis and accountable entities, assigning shared accountability, and research needs. In developing health workforce measures, the Committee suggested that healthcare look to other high functioning systems and incorporate some of their best practices in order to enhance effectiveness and efficiency in cross-cutting areas.

Infrastructure. While the proposed measure concepts in this domain focused on health IT, substantial additional work is needed to examine other facets of infrastructure and identify measure concepts in this area and their relation to improved health workforce deployment. Public comments from experts and organizations suggest that work is needed to standardize and define the roles of the personnel needed to facilitate data exchange (e.g. data analysis, personnel who understand ERHs and large datasets and personnel and tools for translating data in order to understand needs and outcomes) and urged consideration of additional measure concepts related to all aspects of health IT implementation.

Training and development. A key concept in this domain that is person-centered and that will promote future improvements in workforce deployment rose to the top: measurement of collaborative, interprofessional team care. The feasibility of measurement in this area is limited, but work is underway to leverage existing data sources, create new sources, and strengthen evidence bases. The Committee acknowledged important recent work in this domain and noted that most of the models have the potential to improve efficiency, and may be different depending on the environment, but there is still the outstanding question of what the composition of teams should look like. Defining new categories of workers and understanding how they might be expected to function on a team is in flux, although in the future, inclusion in the Standard Occupational Classification supported by the Bureau of Labor Statistics may allow researchers and developers to clearly define job categories. Committee members and the public also suggest measurement of whether workers' level of training or retraining is adequate to meet consumer needs.

Capacity and productivity. Achieving greater clarity about the team members and their roles will support understanding the evolution of roles and team composition. Committee members noted the need for additional evidence based measure concepts, including concepts related to demand for healthcare workers, and substitution impacts on demand. Additional input from Committee members and the public also suggest defining productivity, considering measurement focused on health plan network adequacy, and examining measure concepts for access to long-term care services and support. It is also noted that there is a need to invest in data collection regarding actual workforce capacity in order to move away from relying on proxies for capacity.

Clinical, community and cross-disciplinary relationships. Although this domain is a high priority area, there is currently only one moderately feasible measure concept identified

in it. Committee members note that this is inadequate, and additional work is needed to explore, for example, approaches to assessment of the effectiveness of care coordination workforce strategies on improvements in processes of care, such as increased rates of preventive screenings as well as outcomes, including reductions in ambulatory care sensitive emergency department visits and hospitalizations, and effective chronic disease management. Considerable work is underway in this domain, in particular work within Innovation Models at the Center for Medicare & Medicaid Innovation ([the Innovation Center](#)).

Diversity and retention. The need for deeper analysis of potential measure concepts related to diversity and retention was also highlighted,

moving beyond measuring numbers of workers and racial make-up to more sophisticated measurement of impacts of diversity on effective care delivery and health outcomes, and measurement at multiple levels. Additional input from the public suggests measurement of nursing hours per patient day as decreased staffing is associated with burnout and decreased satisfaction³⁷, and measure concepts that draw on the Agency for Healthcare Research and Quality (AHRQ) Survey on Patient Safety Culture, and the Press-Ganey Employee Voice survey, as these are helpful in assessing the types of environments that enhance employee diversity and retention.^{38,39,40} Research to develop other tools to measure cultural competency should also be conducted.

ENDNOTES

- 1 HHS. *A 21st Century Healthcare Workforce for the Nation*. Washington, DC: HHS, Office of the Assistant Secretary for Planning and Evaluation; 2014. Available at http://aspe.hhs.gov/health/reports/2014/HealthCare_Workforce/rpt_healthcareworkforce.cfm. Last accessed June 2014.
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APPENDIX A: Project Approach and Methods

General Approach and Timeline

NQF used the approach and processes shown in Figure 1 and as detailed below to complete this project.

FIGURE 1. FOUR STEP PROCESS FOR HEALTH WORKFORCE PRIORITY SETTING PROJECT

-
- Step **1** Convene Multistakeholder Committee
 - Step **2** Identify a Conceptual Measurement Framework
 - Step **3** Environmental Scan of Measures and Measure Concepts and Analysis of Gaps
 - Step **4** Develop Committee Recommendations and Priorities for Performance Measurement Measure Development

Convene Multistakeholder Committee

NQF convened a 20-member Committee with diverse representation and knowledge of workforce issues pertaining to prevention and care coordination, including representatives from the fields of primary care, behavioral health, allied health, public/population health, cultural competence and diversity, health disparities and safety net providers, Long-Term Services and Supports (LTSS), home and community-based care including both ambulatory and inpatient setting-based services, and consumers or their intermediaries. A small advisory group was formed immediately upon contract award to provide guidance to NQF on the draft conceptual measurement framework while the full Committee was being seated. NQF met with the advisory group via web meeting in October 2013, and

met with the full Committee in a web meeting in January 2014, at an in-person meeting in April 2014, and will meet once more by web in July 2014. Please see [Appendix B](#) for the full Committee roster, which includes these advisors.

NQF also has engaged with a group of federal government partners—the DHHS Health Workforce Interagency Workgroup—in a consultative role. With ongoing exchanges between the two, the work of these two groups is aligned well and will complement one another.

Identify a Conceptual Measurement Framework

In consultation with HHS and with input from advisory members, NQF developed a draft conceptual framework for measurement that captures elements necessary for successful and measureable workforce deployment. The draft framework offers measure domains and subdomains that align with the triple aim of improving health, quality, and cost. The framework was built on existing resources and frameworks listed in [Appendix D](#), including NQF's *Multiple Chronic Condition Framework*, the Agency for Healthcare Research and Quality's (AHRQ) *Clinical-Community Relationships Measures Atlas* and *Care Coordination Measures Atlas*, and the Institute of Medicine's (IOM) *Health Professions Education: A Bridge to Quality*. The framework was shared with the DHHS Health Workforce Interagency Workgroup for feedback. The framework is intended to complement the framework developed by NQF's parallel project focused on care coordination. Finally, the framework was further informed and modified based on input from the Committee.

Environmental Scan of Measures and Measure Concepts and Analysis of Gaps

NQF staff, in consultation with the multistakeholder Committee and DHHS colleagues completed an environmental scan of measures and measure concepts that map to the domains and subdomains of the identified conceptual framework.

An initial scan of the sources used is listed in [Appendix C](#). Iterations of the scan were conducted as the conceptual framework, domains and subdomains were refined. These include structure, process, outcome, efficiency, experience of care, population health, and satisfaction measures as they pertain to effective prevention and care coordination through a workforce lens. While measurement of workforce deployment is in its infancy, measures were identified in the domains of training, retraining and development; infrastructure; recruitment and retention; experience; clinical, community and cross-disciplinary relationships; capacity and productivity, and workforce diversity and retention.

Committee Recommendations and Priorities for Performance Measure Development

The intent of this project is to provide information to the field regarding priorities for performance measure development, and additional research needs when the evidence is insufficient to provide a clear path to measurement in a priority area. The Committee has discussed important considerations regarding measurement in this area including level of evidence, and feasibility of and challenges to workforce measurement, with its recommendations submitted in this report.

APPENDIX B:

Health Workforce Committee Roster

COMMITTEE MEMBERS	
Melissa Gerdes, MD (<i>Co-chair</i>)	Methodist Health System
Ann Lefebvre, MSW, CPHQ (<i>Co-chair</i>)	University of North Carolina at Chapel Hill
Evaline Alessandrini, MD, MSCE	Cincinnati Children's Hospital Medical Center
Howard Berliner, ScD	Service Employees International Union (SEIU)
Barbara Brandt, PhD	University of Minnesota
Amy Khan, MD, MPH	McKesson Care Management
Christine Kovner, PhD, RN, FAAN	New York University, College of Nursing
Peter Lee, MD, MPH, FACOEM	General Electric
Gail MacInnes, MSW	Paraprofessional Healthcare Institute (PHI)
Tami Mark, PhD, MBA	Truven Health Analytics
Jean Moore, BSN, MSN	State University of New York at Albany School of Public Health
Robert Moser, MD	Kansas Department of Health and Environment
Sunita Mutha, MD	University of California San Francisco
Robert Phillips, MD, MSPH	American Board of Family Medicine
William Pilkington, PhD	Cabarrus Health Alliance
Jon Schommer, PhD	University of Minnesota
John Snyder, MD, MS, MPH (FACP)	Health Resources and Services Administration
Julie Sochalski, PhD, RN	University of Pennsylvania, School of Nursing
Charles vonGunten, MD, PhD	Ohio Health Kobacker House
Gregg Warshaw, MD, AGSF	University of Cincinnati College of Medicine
George Zangaro, PhD, RN	Health Resources and Services Administration
Andrew Zinkel, MD, FACEP	HealthPartners
DEPARTMENT OF HEALTH AND HUMAN SERVICES REPRESENTATIVES	
Cille Kennedy	Office of the Assistant Secretary for Planning and Evaluation
Girma Alemu	Health Resources and Services Administration
NATIONAL QUALITY FORUM STAFF	
Angela Franklin, JD	Senior Director
Quintin Dukes, MSHA	Project Manager
Severa Chavez	Project Analyst
Laura Ibragimova, MPH	Project Analyst
Wendy Prins, MPH, MPT	Vice President

APPENDIX C:

Results of Environmental Scan

Understanding available measures related to the workforce allows for accurate portrayal of where measurement gaps exist. To support the prioritization efforts, NQF staff, in consultation with the multi-stakeholder committee and DHHS colleagues, completed an initial environmental scan of measures and measure concepts that map to the domains and subdomains of the identified conceptual framework.

Iterations of the scan were conducted as the conceptual framework, measure domains and subdomains were refined. With input from the Committee and DHHS colleagues, 208 measures were identified as workforce measures. These include structure, process, outcome, efficiency, experience of care, population health, and satisfaction measures as they pertain to effective prevention and care coordination through a workforce lens. Aspects of data sources and level of analysis were considered in the mapping. The final scan looked specifically at the workforce and its characteristics in deployment. The final scan can be accessed on the [NQF website](#).

TABLE 1. ENVIRONMENTAL SCAN RESULTS

Measurement Domain	Number of Measures in Scan
Training and Development	69
Infrastructure	17
Recruitment and Retention	2
Assessment of Community and Workforce Needs	0
Experience	78
Clinical, Community and Cross-Disciplinary Relationships	14
Capacity and Productivity	44
Workforce Diversity and Retention	3

*Individual measures may be mapped to multiple domains

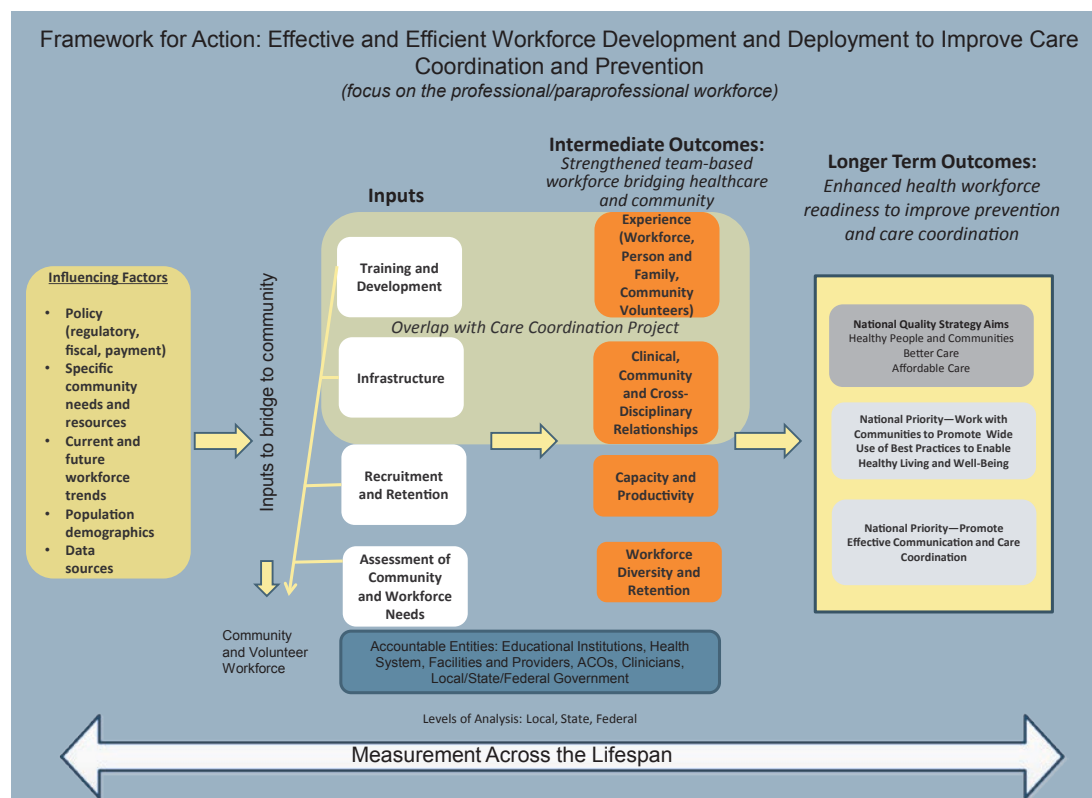
APPENDIX D: Conceptual Measurement Framework

In conceptualizing the draft framework illustrated in the figure below, the Committee agreed that a framework for effective and efficient deployment of the health workforce to improve the coordination of care and improve prevention strategies should be grounded by the National Quality Strategy (NQS). They also recommended a broad approach to the framework, suggesting that it encompass measurement across the life-span and for measurement opportunities beyond clinical settings. With the potential for significant overlaps of inputs and intermediate outcomes with NQF's Care Coordination measure prioritization project, close coordination between project teams will be important.

While the primary focus of the framework is on the paid professional and paraprofessional

workforce as perhaps the most ripe and feasible areas for measurement, the Committee agreed the framework should capture and examine the impact and roles of lay and community workers in the community setting (i.e., clinical-community impacts). This is consistent with the CCRM Atlas, which finds that a clinical-community relationship exists when a primary care clinician forges sustained relationships with community resources to provide certain preventive services such as tobacco screening and counseling or when the clinical practice and the community resource engage in at least one strategy for working together—networking, coordinating, cooperating, or collaborating. In the course of this work, inputs, intermediate outcomes, long-term outcomes, and influencing factors were mapped in accordance with these guiding principles.

FIGURE 1. HEALTH WORKFORCE DRAFT FRAMEWORK



Longer-Term Outcomes. Following discussions about the approach to this project, the Committee agreed with the logic model approach to the framework seen above. Beginning with the end in mind, the framework's overarching goals include the three broad aims of the NQS focused on better care, healthy people/communities, and affordable care. Although workforce is a critical element to achieve all six national priorities within the NQS, this work is focused on the priorities of prevention and care coordination, specifically:

- Working with communities to promote wide use of best practices to enable healthy living
- Promoting effective communication and coordination of care

These priorities were used as one mechanism to ensure the project remained adequately focused and ensure that the Committee would be able to develop clear priorities for a path forward.

Inputs. Guided by early feedback from the advisory group and agreed to by the Committee, the draft framework is oriented toward the professional and paraprofessional workforce. Inputs included in the framework are categorized as training, retraining and development; infrastructure; recruitment and retention; and assessment of community and workforce needs.

Training and development includes training that is intended to allow workers to deliver care in new models of care such as ACOs, patient centered medical homes (PCMHs) and dental homes, and other coordinated systems of care such as integrated healthcare networks that harmonize primary care with acute inpatient and post-acute long-term care. These models will require the caregiving disciplines to work together in a more coordinated effort over time. Faculty development and training should be included in this category to ensure education will reflect changes to the healthcare delivery system and interprofessional team-based care. In addition, continuing education will be critical to ensure the advancement of a workforce that will meet the needs of individuals

and the system.

The Committee considered recommending a common set of core competencies and training for specified workforce roles, such as:

- Interprofessional collaborative practice, readying the workforce to practice effective and team-based care;
- Person-centered care, including sensitivity to health literacy and cultural competency;
- Person and family engagement and inclusion in care, including needs assessment, goal setting and creating plans of care;
- Quality measure data collection and reporting, including analyzing results and sharing best practices;
- Prevention methods, including guidelines, care standards, and literature analysis;
- Use of electronic health records (EHRs) and health information technology (HIT)
- Knowledge of and familiarity with community needs, norms, and resources and principles of population health;
- Practice-based learning and improvement, including an understanding of social science, economics, and professionalism; and
- Systems-based practice, including new models of care delivery (e.g., ACOs, PCMHs).

Infrastructure addresses supports for clinicians, organizations, and systems to better coordinate people and processes. Measurement in this area may address the degree to which a sustainable organizational infrastructure exists to leverage technology and collaborative practice, to optimize service capacity and relationships between workforce and community, and to support the workforce in efficiently and effectively improving quality. This category includes HIT infrastructure (such as use of EHRs and telehealth/telemedicine capabilities), scope of practice policies,

enhancements meant to improve access to care, organizational structure, and delivery system design (including participation in ACOs, PCMHs, or other new models of care).

Recruitment and retention encompasses hiring practices and retention strategies, including those that improve diversity. This also includes onboarding, orientation, and career development to ensure employees are well trained and prepared to not only be effective healthcare providers, but to be confident and satisfied with their role. This will be critical and is expected to result in reduced turnover and higher employee satisfaction. Workforce forecasting and needs-based recruitment may also be considered within this category.

Assessment of Community and Workforce Needs addresses strategies to measure the social, cultural or geographic needs of a given population or community in terms of workforce capacity and deployment. This will be critical to ensure an optimal workforce composition that possesses the necessary skills, cultural diversity and competency, or other critical elements to meet the needs of a specific community.

Intermediate Outcomes. The inputs previously described are expected to lead to the desired intermediate outcome of a strengthened team-based workforce, bridging health system resources with the communities they serve. Specifically it is expected that there will be improvement in workforce satisfaction and **experience of care delivery**, in person and family experience of care, and in the community's experience interacting with the health workforce. It is expected that **clinical and community relationships** will be strengthened by increasing knowledge and familiarity of practitioners with community resources; using team-based plans of care; using surveillance systems to monitor population health; improving coordination with financial, education and social services to support care and strengthen inter-organizational relationships, all with the goal that both practitioners and community resources

are proactive and ready in the provision of care.

Improved **workforce capacity and productivity** is anticipated, with improved effectiveness and efficiency in the provision of care and improved geographical distribution of the workforce. Capacities may be resources, such as infrastructure (including HIT), trained personnel, and response mechanisms that are utilized for workforce deployment (structural elements), while productivity may include functional actions that an organization is capable of taking to identify and respond to individual and community needs to deliver more efficient and effective care. **Diversity** and cultural competency of the workforce is expected to be improved with increased minority representation and improved cultural competency of the workforce. Finally, increased focus on workforce needs ideally will result in improved **retention**.

Ultimately, improvement in these areas is expected to improve the outcomes articulated in the NQS, and as part of the prioritization of measurement areas, the Committee should articulate specific targets.

Influencing factors. The Committee will need to consider measurement opportunities within the context of important influencing factors, including policy constraints such as regulations, fiscal realities, and changing payment models. Additionally, influencing factors include the diverse needs and resources of communities; current and future workforce trends and needs (e.g., an aging workforce); population demographics (including social and cultural factors); and data elements and sources needed to inform evidence-based measurement. The Committee also engaged in discussion regarding the selection of accountable entities and the potential for limiting measurement feasibility.

APPENDIX E:

Key Informants

Key Informants	
Erin Fraher, PhD, MPP	University of North Carolina, Chapel Hill
Robyn L. Golden, LCSW	Rush University Medical Center
Edward Salsberg, MS	George Washington University
Scott Shipman, MD, MPH	Dartmouth University
Patricia J. Volland, MSW	Silberman School of Social Work at Hunter College-City University of New York

To support the work of the Committee, NQF staff interviewed key informants to further identify important measurement issues related to workforce deployment. These individuals were asked to elaborate on key themes raised in the

course to the Committee's deliberations, and opportunities for evidence-based measurement in the areas of emerging models of team-based care, new roles for healthcare teams, worker experience of care and retention, influencing factors including Patient Protection and Affordable Care Act (PPACA) implementation, funding for health provider and community resource connection programs and GME issues. They also provided recommendations for research, consistent with many of the Committee's recommendations. As the Committee is focused on the future of workforce deployment and how measurement can drive future improvement, informants were also asked to provide their vision of workforce deployment in the areas of prevention and care coordination in a future, ideal state. Their inputs have been captured in the body of this work.

APPENDIX F: Public Comments

Conceptual Framework

Altarum Center for Elder Care and Advanced Illness

Holly Stanley and Joanne Lynn

We commend the Committee for their work and appreciate the opportunity to comment. While we are encouraged by their acknowledgment that workforce competency in the care of older adults is “critical,” we do not feel that view is well represented among the final priority recommendations. We encourage consideration of expedited development of additional measures commensurate with this priority, several of which we have outlined in the “Prioritized Measurement Domains & Concepts” section. Given the demographic imperative of a rapidly growing US population of frail older adults, an area in which our current workforce has demonstrated it is ill-prepared to handle, additional emphasis is warranted if the Triple Aim is to be realized.

With regard to the Infrastructure domain, all of the prioritized recommendations as well as the list of “other concepts that were considered” in one way or another involve IT. Technical support is such a complicated and ever-growing behemoth we fear the other important elements the Committee included in this domain will be chronically overshadowed. Addition of a separate domain for “Health IT” would free up Infrastructure to focus attention on the many other elements of structure and process that are essential to good outcomes (many of which are listed in the report, but not developed).

> *NQF Response*

NQF appreciates these comments and has incorporated care of frail older adults to proposed measure concepts under training and development. The need for further work in the infrastructure domain to identify additional priority measurement concepts is acknowledged.

Administration for Community Living (ACL)

Jamie Kendall

BUILDING OUT A MEASUREMENT STRATEGY FOR LTSS WORKFORCE

On page 8 of your report you provide a definition of the health care workforce that includes LTSS workers: “the term workforce includes the clinical workforce (e.g., physicians, nurses, behavioral health professionals, oral health professionals, allied health, and clinical social workers); the non-clinical workforce (e.g., public health and human service professionals); and long-term services and supports (LTSS) personnel” . We hope that measures for LTSS personnel can receive further emphasis in future efforts. In 2013 the Long Term Care Commission identified better equipping the direct care workforce for LTSS as one of their high priority areas. We know that direct care workforce in LTSS is essential to achieving quality of life outcomes for individuals, as direct care workers, whether working in residential settings or in a person’s home, are often most familiar with the individual and his or her service needs, and are best able to provide services and supports in a person-centered way. Below is an excerpt from their report page 49 (full report found at <http://ltccommission.lmp01.lucidus.net/wp-content/uploads/2013/12/Commission-on-Long-Term-Care-Final-Report-9-26-13.pdf>), listing 7 principles – where we think measurement should play an essential role in providing a benchmark for where we are at currently, and to help state systems continue to monitor progress:

The Commission suggested that workforce policy should follow the following principles:

- Family caregivers should be identified and assessed for their needs, especially when care plans are dependent on them, and they should receive the support they need to continue providing care to their loved ones.
- Paid direct care positions should hold the possibility of advancement and job satisfaction through career

ladders and lattices.

- Competency evaluation should ensure that front-line care workers have the knowledge and skills they need to meet the assigned needs of the individuals in their care.
- The LTSS system should utilize both paid and family caregivers to their fullest potential by including them as integral members of care teams.
- Workforce policies should be designed to increase quality of care and retention of direct care workers.
- Sufficient numbers of health and social service professionals should be available to provide services connected with LTSS.
- Teams coordinating care for individuals with LTSS needs should include professionals who can address LTSS needs of individuals with functional limitations, and are able to incorporate LTSS into the care planning for the individual.

We hope that measures can be identified to support the important principles above.

> **NQF Response**

NQF appreciates these recommendations and has incorporated them into the report to the extent possible. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area.

The Paraprofessional Healthcare Institute (PHI)

Gail MacInnes

Family Caregivers:

On page 7, in addition to noting the role of family caregivers in promoting prevention and care coordination, and in reducing disparities, it is important to make note of their frequent involvement in hands-on care delivery. As noted in AARP's report, "Home Alone,": "Family caregivers have traditionally provided assistance with bathing, dressing, eating, and household tasks such as shopping and managing finances. While these remain critically important to the well-being of care recipients, the role of family caregivers has dramatically expanded to include performing medical/nursing tasks of the kind and complexity once only provided in hospitals."

Influencing Factors – Aging:

Also on page 7, it's critical to list the dramatic aging of the patient population among the "influencing factors" informing the discussion of gaps in health workforce performance measurement. In terms of trends or "influencing factors," I can't think of any other more important or generalized factor than the inexorable aging of our population, and the attendant increase in chronic illness. Therefore, I think this factor deserves its own sentence, if not its own paragraph.

LTSS Personnel:

On page 8, it is important to provide examples of "LTSS personnel," since many people do not understand the various occupations that it includes. I would recommend adding, at the end of the first paragraph, "(e.g., home health aides, certified nursing assistants, personal care attendants)".

> **NQF Response**

NQF appreciates these comments and has incorporated specific examples of LTSS personnel to further enhance the definition of health workforce.

Prioritized Measurement Domains and Concepts

Service Employees International Union

Howard Berliner

Training and Development:

While the health delivery system has been in such great and rapid transition over the past few years, and while such transition shows no signs of abating in the near future—it is somewhat amazing that health professional and health worker training has changed very little. It is one thing to call for educational institutions to upgrade and change curricula to meet the challenges of a new delivery system, but it is not at all clear how this actually could happen. To the extent that health professions are protected by state law, it would seem that much of the change that is necessary has to come from within the profession to influence legislatures to make needed changes. Many of the recently awarded CMS Medicaid waivers call for delivery system reform that will reduce inpatient hospitalization by as much as 25%—yet there is nothing which changes the training sites

and techniques to take advantage of a less hospital-centric system.

Capacity and Productivity:

It is difficult to make measurements based on patient perception of process or outcome since people are different. CMS recognizes this in how they apply weighting to the HCAPHS measures of customer satisfaction. If I want an appointment tomorrow and can't get it, (assuming a non-emergency situation), what does that actually tell me about the health care system? To what extent will consumers have to adjust their expectations to meet a more constrained system or is it necessary for the system to expand to meet all consumer desires? For most professional health care workers, we have very good supply numbers. What we don't have is any real measure of demand. Customer satisfaction is clearly one demand measure—though I believe it to be very flawed and useless in most instances. We clearly need more research into the demand for health care workers, substitution impacts on demand, and a variety of other research into how the health system is used and how it should be used.

Clinical, community and cross disciplinary relationships:

As our health care system focuses more on coordination of care between different types of workers and different types of institutions, it is important to keep in mind that most of the European research shows that when the aim of a project is to better coordinate care, generally costs go up because more things are found to be needed. The relationships between the need for health care, housing, nutrition, education, and employment are such that real attempts to coordinate care may save a little money by reducing duplicative and unnecessary services, but may also create the need to spend much more. This is not a bad thing—just necessary to point out so that we don't make the mistake of thinking that coordination of care will only save money.

Diversity and Retention:

Given the enormous demographic changes the U.S. is undergoing, the need for a more diverse workforce is clear. The question is what does that actually mean? How close a correspondence between a particular population group and the health care professionals

they deal with is necessary for an effective health care system? Linguistic correspondence is important—but what about cultural or generational? To what degree should a health care system match the health care providers with the patients—and does this have an impact on quality? We have been woefully unsuccessful in getting anywhere near where we need to be in terms of most health professional categories on even a racial basis, let alone anything more complex. But what should we even aim for and does technology allow us to use substitute personnel or educational patterns to increase the diversity of health workers without decreasing quality?

Final Points: I would like to commend the Committee and especially its co-chairs for an excellent job. I would also commend the staff for taking a leap on a very difficult project. Let me reiterate the need for NQF to try to support greater research into health workforce measures and their relation to quality of care. The benefits will go well beyond the limited nature of what CMS wants, but will serve to improve the entire health care system.

> *NQF Response*

NQF appreciates these comments and has incorporated these comments in to the report to the extent possible. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area.

The Paraprofessional Healthcare Institute (PHI)

Gail MacInnes

I don't understand the difference between "Retention" in the "Diversity and Retention" and "Recruitment and Retention." Is it the same? I strongly support the first concept: "Assessment of workforce retention..." as well as the "Assessment at the national or state level of the ratio..." concept. In the case of the direct-care workforce, retention is enormously important overall, not just limited to efforts to improve diversity.

Training and Development:

- I recommend changing references to "educational institutions" to "educational programs or institutions".
- I recommend inserting "Assessment of whether workers' level of training is adequate to meet

consumers' needs"

- I would change references to "faculty" to "faculty or instructor" because faculty denotes teaching staff at a university or college. Many direct-care worker training programs take place through other organizations.

Capacity and Productivity:

- I recommend changing references to "at the health system or facility level" to "within health systems, facilities, or home-based care"
- At the top of page 13, I am confused by your discussion of evidence from the Money Follows the Person demonstration as related to primary care. As far as I know, MFP is largely, if not exclusively, focused on long-term care and providing opportunities for individuals to move out of institutions into home and community-based settings. The MFP survey I mentioned at the meeting showed that one third of states have identified lack of direct-care workers as a barrier to enabling individuals to move out of institutions. http://kaiserfamilyfoundation.files.wordpress.com/2014/04/8581-money-follows-the-person_a-2013-survey-of-transitions-services-and-costs1.pdf (page 14)

- I recommend inserting "Assessment of patient access to long-term services and supports."

General:

- In general, I encourage you to incorporate more explicit language about the inclusion of long-term care in this endeavor. For example, throughout, each time you make reference to a "health system," you could instead say "health or long-term care system."
- On page 2, after the sentence about demand & supply, I recommend adding a footnote to data about the dramatic projected growth in the direct-care workforce. Here's one possibility: <http://phinational.org/sites/phinational.org/files/phi-facts-3.pdf>; however, if you prefer, you could also cite the Bureau of Labor Statistics data directly.
- At the top of page 3, in your discussion of the intent of the project, I'd encourage you to be more explicit about the inclusion of long-term care and home-based health care delivery. The trend in health care delivery is dramatically away from institutional or facility-based care toward outpatient or home-based care, and the health conditions experienced by more

and more people are of the chronic, rather than acute, variety.

- In the "Research Recommendations" section, in the discussion of "team-based, interdisciplinary care," it is important to include discussion of inclusion of direct-care workers and family caregivers in interdisciplinary teams. Direct-care workers and family caregivers have the intimate, daily interaction with the individual receiving care that no other member of the team has, and can play a crucial role in recognizing early warning signs of complications.

- In the discussion of "scope of practice" at the bottom of page 16, please list direct-care workers among the occupations which warrant research.

> NQF Response

NQF appreciates these comments and has incorporated these suggestions to the extent possible.

The reference in question (Money Follows the Person) was removed from the report.

School of Public Health, University at Albany

Jean Moore

I am a member of the Health Workforce Committee convened by the NQF and charged with identifying priorities for performance measure development on health workforce. I attended the in-person meeting of the committee on April 15-16 in Washington, DC. I participated in the session on identifying the appropriate domains from which to draw these measures. However, I missed the brainstorming session focused on the identification of possible performance measures and the voting on the most promising measures. Consequently, I understood and supported the chosen domains, but had much less input into the proposed performance measures.

DOMAIN 1: Infrastructure

While I think infrastructure is an important domain to include, it is not clear to me why the focus is limited to Health IT as I think there are many other infrastructure issues that are very relevant to the adequacy of health workforce deployment. For example, in some inner city and rural communities, lack of primary care infrastructure (i.e., clinics, private practices) can reduce community access to primary

care providers and lead to higher rates of ambulatory care sensitive ER visits and hospitalizations.

I am not sure exactly what electronic prior authorization approvals can tell you about the adequacy of the health workforce. For example, if a health plan allows electronic prior-authorization approvals but specialty practices in that area do not accept Medicaid referrals, then we miss important information about lack of access to specialty services for Medicaid patients and for the uninsured.

While I like the idea of monitoring the use of telehealth by providers, it is important to recognize that many factors contribute to providers' decisions to use telehealth for clinical services. For example, in a recent survey of health care providers in New York, when asked about the single biggest barrier to increasing use of telehealth for clinical services, providers cited lack of reimbursement. Consequently, there may be need for telehealth services in underserved communities as well as the capacity to provide the needed services, but the limiting factor is reimbursement for those services.

I think that assuring the adequacy of the IT workforce to support HIE and to train workers to use available data to improve the quality of care provided are both important. However, I think that is too narrow a focus when considering the impacts of infrastructure on the adequacy of health workforce deployment.

Clearly, effective care coordination is facilitated by a fully-developed electronic health record (EHR), the ability to extract and use data in planning and implementing care and the ability to use health information exchange to communicate across all providers working with a patient. Perhaps a useful measure could be outcomes-oriented, e.g., reductions in unnecessary ER visits and hospitalizations.

DOMAIN 2: Training and Development

I think you raise important issues here about the need to train for the future. I think all of the topics cited are very relevant. That said, I am not sure that the onus should be placed on the 'educational institution' but rather on the specific health professions education programs. It would be very helpful to build curricular requirements into accreditation standards for the various health professions education programs, including nursing, medicine, pharmacy, etc. with more emphasis on interprofessional education and training.

DOMAIN 3: Capacity and Productivity

I have concerns about the proposed measure concepts, the majority of which seem to focus on patient perceptions, such as 'percentage of time patient received desired appointment or saw desired professional'. I think that with the development of new models of service delivery, it may become more common for people to be seen by someone other than who they expected to see – with comparable or even better outcomes. For example, a patient with diabetes may see a health coach, a certified diabetes educator, etc., and outcomes may be much better than if the patient had been seen by a physician (the patient's preferred provider).

I think that the issue of capacity is a critical one and I do not see any proposed concept measures that clearly tie to workforce capacity. The National Center for Health Workforce Analysis (NCHWA) is in the forefront of efforts to create access to health workforce data from either primary or secondary data sources. They currently have the best available data on RNs (from the National Sample Survey of Nurses) and Nurse Practitioners (from the National Sample Survey of Nurse Practitioners) that are drawn directly from survey research they fund. The Area Health Resource File also makes available data drawn from secondary data sources and includes information on physicians and physician assistants, among others. While supply data alone is not sufficient to understand adequacy of capacity, it is an important starting point.

NCHWA is also in the process of updating its health workforce supply/demand projection models using microsimulation to estimate demand (and need) for health workers in relation to supply. Clearly, predicting demand has become more challenging with increasing use of team based models of care and our limited ability to measure team-based care effects. However, I think there is a recognition of the importance of integrated, rather than siloed approaches to projection modeling. For example, NCHWA's updated physician supply/demand model includes scenarios that consider how increased use of NPs and PAs can reduce demand for physicians.

NCHWA's efforts are an important starting point for state planners and policy makers trying to better understand what their most pressing workforce

issues are and developing the appropriate policies and programs to address them. That said, even when national supply/demand predictions suggest an over-supply of a given health profession, it is critical to model supply of and demand for health workers at state and sub-state levels to determine where maldistributions and shortages actually exist. That's why it is important to encourage states to develop their own health workforce monitoring systems that include collecting their own data for planning purposes. NCHWA has developed a Health Profession Minimum Data Set (MDS), a recommended set of basic questions on demographics, education and practice that support analysis of basic information about the supply and distribution of health professionals in the state. The National Governor's Association is actively working with selected states in its Policy Academy on Health Workforce to build efficient and effective health workforce monitoring systems, encouraging the use of MDS.

With regard to productivity, team based approaches to care will dramatically change workforce configurations with potential to improve efficiency while preserving quality. Rather than looking at patient perceptions about team-based care, it might be more helpful to consider impacts of team based models on expanding access and improving efficiency of care, while maintaining quality. It is important to remember that state-specific health professions regulation could have adverse impacts on productivity by preventing workers from working to the full scope of their professional competence. Comparative effectiveness health workforce research that looks at state to state variation in scope of practice rules and impacts on productivity could be very useful in helping states to better understand the consequences of overly restrictive health professions regulation.

I do not believe that assessment of infant mortality rates compared to workforce supply is a particularly useful measure. Better proxy measures might be Health Professional Shortage Areas (HPSAs) for primary care, mental health and oral health. All of these HPSA designations are based in part on the supply of health professionals serving the community or population that is designated.

DOMAIN 4: Clinical, community and cross disciplinary relationships

I believe this domain is important, but the proposed measure concept seems a bit vague. I think a more direct approach would be to assess the effectiveness of care coordination workforce strategies on improvements in processes of care, such as increased rates of preventive screenings as well as patient outcomes, including reductions in ambulatory care sensitive emergency department visits and hospitalizations; and effective chronic disease management (e.g., diabetes, hypertension, etc.)

DOMAIN 5: Diversity and Retention

With regard to the reference to 'ideal forecasting at the state level', please see comments about the limits of supply/demand projection modeling described in Domain 3. I think it is important to realize that it is challenging to find 'the ideal' number of workers needed, particularly as we move to team based models of care that have the potential to support more efficient and effective use of the available supply of workers. Further, provider to population ratios can be misleading without a good understanding of the population served, including their most pressing health care needs, socioeconomic status and insurance status. These sorts of analyses are best done as part of a small area analysis.

I fully agree that monitoring the diversity of the health workforce is critical, but it must clearly go beyond counts of under-represented minorities in the health workforce. Rather we need to begin to consider impacts of diversity on improvements in health processes, health outcomes, patient experiences of care and most importantly reductions in racial/ethnic health disparities. Further, more finely-grained data on the health workforce are needed to support these analyses and makes the case for supporting state health workforce data collection.

> NQF Response

NQF appreciates these comments and to the extent possible has addressed these within the scope of this work. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area.

University of California, San Francisco
Sunita Mutha**DOMAIN 1: Infrastructure**

Infrastructure is an important domain, but limiting to health IT (versus other types of infrastructure such as sites where care is delivered) seems overly restrictive focus for measuring the impact of workforce deployment. A concern about the listed measures is that they may be more shaped by factors other than those that offer insight into the impact of the health workforce (e.g., policies about prior authorization process, disincentives to using telehealth, limited resources to fund training). It may be more useful to focus infrastructure measurement efforts on staffing characteristics of sites where care is delivered as these may be more tightly linked to the impact of the workforce.

DOMAIN 2: Training and Development

A group that is notably missing from the list of “accountable” organizations (educational institutions and health systems) is the professional organization that oversees licensing and credentialing. Given their importance in assuring “quality” of training (and thus on quality of care), it seems they should be identified here. One way to make these measures more useful is to make them less specific. For example, the first two bullets could be integrated (treating care of older adults as an example of a new competency).

DOMAIN 3: Capacity and Productivity

There is an inconsistency in the proposed measure with the first two being at odds (first bullet focuses on access to individual clinician and second recognizes the move toward team based care). These items also point to a gap that we have a chance to address—the need to invest in data collection on actual workforce capacity, not just proxies for capacity. Not a simple issue, but now that we have IT systems that can track who contributes to care for a patient, and methods for handling big data, and better simulation models, it seems an opportune time to shine a light on this issue and propel investment of resources into such efforts. Patient and family perception of adequacy is prone to so many confounding factors, including expectations as well as health professions’ regulations. It could be more useful to look at process measures such

as access and efficiency and comparing them for different models for team based care. Given that we know that health care and health outcomes are so defined by geography, looking at state and national infant mortality rates could be misleading or entirely unhelpful. It will also be difficult to use this information to identify what changes can be made.

DOMAIN 5: Diversity and Retention

This is an important domain and offers the great opportunity for moving us toward demonstrating that diversity is aligned with health outcomes (e.g., reductions in disparities) rather than just counting relative to census data.

> NQF Response

NQF appreciates these comments and has addressed these concerns to the extent possible. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area.

Association of American Medical Colleges
Mary Wheatley**Training and Development**

The “Training and Workforce Domain” section does not discuss the work that accrediting bodies, such as the Accreditation Council for Graduate Medical Education (ACGME) are currently doing to measure core competencies. The AAMC recommends acknowledging the significant measurement efforts that are already occurring in this area and recommends that HHS work with partners to understand the measures being developed to avoid duplicating efforts.

The Committee identified a set of core competencies for training and proposed measure concepts. However, these ideas do not align with the thoughtful, timely, and actionable work that is already well under way by health profession accrediting bodies, notably the ACGME, which accredits 9,200 residency education programs nationwide. The AAMC strongly encourages the NQF to avoid duplicating efforts in establishing and evaluating educational competencies and measures and instead reference the existing work in progress.

The ACGME’s “Next Accreditation System” (NAS),

launched in 2013, restructured the ACGME's accreditation system and created an outcomes-based accreditation process for residency education, through which "the doctors of tomorrow will be measured for their competency in performing the essential tasks necessary for clinical practice in the 21st century."

[1] A key element of the NAS is the measurement and reporting of outcomes through educational milestones, which are a natural progression of the work ACGME had been doing in the six competencies of patient care, medical knowledge, practice based learning and improvement, systems based practice, professionalism, and interprofessional skills and communication. Institutions providing residency education already are devoting significant time and resources to meeting the ACGME's new requirements.

Another two important examples that should be acknowledged are the work by IPEC that outlined core competencies for interprofessional collaborative practice and also the AAMC's Core Entrustable Professional Activities (EPAs) for Entering Residency[2] that address interprofessional collaboration among others.

[1] <https://www.acgme.org/acgmeweb/tabid/435/ProgramandInstitutionalAccreditation/NextAccreditationSystem.aspx>[2] <https://www.aamc.org/newsroom/newsreleases/381260/06102014.html>

Additionally, the AAMC supports legislation that has already been introduced by Representatives Schock and Schwartz that would establish measures for Medicare-funded training residency positions that would require institutions to demonstrate training in: the delivery of evaluation and management or other cognitive services; a variety of settings and systems; the coordination of patient care across various settings; the relevant cost and value of various diagnostic and treatment options; inter-professional and multidisciplinary care teams; methods for identifying system errors and implementing system solutions; and the use of health information technology (HIT).

In short, the AAMC shares the NQF Health Workforce Committee's commitment to ensuring that the health care workforce is equipped to deliver coordinated care in new models and delivery systems. However, the Association strongly urges NQF to remove the

"Training and Development" as a priority gap for HHS as this recommendation could create a redundant set of core competencies and training requirements for health profession education programs. Instead, the AAMC suggests that the report outline the current efforts and recommend that HHS work with those partners to understand those measures and measure concepts.

Capacity and Productivity

The following are brief comments on the capacity and productivity domain:

- In reformed delivery models, patient access may not be measured via appointments or face-to-face visits. The measure concept for patient access should expand to consider ways that patients gain real time access (via portals or other devices) to providers which can eliminate unnecessary appointments and improve access in a patient-centered way.
- None of the measure concepts address "productivity" explicitly. If productivity remains part of the heading for this section, both a definition for productivity and measures to assess productivity are warranted.
- It is problematic that infant mortality rate is the only proposed health outcome tied to workforce sufficiency and effectiveness. Infant mortality rate is inappropriate for this purpose for two reasons: o This is a low prevalence event, which precludes any stable estimate at smaller geographic levels, and at larger geographies such as those listed (state, national) assessments of workforce adequacy are too nonspecific due to widely variable distributions of the workforce within each geography (e.g. rural vs. urban areas within a state); and, o
- The suggestion of a causal link between infant mortality and the available healthcare workforce is dubious. [see Goodman et al, N Engl J Med 2002; 346:1538-1544]

The AAMC recommends giving consideration to other, more prevalent measures (e.g. chronic disease management) that are relevant to a broad range of the population.

- Patient assessment of team-based care may be difficult to ascertain as patients may not understand or even be aware of the team that is supporting their care, especially those who work behind the

scenes.

- In the aspirational measure concepts section, the report notes the potential for standards of team mix for populations. The AAMC cautions about having standards as the needs of different populations vary due to age, socioeconomic status, health status, and other variables. Variation in population needs has to be considered when determining the adequacy of various members of a healthcare team (and collectively the interprofessional workforce) serving a given population.

Infrastructure (Health IT)

The following are brief comments on the infrastructure domain:

- Given the national movement toward alternative payment models that do not include prior-authorization, and given the preponderance of vulnerable populations managed by federally qualified health centers, the focus on prior-authorization seems antiquated. Other options for technology to support efficient use of the workforce, such as standing orders, team management of electronic health records (EHR), or using data to identify high risk patients for targeted interventions may have more potential.
- The definition of telehealth should be broadened to include innovative ideas such as home monitoring or training and capacity-building programs such as Project ECHO (Extension for Community Healthcare Outcomes).
- The Committee should consider adding a recommendation to standardize and define the roles of the personnel needed to facilitate data exchange (e.g. data analysts, IT personnel who understand EHRs and large datasets, and people and tools for translating data into meaningful population health surveillance and action).
- The unit of measurement varies across the recommendations: sometimes it is only an ACO, other times a health system, health plan or facility. Given the multiple new delivery strategies, the Committee should be consistent with its language and clarify why a particular unit of measurement was selected.

The measure concept on the impact of EHR training might be better suited as a research topic rather than

a potential metric.

Clinical Community and Cross-Disciplinary Relationships

This measure concept focuses on ACO performance relative to team mix; however, teams are not fixed across or within ACOs. ACOs intentionally (and appropriately) vary the team mix across the population in the ACO. For example, superutilizer patients or other high risk patients may receive more intensive case management and access to social services but are a small segment of the overall ACO population. On the other hand, there is a need for measures that can quantify the members of the teams in the ACO and specify their roles (and populations served as noted above). Given the evolving notion of team based care, today's team configurations may be outdated in the future, and any concept of a single fixed "ideal" team composition seems ill-advised. Instead, focusing on achieving greater clarity around the team members and their roles will support understanding the evolution of roles and team composition.

Diversity and Retention

The AAMC strongly supports work on diversity and retention. One overarching consideration is that many of the measure concepts rely on historical data about the way health care is delivered. Ratios and other distribution metrics cannot tell the whole picture of a patient's ability to access care, whether that care was delivered appropriately, nor how the data might change with new care models. The following are additional comments about the measure concepts proposed for this domain:

- The first measure concept is to assess retention at ACOs, health systems, and facilities by several criteria. The reason for this measure concept is unclear. If the focus is to understand reasons for better or poor retention, there is no current reason to believe that ACOs have a higher provider retention rate than other health system models. If it is an epidemiologic review of existing patterns, a full literature review should be conducted to guide hypotheses before further assessment is completed. If the logic behind this measure concept is to elucidate the ideal environment for increasing provider retention in underserved areas, then this focus should be more apparent to the reader.

- One measure concept is to assess “at a national or state level the ratio of discipline-specific workers to the baseline needs of specific populations, using census data”. The AAMC assumes this is an effort to determine primary care and specialty mix, as well as specialty access based on current patterns of care. This focus appears to be about workforce size and distribution, not diversity and retention.
- One measure concept is to assess, at a community level, minority representation in the health workforce. Measuring diversity is complex and needs to be measured at multiple levels. While the AAMC supports the concept of increasing diversity at the community level, there is no data at this time to suggest this would be the ultimate measurement of diversity workforce success.
- One measure concept is for measuring cultural competencies. AAMC does support the concept of measuring culturally competent care from patient experience, assuming that data can be collected through a validated survey. The Association also feels this could be an area of future research to develop other tools to measure cultural competency.

> **NQF Response**

NQF appreciates these comments and has addressed these concerns to the extent possible. NQF acknowledges the significant work currently underway within these domains, and acknowledges the need for further work to explore these issues and identify additional priority measurement concepts.

Altarum Center for Elder Care and Advanced Illness

Holly Stanley

Training & Development:

The value of the measure “Assessing if education institutions include care of the older adult in their core competencies” would be enhanced if the Partnership for Health in Aging’s (PHA) “Multidisciplinary Competencies in the Care of Older Adults at the Completion of the Entry-Level Health Professional Degree” was used as a guideline. However, while this could be a useful metric for new graduates (the only competency proposed for care of the older adult), the current workforce is also in

need of retraining, and in more than new models of care like ACOs and PCMHs. In addition to work by the American Geriatrics Society mentioned in the report, there are a variety of aging-associated organizations that have been actively involved developing curriculums, competencies, guidelines and training from which potential measurement development might be facilitated. Examples include (and others can be provided upon request): The American Medical Directors Association (AMDA) competencies for SNF and LTC providers; Nurses Improving Care of Health system Elders (NICHE) based at NYU College of Nursing; American Society of Consulting Pharmacists (ASCP) Geriatric Pharmacy Curriculum Guide (3rd edition in development); Emergency Nurses Association (ENA) Geriatric Emergency Nursing Education (GENE) course. Assessment of whether board certification entities include geriatrics content in their certification exams, to what extent and performance of examinees over time would also be a valuable metric to monitor over time for success in training/retraining. From the Committee’s list of “considered” recommendations or “aspirational measure concepts” we must highlight the importance of training providers regarding development of care plans, IDT training, and improved understanding about community resources. All 3 of these are fundamental in the care of frail older adults and about which most healthcare providers lack training and/or a practical understanding. Included in the Environmental Survey is the Competency Assessment Instrument (CAI) that measures 15 competencies needed to provide high quality care for those with severe and persistent mental illness. While lacking prior knowledge of this AHRQ measure, upon inspection of the 15 domains development of a similar CAI that measures the competencies needed to provide high quality care for frail older adults seems quite doable.

Capacity & Productivity:

Re “Assessment of patient access to primary care physician or specialist care, or social worker or allied health professional, measured by percentage of time patients received desired appointments or saw desired professional” - Measure should be clear about “desired appointments and professionals” as determined by whom and arranged from which setting.

Re “Assessment of patient and family overall experience of care delivered by interdisciplinary teams at the health system or facility level” and “Assessment of patient and family perceptions of the adequacy of, efficiency of team based care at the health system or facility level” - It is interesting that these measures are looking at the patient and family experience and perceptions of IDT care yet there are no measures to see if providers are adequately trained to know how a quality IDT should function. An IDT is not simply a collection of providers that are all caring for the same patients.

A discussion of Team-based, Interdisciplinary Care is included in the “Research Recommendations” section of the report and appropriately recognizes a need to define terms related to IDTs, explicitly mentioning composition of teams and functional roles within them. As metrics evolve it will also be important to define what is considered a high-quality functioning IDT. The Geriatric Interdisciplinary Team Initiative (GITT) of the Hartford Institute for Geriatric Nursing would be an excellent resource for IDT training and search for potential measures. In measures focused on patient experience or satisfaction it will be important to consider that frail older adults may be unable to complete surveys, especially over the phone, due to a variety of issues (e.g., cognitive impairment, hearing, stamina). Presume this is the reason “family” is included in the measure?

Clinical, Community and Cross-Disciplinary Relationships: The only recommended measure for this domain is to rely on “national measure sets.” Unfortunately these sets have almost nothing to do with frail elders. Examples of issues worthy of measure for frail older adults include: caregiver burden; confidence the care system is able to meet their needs; being able to determine their living setting while in decline; availability of and connection to LTSS; tendency to spend private assets for supportive services; patient-centered goals and priorities, the degree to which the care plan serves those goals and priorities and availability of the care plan to all providers.

> NQF Response

NQF appreciates these comments and has addressed these concerns to the extent possible. NQF acknowledges the significant work currently

underway within these domains, and acknowledges the need for further work to explore these issues and identify additional priority measurement concepts.

Children’s Hospital Association

Ellen Schwalenstocker

The Children’s Hospital Association appreciates the recognition of assessing needs of specific populations (under diversity and retention - p. 4). I would encourage the use of the term person/family-centered rather than patient-centered throughout the document. It is a little unclear to me how the Committee prioritized the proposed measure concepts. Under training and development, it would seem to me that practice-based learning and improvement and building team-based and safety cultures will be critical in building the workforce to achieve system-wide transformation. The Children’s Hospital Association also underscores the importance of measurement focused on health plan network adequacy (under capacity and productivity).

> NQF Response

NQF appreciates these comments and has revised the report accordingly. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area.

AFT Healthcare American Federation of Teachers, AFL-CIO

Kelly Trautner

Diversity and Retention

A measure that draws upon the ARHQ Survey on Patient Safety Culture would be an important addition to the workforce diversity and retention proposed measure concepts for many reasons, including those set forth below.

Higher scores on patient safety culture are associated with lower nurse turnover. This assertion is supported by research, including the following:

- University of Michigan Health System finds that “Higher patient safety culture scores are associated with lower rates of nurse turnover, infections, and pressure ulcers and other complications of care.” (<http://www.uofmhealth.org/quality-safety/patient-safety-culture>)

- AHRQ compiled research showing organizational climate affects employee satisfaction and decisions to leave : http://www.ahrq.gov/professionals/clinicians-providers/resources/nursing/resources/nurseshdbk/StoneP_CSHQHCE.pdf

The perceptions of frontline staff regarding safety culture and work environment are important to capture. At least one study shows that the perceptions of frontline staff differ from those of management:

- Frontline staff perceptions of poor safety climate were associated with higher readmission rates for certain conditions, but senior management's perceptions were not. (Luke O. Hansen, Mark V. Williams, and Sara J. Singer, Health Services Research, April 2011, 46(2): 596-616.

Both the AHRQ Survey on Patient Safety Culture and the Press Ganey Employee Voice survey are helpful in assessing the types of environments that enhance employee diversity and retention.

The NQF's nursing hours per patient day measure is also instructive in measuring workforce diversity and retention, as research has associated decreased staffing with burnout and decreased job satisfaction:

- Each additional patient over four per nurse carries a 23 percent risk of increased burnout and a 15 percent decrease in job satisfaction (Linda Aiken, et. al., The Journal of the American Medical Association, 288.16 [2002]).

Research and publications supported by the Robert Wood Johnson Foundation are also useful in developing the Diversity and Retention measure concepts.

Infrastructure

In addition to the proposed measure concepts related to health information technology (HIT), NQF should include assessments to ensure the following:

- Frontline worker representatives are informed about, included in, and have a meaningful voice at all stages of health IT decision-making, both pre- and post-implementation;
- Changes resulting from new HIT systems are discussed with frontline workers prior to implementation;

- New HIT systems are phased in gradually and carefully, with pilot tests in selected units;
- Manual overrides of the system are permitted when necessary;
- Extra nursing staff is scheduled during the introduction of new HIT systems; and
- HIT systems “talk” to other systems within the facility or network.

AFT Healthcare has done extensive work on this topic and would like to participate in discussions and share expertise as the measure is further developed.

> *NQF Response*

NQF appreciates these comments and has addressed these concerns to the extent possible. NQF acknowledges the significant work currently underway within these domains, and acknowledges the need for further work to explore these issues and identify additional priority measurement concepts.

Administration for Community Living (ACL)

Jamie Kendall

INCLUDING DISABILITY CAPACITY BUILDING IN DIRECT CARE WORKFORCE TRAINING

Beginning on page 14, we are very pleased to see an emphasis on training and the important role that holds for the direct care workforce. In terms of the list of proposed measure concepts, we would like to see that disability is included specifically in future efforts, in addition to older adults, (see bullet 1)

There is data highlighting a need for training around disability in this area. For example, In a survey exploring the training of health care professionals, more than 80% of U.S. medical school students report receiving no clinical training regarding people with intellectual disabilities; 66% report not receiving enough classroom instruction on intellectual disabilities. More than 50% of medical and dental school deans report that graduates of their programs are simply “not competent” to treat people with intellectual disabilities and more than half of students agree. Additionally, 50% of U.S. medical and dental school deans reported that clinical training to treat people with intellectual disabilities is not a high priority with most citing “lack of curriculum time” as

the primary reason.

Even though they report a lack of instruction, approximately 75% of students express interest in treating people with intellectual disabilities as part of their careers if given the opportunity. Meanwhile, almost all administrators say they would implement a curriculum regarding treatment of people with intellectual disabilities if given one. This data is taken from: Krahn G, Hammond L, Turner A. A Cascade of Disparities: Health and Health Care Access for People with Intellectual Disabilities. *Mental Retardation and Developmental Disabilities research Reviews* 2006;12:70-82. See also: Hoder M., Waldman H., Hoed H. Preparing Health Professionals to Provide Care to Individuals with Disabilities. *International Journal of Oral Science* 1(2):66-71;2009.

Another study that also reinforces this finding: "Access to subspecialty care for patients with mobility impairment: a survey." 1Center for Quality of Care Research, Baystate Medical Center, Springfield, Massachusetts. This study's finding found that individuals who use wheelchairs have difficulty accessing physicians and receive less preventive care than their able-bodied counterparts. In this study, the objective was to learn about the accessibility of medical and surgical subspecialist practices for patients with mobility impairment. A telephone survey was used to try to make an appointment for a fictional patient who was obese and hemiparetic, used a wheelchair, and could not self-transfer from chair to examination table. The study looked at accessibility of the practice, reasons for lack of accessibility, and planned method of transfer of the patient to an examination table. It found that of 256 practices, 56 (22%) reported that they could not accommodate the patient, 9 (4%) reported that the building was inaccessible, 47 (18%) reported inability to transfer a patient from a wheelchair to an examination table, and 22 (9%) reported use of height-adjustable tables or a lift for transfer. Gynecology was the subspecialty with the highest rate of inaccessible practices (44%). *Ann Intern Med*. 2013 Mar 19;158(6):1-17.

We hope that future efforts on training of workforce will include measuring how the workforce is trained regarding working with individuals with disabilities.

PERSON CENTEREDNESS

Throughout the report, the word patient is used. We respectfully ask that you consider adopting a more person centered approach by using the word "person". Taken from the NQF report "NQF MAP May 30, 2014 draft report - Finding Common Ground for Healthcare Priorities: Families of Measures for Assessing Affordability, Population Health, and Person-and-Family-Centered Care". "NQF stated that (page 21) - "one single term cannot apply to all individuals in all situations; in actuality, an individual with many needs may self-identify as a person, client, or patient at a single point in time." "The task force agreed to use the word 'person' as an over-arching term to encompass the health and healthcare needs of all individuals, regardless of age, setting, or health status."

IT INFRASTRUCTURE

We are pleased to see that the topic of health information technology infrastructure is addressed in this report. We believe health IT can be a valuable workforce tool, and in future measure efforts we would like to see the incorporation of the consumer, caregiver, and LTSS workforce into health information exchange.

> NQF Response

NQF appreciates these recommendations and has incorporated them into the report to the extent possible. NQF acknowledges that more work is needed to identify additional priority measurement concepts in this topic area..

General Comments

Association of American Medical Colleges

Mary Wheatley

The Association of American Medical Colleges (AAMC or Association) which represents all 141 accredited U.S. medical schools, nearly 400 major teaching hospitals and health systems, and nearly 90 academic and scientific societies, and through these institutions and organizations represents 128,000 faculty members, 83,000 medical students, and 110,000 resident physicians, is pleased to comment on the draft report regarding workforce measurement. The report is part of a contract with National Quality Forum (NQF) from the Department

of Health and Human Services (HHS) to identify measure gaps and to help identify priorities for measure development. The AAMC appreciates the Health Workforce Committee's (or Committee's) efforts to identify and prioritize gaps in workforce measures.

> NQF Response

NQF appreciates your feedback on the report.

Association of American Medical Colleges

Mary Wheatley

The AAMC believes physicians are an integral part of a larger health care workforce, a workforce that needs to adapt to both population changes and health delivery changes. The AAMC Center for Workforce Studies has been a major contributor of primary and secondary research addressing the size and distribution of the health workforce, with recent research focusing on the changing workforce needs within new care delivery models. Additionally, the AAMC has been working with our educational partners to ensure the next generation of physicians have the competencies and skills to work with interprofessional teams and can deliver patient-centered care. Finally, the AAMC has been working with academic medical centers to transform their systems to deliver new and innovative models of care. Findings from these activities informed our comments on the domains and measure concepts that the Committee identified in the draft report.

Throughout the document, the Committee refers to different workforce teams. The composition of the workforce team can appropriately vary, however, based on the needs of different patient populations, communities, and as a result of state laws. Effective and valid measures must allow for these differences. The AAMC agrees with the recommendation that more research is needed in defining the roles of the team and how those roles might change for different patient populations. As a founding member of the Interprofessional Education Collaborative (IPEC), the AAMC recommends the NQF report reference IPEC's report, Core Competencies for Interprofessional Collaborative Practice[1], as a guide for the work referenced.

The report has a heavy emphasis on accountable

care organizations (ACOs). The AAMC suggests incorporating more examples of other activities that encourage care coordination such as bundled payment and pay-for-performance programs.[1] <https://ipecollaborative.org/uploads/IPEC-Core-Competencies.pdf>

> NQF Response

NQF appreciates your thoughtful comments on the report.

Altarum Center for Elder Care and Advanced Illness

Holly Stanley

Like babies and young children, the approach, evaluation and caring for frail older adults is often very dissimilar to that needed by younger less impaired adults. Likewise, considerations in the measurements of structure, process, and outcomes also often have special considerations. As with the recent Alzheimer's Disease and Related Dementias project, perhaps there should be consideration of potential benefit for a future project aimed at Frail Older Adults (or a separate domain in Workforce).

> NQF Response

NQF appreciates this suggestion for possible future work.

Service Employees International Union

Howard Berliner

As a member of the Health Workforce Committee I attended the two day session in mid-April. I found the discussion to be of great interest and of great importance since health workforce has been all too often overlooked in health care quality measurement.

Before addressing the report specifically, it seems important to note that while there are numerous measures of health workforce components, few have been empirically validated as having a direct impact on quality. We know, for example, that hospitals that have more RN's on the floor have a lower mortality rate than those that have fewer—but this is one of the few measures for which there has been a reliable research background and literature. We discussed at the meeting measures such as numbers of physicians per some unit of population or geography,

“teaminess” as a measure of something and extensive measurement of the use of EHR and Telehealth. The problem is that there is no base upon which to utilize these potential measurements. We can easily come up with physician to population ratios, but we have no real evidence of what constitutes an acceptable (high quality) number or how that number might be influenced by the presence of nurse practitioners, physician assistants, or other health team members. Moreover, the number itself is meaningless unless we can measure access to the provider population and create an understanding of what access measures have an impact on quality. For these reasons, I found the discussion at the meeting of a need for NQF to use its influence to promote research into the health workforce and its impact on quality of care to be most important outcome. If the ultimate use of these measurements by CMS results in financial penalties to health facilities, then it is even more important to establish the research base upon which such actions are based.

> NQF Response

NQF appreciates this suggestion for possible future work.

Administration for Community Living (ACL)

Jamie Kendall

The report is well written and will be very helpful to the field. We have a few thoughts below and appreciate your interest. If you would like to discuss more we would be happy to do so. As overarching comments, we hope that the work can continue to move forward with further building out the workforce issues around Long Term Services and Supports, incorporate an approach that includes workforce training around the needs of individuals with disabilities, and also continue to embody a person centered approach for individuals who work with the direct care workforce.

> NQF Response

NQF appreciates your thoughtful comments on the report.

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