



ACCELERATING AND ALIGNING
POPULATION-BASED PAYMENT MODELS:

PERFORMANCE MEASUREMENT

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About the CMS Alliance to Modernize Healthcare

The Centers for Medicare & Medicaid Services (CMS) sponsors the CMS Alliance to Modernize Healthcare (CAMH), the first federally funded research and development center (FFRDC) dedicated to strengthening our nation's healthcare system. The CAMH FFRDC enables CMS, the Department of Health and Human Services (HHS), and other government entities to access unbiased research, advice, guidance, and analysis to solve complex business, policy, technology, and operational challenges in health mission areas. The FFRDC objectively analyzes long-term health system problems, addresses complex technical questions, and generates creative and cost-effective solutions in strategic areas such as quality of care, new payment models, and business transformation.

Formally established under Federal Acquisition Regulation (FAR) Part 35.017, FFRDCs meet special, long-term research and development needs integral to the mission of the sponsoring agency—work that existing in-house or commercial contractor resources cannot fulfill as effectively. FFRDCs operate in the public interest, free from conflicts of interest, and are managed and/or administered by not-for-profit organizations, universities, or industrial firms as separate operating units. The CAMH FFRDC applies a combination of large-scale enterprise systems engineering and specialized health subject matter expertise to achieve the strategic objectives of CMS, HHS, and other government organizations charged with health-related missions. As a trusted, not-for-profit adviser, the CAMH FFRDC has access, beyond what is allowed in normal contractual relationships, to government and supplier data, including sensitive and proprietary data, and to employees and government facilities and equipment that support health missions.

CMS conducted a competitive acquisition in 2012 and awarded the CAMH FFRDC contract to The MITRE Corporation (MITRE). MITRE operates the CAMH FFRDC in partnership with CMS and HHS, and maintains a collaborative alliance of partners from nonprofits, academia, and industry. This alliance provides specialized expertise, health capabilities, and innovative solutions to transform delivery of the nation's health care services. Government organizations and other entities have ready access to this network of partners, including RAND Health, the Brookings Institution, and other leading healthcare organizations. This includes select qualified small and disadvantaged business. The FFRDC is open to all CMS and HHS Operating Divisions and Staff Divisions. In addition, government entities outside of CMS and HHS can use the FFRDC with permission of CMS, CAMH's primary sponsor.

Executive Summary

The Health Care Payment Learning & Action Network (LAN) was created to drive alignment in payment approaches across and within the public and private sectors of the U.S. health care system. To advance this goal, the Population-Based Payment Work Group (“the Work Group”) was convened by the LAN Guiding Committee (GC) and charged with addressing issues critical to the success and accelerated adoption of population-based payment (PBP) models, specifically patient attribution, financial benchmarking, data sharing, and performance measurement. Composed of diverse health care stakeholders, the Work Group deliberated, incorporated input from LAN participants, and reached consensus on many critical issues related to performance measurement, the subject of this White Paper.

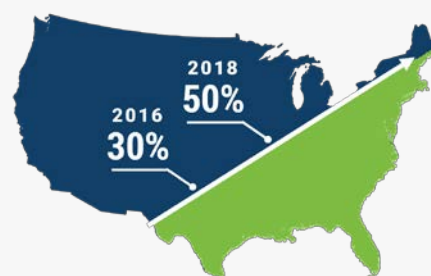
The Work Group acknowledges that moving payment incentives away from fee-for-service (FFS) toward shared-risk and PBP is necessary, although not sufficient in its own right, to create a value-based health care system. The existing FFS system creates incentives for additional volume of services, while also undervaluing certain services. The current FFS system is not conducive to the delivery of person-centered care because it does not systematically reward high-quality, cost-effective care. By contrast, population-based payment models offer providers the incentives and flexibility to strategically invest delivery system resources, treat patients holistically, and coordinate care. The Work Group believes that the health care system should transition toward shared-risk and alternative payment models (APMs), including population-based payments. The Work Group hopes the recommendations on performance measurement will provide an advantageous starting point for payers and providers committed to PBP models.

The Work Group believes that performance measurement, which evaluates provider organizations on the basis of quality and outcomes, is foundational to the success of PBP models because it helps ensure that patients receive high-quality care and achieve their health goal. The White Paper documents principles and recommendations that should guide approaches to performance measurement in PBP models. The aim is to

Health Care Payment Learning & Action Network

To achieve the goal of better care, smarter spending, and healthier people, the U.S. health care system must substantially reform its payment structure to incentivize quality, health outcomes, and value over volume. Such alignment requires a fundamental change in how health care is organized and delivered and requires the participation of the entire health care ecosystem, including partnership with other sectors. The Health Care Payment Learning & Action Network (LAN) was established as a collaborative network of public and private stakeholders, including health plans, providers, patients, employers, consumers, states, federal agencies, and other partners within the health care ecosystem. By making a commitment to changing payment models, establishing a common framework, aligning approaches to payment innovation, sharing information about successful models, and encouraging use of best practices, the LAN can help reduce barriers and accelerate the adoption of APMs.

U.S. Health Care Payments in APMs



support increased alignment in how public and private payers assess provider performance in PBP models, and in doing so, ensure that patients receive high quality care and achieve positive outcomes.

Performance measurement currently faces multiple challenges, including a cacophony of measures with confusing results, the lack of available data to calculate important metrics, and burdens associated with capturing and reporting data. In order to overcome these challenges, this White Paper describes the key characteristics of a measurement system that can help sustain PBP models that meet the Triple Aim of better care, better health, and lower costs. More specifically, the Work Group believes that performance measurement is *foundational* to success in PBP models, that measurement in PBP models must be *fundamentally different* from measurement in fee-for-service, that performance measurement must cover the *continuum of care*, and that performance measurement must *incentivize improvement*.

The White Paper provides guidance on performance measurement, with a goal of creating a set of consensus recommendations for use nationally. At a high level, the Work Group recommends the following:

- Future-state measures must be based as much as possible on results that matter to patients.
- Reliance on core measure sets is valuable, but continued innovation and refinement are needed to ensure measure sets are comprehensive, parsimonious, and outcome-oriented.
- A governance process is needed to oversee and accelerate the development, testing, and use of new, high priority measures.
- The infrastructure nationally must be sufficient to systematically collect, use, and report clinically rich and patient-reported data.
- Measurement systems must create meaningful incentives to deliver high-quality care, achieve favorable health outcomes, improve patient care experiences, and manage the total cost of care.
- Performance targets must motivate improvement across the performance continuum, promote best practice sharing, and enable long-term planning and commitment to improvement.

The paper concludes with some immediate next steps that stakeholders can take to advance the Work Group's recommended approach to performance measurement in PBP models.

Overview

The LAN established its GC in May 2015 as the collaborative body charged with advancing alignment of payment approaches across and within the private and public sectors. This alignment aims to accelerate the adoption of alternative payment models (APMs) that reward quality and value in health care. CAMH, the federally funded research and development center operated by The MITRE Corporation, was asked to convene this large national initiative.

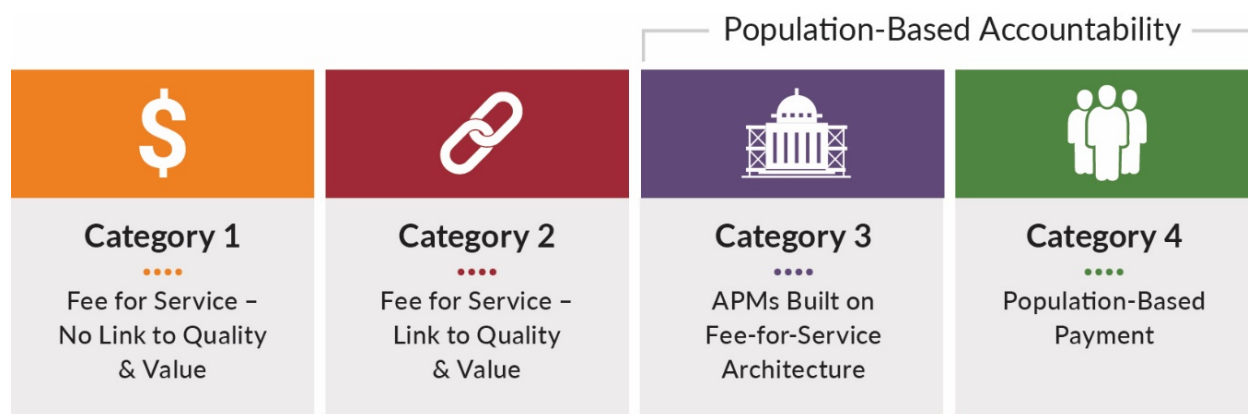
In keeping with the goals of HHS, the LAN aims to have 30% of U.S. health care payments in alternative payment models (by 2016, and 50% by 2018). One possibility for reform is a move away from FFS payments to APMs, such as PBP models in which providers accept accountability for the total cost of care, care quality, and health outcomes for a patient population across the full-care continuum. This is a particularly promising approach for creating and sustaining a delivery system that values quality, cost effectiveness, and patient engagement.

Work Group Charge and Scope

In October 2015, the LAN GC convened the PBP Work Group and charged it with prioritizing methodologies and exploring alignment issues in support of the development, adoption, and success of population-based payment models under which providers accept accountability for a patient population across the full continuum of care.

Recommendations throughout this paper refer to APMs in which providers accept accountability for the full continuum of care that can be classified in Categories 3 and 4 of the APM Framework, depending on how they handle financial risk for provider organizations. The principles and recommendations presented in this paper are directed toward that subset of APMs which, for the sake of convenience, are referred to as “PBP models” (Figure 1). See [Appendix C](#) for additional information about related content produced by the LAN that informed the development of this paper.

Figure 1: APM Framework (At-a-Glance)



Source: [Alternative Payment Model \(APM\) Framework and Progress Tracking Work Group](#)

The Work Group determined that four priority issues are foundational for the success of population-based payment models. These include:

- [Patient attribution](#);
- [Financial benchmarking](#);
- Performance measurement; and
- [Data sharing](#).

Population-based models vary in the mechanism by which payment passes from payers to providers. Some models use a global budget while retaining the underlying FFS payment architecture. In others, an actual population-based payment is made from payer to provider. All of these population-based models, however, involve provider accountability for a patient population across the full continuum of care, including preventive care to end-of-life care, and everything in between (with the goal of achieving better quality and outcomes and lower total cost for the population involved).¹ The PBP Work Group’s efforts pertain to the full range of models in Categories 3 and 4 in which providers accept accountability for a population across the full care continuum for physical and behavioral health. The CMS Pioneer ACO

¹ This definition is based on definitions found in the following sources: McClellan, et al., “A National Strategy To Put Accountable Care Into Practice,” *Health Affairs* **29** (2010): 982–990; and Mark McClellan, James Kent, Stephen J. Beales, Samuel I.A. Cohen, Michael Macdonnell, Andrea Thoumi, Mariam Abdulmalik, and Ara Darzi, “Accountable Care Around The World: A Framework To Guide Reform Strategies,” *Health Affairs* **33** (2014): 1507–1515.

Model and Medicare Shared Savings Program (MSSP), and private sector models, such as the Blue Cross Blue Shield of Massachusetts Alternative Quality Contract (AQC), represent examples of Category 3; they employ a global population-based budget, but retain the underlying FFS architecture.

By contrast, the CMS Next Generation ACO program or commercial models, such as Kaiser Permanente, represent examples of Category 4 in which the population-based payment is made from payer to provider. The PBP Work Group's focus differs from that of the Clinical Episode Payment (CEP) Work Group because, while both share a focus on Categories 3 and 4, PBP models involve provider accountability for an entire population, while in CEP models, providers assume accountability for all the patients in a specific population who are affected by a particular condition, health event, or treatment intervention.

To encourage shifts away from FFS payment to enable more substantial reforms in care delivery, PBP models must address priorities such as attributing patients to a provider group, setting and updating financial benchmarks, sharing data between payers, providers, purchasers, and patients in the market, and measuring performance. In order to assure equity, better alignment is needed between the way these components are implemented in the private and public sectors.

The PBP Work Group brings together public and private stakeholders to develop recommendations. A roster of Work Group members, representing the diverse constituencies brought together by the LAN, is provided in [Appendix A](#). Work Group members participate in this effort as individuals and not on behalf of their organizations.

Recognizing that payment reform must ultimately serve the interests of consumers and patients, the LAN Guiding Committee endorsed a set of Principles for Patient- and Family-Centered Payment. These principles, prepared by the LAN Consumer and Patient Affinity Group, are intended as guideposts so that new payment models and implementation activities can address the needs and priorities of patients and families. The principles are reflected in this White Paper, and the text is included in [Appendix D](#).

Purpose of the White Paper

This paper focuses on performance measurement, which encompasses the development and implementation of metrics that assess the clinical quality, health outcomes, patient care experience, and cost of care provided to patients. Performance measurement can be used both for accountability and improvement purposes. Performance measurement makes it possible to monitor and quantify how well population-based payment models achieve and reward the Triple Aim of better care, better health, and lower costs. In conjunction with other elements in PBP models (e.g., financial benchmarking and patient attribution), performance measurement enables continuous quality improvement by highlighting those aspects of care delivery in need of optimization and by establishing clear performance goals.

Performance measurement also provides a framework that patients, payers, purchasers, providers, and other key stakeholders can use to productively collaborate to achieve their collective goals for patients, populations, and the health care system as a whole. For these reasons, the success of PBP models hinge on the proper implementation of measurement systems.

Although performance measurement systems hold great promise for improving the overall value of health care in the U.S., significant challenges currently prevent them from achieving their full potential. Available measures are typically not suitable for assessing how well a health system delivers care across the continuum. Fragmentation in data reporting and quality measures is creating confusion and undue administrative burden while the data needed to evaluate outcomes that matter to patients are not systematically collected.

Moreover, the national measure-development apparatus is not ideally configured to rapidly develop measures required for future PBP models. The challenges associated with performance measurement may be considerable, but the Work Group and the LAN as a whole believe strongly that alignment around common principles and approaches, across and within the public and private sectors, will accelerate progress toward unleashing the full potential of performance measurement to transform the health care system. To further this aim, the Work Group deliberated at length and reached a set of baseline, consensual positions that recognize and defer to the roles and positions maintained by other multi-stakeholder groups.

This paper is grounded in the notion that payers, providers, purchasers, and patients should be collectively accountable for ensuring that the health care system delivers the highest possible value for patients and consumers. Moreover, the ideas articulated in the paper are predicated on the notion that the measures required for PBP models are fundamentally different from the measures used in traditional FFS models. The existing measure sets are appropriate for use now and can contribute to significantly advancing quality, outcomes, and cost while the more outcomes-oriented measure sets envisioned here are developed. This paper proposes sets of principles and recommendations on how to design measurement systems that can support the long-term success and sustainability of PBP models. It also addresses steps that must be taken to put into place the governance structure needed to prioritize and accelerate the development of measures that are suitable for PBP models.

The Work Group conceives of measurement systems as being composed of three components, each of which is needed to reward providers who deliver high-value health care: 1) measure sets; 2) methods for evaluating performance on measures (e.g., performance scoring); and 3) methods for using performance assessments to adjust payments (Figure 2). In other words, in order to explicitly reward providers who deliver high-value health care via the payment model, measurement systems must necessarily specify measures, employ some method for calculating overall performance scores, and adopt some approach for adjusting payments in light of those performance scores. In order for

Definitions

These are the key performance measurement terms used throughout this paper:

Full continuum of care: All aspects of care delivery, spanning preventive to end-of-life services in all settings.

Measure sets: A collection of measures that are mutually reinforcing to produce positive outcomes for a defined patient population.

Population: A group of people who are cared for by a particular provider, live in a particular community, or share a similar characteristic (e.g., condition, age, gender, race, or ethnicity).

Population-Based Payment (PBP) Model: A payment model in which a provider organization is given a population-based global budget or payment and accepts accountability for managing the total cost of care, quality, and outcomes for a defined patient population across the full continuum of care. PBP models discussed in this paper correspond to payment models in Categories 3 and 4 of the LAN's APM Framework (Figure 1).

Total Cost of Care (TCOC): A broad indicator of spending for a given population (i.e., payments from payer to provider organizations). In the context of PBP models, in which provider accountability spans the full continuum of care, TCOC includes all spending associated with caring for a defined population, including provider and facility fees, inpatient and ambulatory care, pharmacy, behavioral health, laboratory, imaging, and other ancillary services.

measurement systems to function well, these three components must be designed deliberately to ensure they work properly together and are appropriate for a particular payment model.

By approaching the topic from the perspective of measurement systems and illuminating the idea that measures required for PBP models differ from those that have been useful under FFS payment, the Work Group hopes to chart new and fertile ground and drive alignments around broad-scale design elements in public and private sector PBP models—as confirmed by PBP-specific measurement systems.

Figure 2: Components of Measurement Systems



This paper does not seek to enumerate the measures that payers should use to evaluate accountable provider organizations participating in PBP models. For reasons discussed more fully later in the paper, measurement systems for PBP models should draw from existing core measure sets, but the paper intentionally does not advance recommendations on specific measures to be used.² Rather, the purpose of this paper is to recommend ways to design and implement measurement systems in PBP models, including important advances needed in the types of measures and the data and reporting infrastructure required for the long-term success and sustainability of PBP models.

It is paramount to understand the incentives that motivate patients, providers, payers, and purchasers to participate in population-based payment models. Identifying the interests of different stakeholder groups (including states) is therefore critical for properly designing incentive structures and establishing their overall objectives. Keeping in mind that a single measurement system may not be able to meet all the interests of all health care stakeholders, the following list identifies some of the most critical interests for each stakeholder in performance measurement.

- Patients have an interest in ensuring that the economic incentives in PBP models do not lead to underutilization of care or harm from over-treatment. Performance measurement is a vital tool for ensuring that patients receive the care they need through PBP models, and can assist in the selection of provider organizations and individual providers. As discussed at greater length later, using the proper types of measures and measure sets can help providers to focus on achieving outcomes that matter most to patients.

² A selection of measure/measure set examples available today can be found in [Appendix B](#), and the Work Group encourages readers to consult those materials.

- Providers have a unique and particular interest in performance measurement for multiple reasons. First, performance measurement is a vital tool that enables providers to assess the quality and effectiveness of care, identify and address unexplained variations in practice patterns and outcomes, and continuously improve care provided to patients and populations. Providers also have an interest in performance measurement systems because the systems increasingly form the basis for accountability, both in payment and in public reporting of results.
- Payers have an important interest in performance measurement because it is foundational to new payment models, such as PBP models, that enable a shift away from incentives that reward volume rather than value in health care. To accomplish the goals of improved quality, outcomes, patient experiences, and cost, payers require measurement systems that address each of these. These measurement systems enable public and private payers to hold providers accountable for performance based on these domains. With these systems, payers also are accountable to purchasers and patients.
- Purchasers, like patients, employers, and public programs are interested in using performance measurement as one mechanism to ensure that the population is receiving needed care while not being over-treated with unwarranted services. For purchasers, performance measurement also serves as a means for selecting plans and providers for their employees.

Foundational Principles on Performance Measurement

In order to ensure that performance measurement systems properly incentivize the delivery of high-value care in population-based payment models, the Work Group established several principles that serve as a foundation for the Work Group's thinking and approach to performance measurement. Although the principles focus on how to use performance measurement to promote provider accountability for the continuum of care for a population, they also consider the use of performance measurement in other contexts.

Four principles of performance measurement for PBP models:

- [Foundational](#): Performance measurement is at the heart of PBP models' potential to advance the Triple Aim of better care, better health, and lower costs.
- [Continuum of Care](#): Measures for PBP models must cover the full continuum of care across time, providers, and settings.
- [Different from Fee-for-Service](#): Measures for PBP models must be more outcome-based than prevailing FFS measures, which have focused largely on evaluation of specific care processes for individual conditions or care settings.
- [Incentivizing Improvement](#): PBP models must create meaningful incentives to improve health care quality, health outcomes, patient care experiences, and cost.

Principle 1: Performance measurement is foundational to the success of population-based payment models to advance better outcomes for all patients and populations.

Performance measurement makes it possible to monitor, in a transparent and quantifiable manner, how well PBP models achieve the Triple Aim of better care, better health, and lower costs, and also make it possible to reward performance through the incentive structures that are central to PBP models. Performance measurement also enables transparency regarding the overall results of PBP models, thereby enabling ongoing assessment and improvement of payment-model designs. It also provides information on the results achieved by participating payers and providers, which can inform individual purchaser and consumer choices in the market and motivate ongoing improvement. Performance measurement enables continuous quality improvement by highlighting aspects of care delivery in need of optimization and by establishing common performance targets or goals for specific dimensions of care, including improvements in health equity. Finally, performance measurement provides a framework that patients, payers, purchasers, providers, and other key stakeholders can use to collaborate productively toward the achievement of their collective goals for patients and the health care system as a whole.

The Work Group used the framework from the Institute of Medicine’s report [Vital Signs: Core Metrics for Health and Health Care Progress](#) (National Academies Press, 2015) in its discussions of performance measures and a measurement system for population-based payment. The domains, which include healthy people, quality care, affordable care, and engaged people, map well to other frameworks such as the CMS Quality Strategy.

Principle 2: Because population-based payment models address the full continuum of care, measure sets have to span the full continuum across time, across providers, and across settings.

The measure sets in widespread use today are largely rooted in FFS payment models, a consequence of the nation’s long-standing reliance on the FFS payment system. As a result, these measures have focused primarily on evaluating care within a particular setting or specialty rather than measuring how a system as a whole performs across the health care continuum. By contrast, PBP models require system accountability (i.e., accountability that is broader than a single provider or specialty) and hold providers accountable for the full continuum of care. Therefore, measure sets used in these PBP models must cover the full continuum of care, meaning both specialty and primary care, as well as hospital and post-acute care. Measures for PBP models must also cover prevention and well-being as well as therapeutic services, and these services must span from the beginning to the end of life.

The Work Group recognizes that despite the vast array of performance measures that exist today, there remain many significant gaps covering important areas of care for which there are no accepted or widely used measures today. The Work Group also recognizes that the development of numerous measures to address these gaps could compound the challenges of “measure cacophony” that exist today (i.e., the fragmentation and burden associated with an abundance of overlapping measures that are difficult to reconcile and interpret). As discussed in the next principle, one way to minimize measure cacophony is to utilize measures that are different from those traditionally used in FFS models (see Principle 3).

Furthermore, as discussed in Recommendations 2 and 3, additional and directed innovation in measurement science and development should aim to address critical gaps while also advancing the goals of a parsimonious, person-centered, outcomes-focused measurement system for use in PBP models.

***Principle 3:** The measures required for the long-term success and sustainability of population-based payment models are fundamentally different from the measures used in traditional FFS payment models.*

Unlike the measures used in FFS models, measures for PBP models can be more “macro” in their orientation and more outcomes based, rather than evaluating performance on narrow and specific care processes, conditions, or care settings. The Work Group holds that existing core measures sets can support a strong transition to population-based payment models, but that during this transition, the development, testing, and adoption of more outcomes-oriented measure sets for the long-term sustainability and success of PBP models must be accelerated.

The development of core measure sets arose in response to an ever increasing volume of performance measures, which, in turn, arose in response to an environment in which FFS payment predominated. In that context, measurement that addresses specific care processes for each specialty, condition, and care setting was appropriate. By contrast, with provider systems and payers in PBP models accepting accountability for producing better care, better health, and lower cost across the full continuum of care, the measures required to assess and reward performance must be more outcomes oriented, and measured at the system level. This paper considers how to accelerate progress toward this form of measurement, and how doing so may alleviate some of the problems of measure cacophony that have arisen when a more atomistic measurement approach was required for performance-based payment.

***Principle 4:** To promote better results for patients and populations, the use of performance measurement for payment in PBP models must create meaningful incentives for improvement.*

The Work Group believes that an important function of performance measurement in PBP models is to ensure that the population is receiving needed care while not being over-treated with unwarranted services. For this reason, it is especially important for purchasers and consumers to know that measurement systems are in place to monitor and hold payers and providers accountable for the quality of care delivered and health outcomes achieved. A second and related function of performance measurement systems in PBP models is to enable providers to continuously improve the quality and outcomes of care. Performance measurement systems will not achieve their goal of supporting progress toward the Triple Aim of better care, better health, and lower cost unless they are viewed as tools to improve care. In addition, the measures that PBP models use to reward performance must also create transparency about how well the models are performing in delivering the promised results of better care, better health, and lower cost, and allow purchasers and consumers to evaluate the performance of individual payers and provider systems based on these dimensions.

Recommendations

In preparing this paper, the Work Group included public and private stakeholders from many different perspectives related to measurement. Documents consulted during the development of this paper are referenced in [Appendix E](#). The Work Group's recommendations are intended to help measurement systems properly incentivize and reward accountable provider organizations that participate in PBP models.

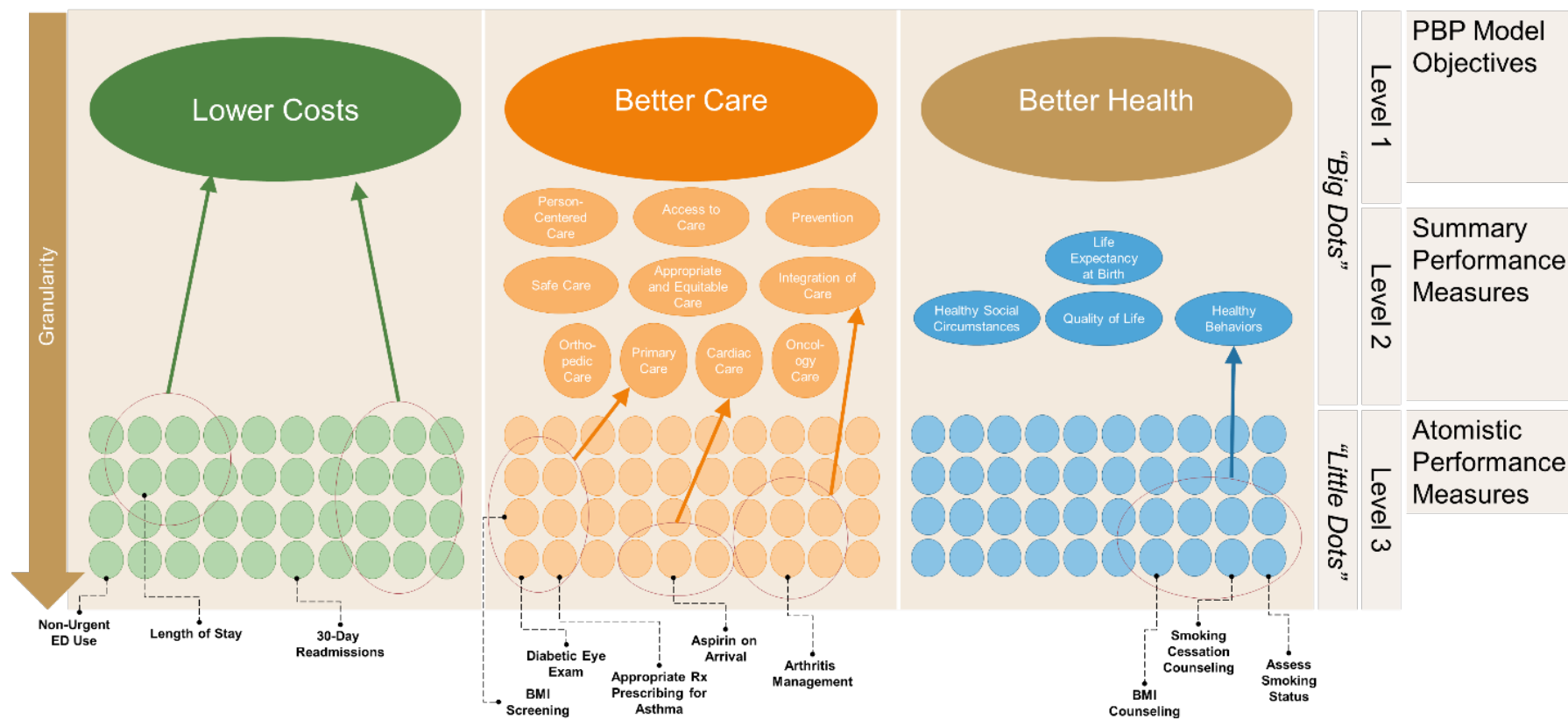
***Recommendation 1:** To support the long-term success and sustainability of population-based payment models, future-state measures must be based as much as possible on results that matter to patients (e.g., functional status) or the best available intermediate outcomes known to produce these results.*

Given that the accountabilities that providers assume under PBP models differ fundamentally from those assumed under traditional FFS payment models, the measures appropriate for use in PBP models are different from those that have been useful under FFS payment. Specifically, under fee-for-service payment, accountability rarely, if ever, spans care settings or specialties. As a result, measurement was focused on individual care settings and/or specialties, and largely evaluated processes of care occurring in each.

By contrast, PBP models establish provider accountability for care across the continuum (from preventive care to end-of-life care and everything in between) and the unit of accountability is the provider organization or system. Thus, the measures suited to these models must address overall system performance and be oriented increasingly toward assessment of outcomes, not the processes used to produce them. Indeed, given PBP provider accountability for care across the continuum, if the measurement systems that assess provider performance aimed to capture and incentivize all of the relevant care processes, the problems of measure cacophony that plague the system today could grow much worse. By contrast, moving toward a measurement system that is focused predominantly on the results being produced would require a more limited number of measures, although more granular process-of-care measures would continue to be useful for providers engaged in quality improvement activities. This move away from indicators of care processes in individual care settings and specialties toward system-level outcomes is referred to as a move toward “big dot” measures.

For the purposes of this paper, big dot measures assess the overall system performance based on the outcomes produced, not the processes used to produce them. Perhaps the best illustration of a big dot measure is total cost of care (TCOC). As described in the [Financial Benchmarking White Paper](#), TCOC is a fundamentally important measure in PBP models, as it forms the basis for provider accountability on the cost side of the model. Although providers in PBP models may need to have information about many “little dot” cost measures to appropriately manage TCOC, the accountability measure in the cost domain is truly a big dot measure. Figure 3 illustrates this concept, with TCOC represented as a Level 1 big dot measure, and the more atomistic cost measures that providers may use to monitor and drive improvement on TCOC situated at Level 3.

Figure 3: Measures by Purpose Area



By contrast, there do not exist today Level 1 measures of quality or health that are being used as commonly as TCOC by health care providers, payers and purchasers. In fact, current measures of quality and health often have been confined to the atomistic Level 3 types of measures that have arisen under fee-for-service models. Although the PBP Work Group acknowledges that defining or incorporating a Level 1 global measure of quality care or health (analogous to TCOC on the cost side) is challenging, the Work Group believes that significant progress can and should be made to develop Level 2 measures of quality and health and that these should form the basis for performance incentives in PBP models in the near term. Over the longer term, the PBP Work Group encourages exploration of approaches to measurement and accountability models that might enable Level 1 quality and health measures to be developed and used.

Level 2 big dot measures of quality care and health can take two different forms: (1) condition- or specialty-specific measures; or (2) cross-cutting and focused measures that address goals not connected to a particular condition or type of practice. The first category aligns with the types of measure sets recently released by the CMS/America's Health Insurance Plans (AHIP) Core Quality Measures Collaborative, which included core sets on cardiovascular care, medical oncology, and other conditions and specialty-specific topics. The second category is consistent with the approach taken in the Institute of Medicine *Vital Signs* report, which outlines potential care measures on prevention, person-centered care, safety, and other cross-cutting topics.

“Big dot” measures which include **Level 1 & 2** measures assess the overall system performance based largely on the outcomes produced, rather than on the processes used to produce them.

The Work Group believes that, whenever possible, Level 2 measures used in PBP models should be outcomes based. For example, the Level 2 measure of cardiac care would ideally comprise outcome measures reflecting the results achieved in this domain (e.g., 30-day mortality, health-related quality of life or well-being), not the individual care processes used (e.g., aspirin on arrival). Although the Work Group believes that existing measures are sufficient to support a transition to PBP models, the Work Group also recognizes that, at present and for the reasons outlined earlier, available measures and measure sets consist primarily of process measures, not outcomes. Thus, in the near-term, the Work Group envisions that Level 2 measures will primarily be aggregates of the more atomistic Level 3 measures, which may be largely process-based. Over time, however, and through the approaches outlined later in the paper, the Work Group believes that PBP models can and should eventually employ Level 2 measures that are primarily outcomes-based. This would represent a significant departure from historic performance incentive models, which have rewarded excellence in care processes. By incentivizing and rewarding the achievement of favorable health outcomes, PBP models will incentivize care that does, indeed, translate to better health.

It is important to note that purchasers and consumers will likely want performance information that is more granular than the system-level information required for evaluating and rewarding providers in PBP models. For example, while a system's outcomes in oncology care represent a desirable and appropriate Level 2 measure for financial incentives in a PBP model, the data that individual patients and consumers require to inform their care choices will be more granular, requiring information about the system's performance on specific types of cancers (e.g., breast, lung, prostate) and likely also requiring performance information for practice groups or even individual clinicians within the system. Further discussion about the development and use of Level 2 measures later in this paper seeks to illuminate

how these dual purposes—measurement for payment and measurement for consumer choice—can be addressed.

Finally, and importantly, the Work Group recognizes the fact that the more granular Level 3 measures in the cost domain (e.g., 30-day readmissions, ambulatory care sensitive admissions), while vital information for provider systems to improve TCOC performance, should not play a prominent role in PBP quality incentive measure sets. Doing so would represent double-paying for the cost savings associated with these measures. That is, in PBP models structured to reward savings on TCOC (i.e., shared savings), success on Level 3 cost measures like readmissions are already incentivized and rewarded. Including such measures in PBP quality incentive measure sets would represent paying twice for the same results.

Recommendation 2: Because fragmentation across population-based payment models can undercut success, reliance on core measure sets is valuable. Continued innovation and refinement are needed to ensure measure sets are comprehensive, parsimonious, and outcome oriented.

At a high level, core measure sets establish overarching domains as well as the measurement priorities within those domains. Core sets serve a critical function in measurement systems by driving alignment in the measures used by different payers and providers. This reduces providers' burden of reporting different measures to different payers, while simultaneously strengthening meaningful comparisons among different providers' performances.

In the near-term, available core measure sets should be used in PBP models. Despite the goal of having more outcomes-oriented measure sets form the basis for PBP models, the Work Group strongly maintains that the use of existing measure sets will enable important and meaningful progress to improve quality. While largely composed of condition- or specialty-specific clinical process measures, available core sets for priority specialties and conditions can and should initially be used to form the basis for establishing Level 2 measures of these important clinical quality issues. Using the CMS/AHIP core sets would be one example of how PBP models could implement aggregated Level 2 measures. Many PBP models in place today use similar approaches and measure sets to establish overarching composite scores that are used for payment. However, in order to realize the vision of Level 2 outcome measures and to evaluate to a greater extent the role of clinical-care results in achieving better health outcomes, significant innovation and rapid progress beyond current process-based measure sets will be required. The Work Group maintains that models for accomplishing this innovation in outcomes measurement exist and should be leveraged to realize this vision. Three such examples are highlighted below for illustrative purposes, but others exist as well.

International Consortium for Health Outcomes Measurement: First, the International Consortium for Health Outcomes Measurement (ICHOM) represents one worthy example to consider. ICHOM's work is predicated on the value of alignment in performance measurement, and it focuses exclusively on the measurement of outcomes that matter to patients, such as readmissions, pain, and health-related quality of life. For each health condition examined, ICHOM considers three broad categories of outcomes: 1) acute complications of treatment, 2) patient-reported health and functional outcomes (PROM), and 3) disease control and survival. The resulting measure sets employ a combination of clinically-rich data from health records or registries, administrative data, and patient-reported data to

establish a holistic view of the results achieved for patients with a given condition. Importantly, when a given dimension of functional status or well-being is relevant to more than one condition, ICHOM's proposed tool for measurement of that dimension is the same across conditions. For example, for all conditions in which pain is a relevant dimension to be measured, the same patient-reported outcome tool for assessing pain is recommended, and the same is true for physical functioning, emotional well-being, and other domains of patient functional health status. This is important in that a condition-specific approach to measurement could otherwise exacerbate measure cacophony and disrupt the goal of a holistic view of the patient and a whole-person approach to care. ICHOM's condition-specific framework and process for developing outcome measure sets is worthy of consideration even though the Work Group recommendation that PBP models ultimately need to include a combination of condition-specific and cross-cutting measures (e.g., access, person-centered care, safety, mortality, equity).

National Clinical Registry Network: Second, the work of the National Clinical Registry Network (NCRN) illustrates the potential for both the systematic development of data infrastructure needed to standardize measurement of clinical outcomes for specific conditions and procedures, and the use of these measures to improve patient care. The Society of Thoracic Surgeons' (STS) National Database is an example of the value that such clinical registries can provide. The STS registry was established in 1989 as an initiative of cardiothoracic surgeons seeking to improve the safety and outcomes of care. The registry affords cardiothoracic surgeons nationwide a standardized format for collecting a set of data elements required to systematically measure and compare surgical outcomes. The system employs robust risk adjustment and benchmarks that enable comparison across providers and over time, and that form the basis for sharing best practices and motivating continuous quality improvement. Moreover, since 2010, the STS has facilitated the public reporting of results of surgical quality and outcomes, including for procedures such as coronary artery bypass graft (CABG) surgery and aortic valve replacement (AVR). The work of the STS and others within the NCRN could contribute importantly to the potential for incorporating clinically rich outcome measures for priority conditions and procedures into PBP models.

Yale Center for Outcomes Research & Evaluation: Third, given the increasing interest in and acceptance of PROMs and their potential value in PBP models, recent work by Yale Center for Outcomes Research & Evaluation (CORE) team is also illustrative. Yale CORE's work to develop performance measures related to total hip and knee replacement provides a rich example of the steps required to develop a performance measure that employs data from a well-validated patient-reported outcome tool. There are many such tools today, often based on significant literature from clinical trials and health services research demonstrating their usefulness in evaluating important dimensions of patient health status and functioning. However, the use of these instruments for accountability purposes, such as in a PBP model, require a number of additional methodological steps that have generally not been accomplished and cannot be overlooked. These include:

1. Establishing the appropriate time intervals for administering the survey in order to standardize the measurement of change in patient status (e.g., number of days/weeks before and after a procedure);
2. Defining how much a measurement must change to be considered a clinically meaningful outcome (i.e., improvement or decline);
3. Identifying the appropriate risk adjustment model; and
4. Establishing the sample sizes required for reliable measurement at the clinician, group, or system level.

Summary of Needed Innovative Models

It is important to note that although these exemplar innovation models are condition-specific, the Work Group believes that outcomes accountability will foster significant delivery system transformation, necessitating more whole-person, patient-centered approaches to care. To be successful in managing and improving clinical and functional outcomes requires a different type of engagement with patients and communities and will challenge providers to transition away from traditional FFS delivery models, which are focused largely on what happens in clinical offices, hospitals, and other delivery system settings. With accountability for outcomes, providers must think more holistically about patients, including their life circumstances and the social determinants that will support or impede the achievement of care goals.

For example, in order to help patients keep chronic conditions (e.g., diabetes and hemoglobin A1C) under good control or achieve favorable functional health outcomes (e.g., reduced pain and improved physical and mental status, improved productivity and decreased absenteeism), providers must think beyond the practice setting. PBP models in place today, with accountability for outcomes, have demonstrated that to function effectively within a PBP environment, providers must transform their approaches to care using new staffing models, new approaches to integrating care and prevention within and across settings, new uses of health information technology, new ways to engage patients and community resources, and new collaborations with community stakeholders. The Work Group therefore sees accountability for the types of condition-specific and whole-person outcomes proposed for PBP models as an important step toward a delivery system that reaches beyond the confines of the clinical setting to significantly improve the health of the population.

The aforementioned models are useful illustrations of innovation and measure development processes that can help meet the goal of establishing outcomes-oriented PBP measure sets. The Work Group believes that, in order to make meaningful progress toward this goal in the next 12 to 24 months, it will be necessary to agree upon a set of priority topics for outcomes measure development, and to define a process by which to accelerate the development, testing, and adoption of these measures. To ensure the development of measures that matter to patients (Recommendation 1), this consensus process on measurement priorities, should include payers, providers, and measure developers working collaboratively with patients, families, and consumers. While a number of processes currently exist through which priority measure gaps are identified, none of these is specifically aimed at addressing the needs of PBP models, and importantly, none is designed with the explicit goal of seeking alignment among payers, providers, purchasers, and patients as a starting principle and priority. A model that might achieve these goals is presented later in this paper.

Recommendation 3: A governance process is needed to oversee and accelerate the development, testing, and use of new, high priority measures for population-based payment models.

Prevailing performance measures and measure sets have arisen from a vast and varied set of measure developers, each seeking to ensure that priority gaps are filled in the national portfolio of quality measures. Yet, as emphasized throughout this paper and elsewhere, stakeholders today agree that the field of performance measurement has both delivered too many measures and yet left significant gaps. Among the challenges is the need for continual improvement in the processes that can be used to gain consensus among public and private sectors on the highest priority gaps to be filled, and a streamlined

connection to another process that systematically develops, tests, and enables adoption of measures that meet these needs. The existing attenuated and uncoordinated processes for measure development will need to be dramatically accelerated to produce the types of measures needed for the long-term success of PBP models. A newly-designed process will need to involve patients, families, and communities in much deeper ways to develop measures of results that matter from their perspectives.

Setting Priorities for Measure Development

The establishment of clear and well-founded priorities for measure development is a necessary first step. The Work Group agrees with the Institute of Medicine Vital Signs report that the Secretary of Health and Human Services should lead the effort to establish measurement priorities. The Work Group also believes that public-private partnerships, such as the LAN and the AHIP/CMS Core Quality Measures Collaborative, are a useful platform for establishing public-private sector consensus and alignment on priorities for measure development.

In establishing priority measures for development, testing, and implementation of PBP measures over the next 12 to 24 months, the Work Group urges the Secretary and these multi-stakeholder partnerships to identify a set of high-prevalence and high-impact conditions for which systematic outcomes measurement is expected to meaningfully improve results for patients. An example could include potentially accelerating and expanding upon current outcome measure development efforts for high prevalence musculoskeletal conditions, cardiovascular disease, and common cancers. A roadmap for systematically developing outcome measures corresponding to the national burden of illness by a certain time, similar to ICHOM's goal of establishing measure sets that cover 50% of the global disease burden by 2017, would represent a significant step. For each condition, considering a comprehensive outcome measure framework that would address acute treatment complications, patient-reported functional outcomes, and disease control, and survival is recommended.

At the same time, the Work Group urges the Secretary and public-private partnerships to prioritize the development of cross-cutting measures that will not be addressed through a condition-specific approach, and that are critical to the success of PBP models. These include measures addressing access to care, integration and coordination of care within and across settings, and reduction in health disparities, as well as innovations in measurement of patient care experiences. Additional priorities to be considered for accelerated measure development in the immediate term are measures that evaluate how well care is matched with patient goals, and measures evaluating the quality of advanced illness care (e.g., palliative care). These cross-cutting areas of measurement would enhance the assessment of specific priority conditions noted earlier and also contribute meaningfully to improving end-of-life-care, which is recognized as a pressing national priority. Finally, advances in measurement of quality and outcomes for behavioral health care and pediatric care will be necessary to have these appropriately represented and rewarded in PBP models.

Accelerating Measure Development and Use

In addition to the establishment of priorities for measure development, the vision outlined in this paper calls for an infrastructure that will enable an accelerated and coordinated process for the development, testing, and adoption of these new measures. In light of its mandate under the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) to develop measures, and its authorized budget of \$15 million dollars per year from 2015-2019, CMS is the most likely source of funding for measurement innovation. The Work Group therefore recommends that the Department of Health and Human Services, in close collaboration with private sector stakeholders, oversee the coordination of measure

development and testing. If additional funding is deemed necessary, this public-private collaboration could work to identify and secure the necessary supplemental funding streams.

One manner in which the proposed approach to measure development could proceed would be to establish a national network of qualified measure developers with proven credentials and the ability to bid on priority measure development projects. Such a system would require measure developers to demonstrate they have:

1. The methodological expertise to develop, validate, and refine high priority outcome measures;
2. The ability to engage a broadly representative set of providers, patients, and other stakeholders to participate in the conceptualization and testing of new measures; and
3. The ability to undertake rapid-cycle measure development in an environment of continuous process improvement, such as CMS's Lean Kaizen approach.

As outlined later in this paper, the broad testing of a new measure in varied settings and populations is critical both to affording the necessary breadth of data for adequate psychometric testing and validation, and to gaining provider acceptance of a measure through its socialization and use. Indeed, APMs themselves may offer an important arena for testing new measures or measure sets. Therefore, the Work Group envisions that measure developers would be evaluated on the extent to which their measures are widely adopted once they have been deemed ready for use. The establishment and oversight of a network of qualified measure developers could also help ensure coordination and alignment among these measure development efforts and the resulting measure specifications. Further coordination would be achieved through the bidding process itself, which would use exclusive contracts to avoid duplications in effort.

Although the approach outlined here would go a long way toward fast-tracking measure development for high-priority topics, the Work Group believes that this arrangement should not hinder innovation taking place in other areas. Prospecting for measures that are being developed and used by delivery systems to accomplish ongoing measurement and improvement, as well as those being developed and tested in multi-stakeholder collaborations, will enhance our ability to identify important new measures to fill priority gaps in current portfolio of measures. For example, critical measure development work takes place via payer-provider partnerships and regional multi-stakeholder collaboratives. Examples include efforts to significantly advance Patient Reported Outcome Measures (PROMs) occurring through the Pacific Business Group on Health's partnership with providers reporting data to the California Joint Replacement Registry, as well as Minnesota Community Measurement, which is measuring statewide implementation of PROMs for effective treatment of depression. Similarly, Boston Children's Hospital is working to systematically incorporate PROMs into pediatric practice, using data routinely obtained from important adults in the child's life (e.g., parents, teachers, coaches) and focusing on conditions such as attention deficit and hyperactive disorder (ADHD) that have a measurable impact on children's functional status and development. Further, the Work Group expects that national organizations that have historically played a central role in measure development (including the National Committee for Quality Assurance (NCQA), the Joint Commission, and medical specialty societies) will continue to be important players in the development and testing of priority measures for PBP models. The Work Group also envisions that the National Quality Forum (NQF), which plays a unique role in the process of certifying measures as ready and appropriate for accountability purposes, such as payment and public reporting, will continue to do so. In addition, NQF has recently launched a Measure Incubator program, designed to assist in the goal of accelerating measure development, which may be leveraged in the processes outlined earlier.

Recommendation 4: In service of a future state that employs measures that are outcomes-oriented, the infrastructure nationally must be sufficient to systematically collect, use, and report clinically rich and patient-reported data.

The U.S. does not presently have the national infrastructure required to capture the types of clinically rich and patient-reported data needed for a comprehensive portfolio of outcome measures envisioned for PBP models. Setting aside the challenging task of how to increase the interoperability of health information technology, electronic health records in use today often do not collect data in structured or standardized ways that can afford truly meaningful use for broad and comprehensive clinical or health outcomes measurement. And while the availability of clinical data registries is growing, the current state cannot meaningfully advance the ability to rely on these systems for use in payment under PBP models. These aspects of the clinical and health data infrastructure significantly limit the development and implementation of more comprehensive sets of standardized clinical and health outcome measures as well as the potential for accessing the data elements that will be required for appropriate risk adjustment of these measures. The Work Group believes that mitigating these issues must be part of the process of funding and accelerating measurement innovation.

The development of our national infrastructure must incorporate important providers such as safety net organizations and rural providers. In addition, the ability to routinely collect and use data on race, ethnicity, and primary language is needed in order to measure, monitor, and improve health equity (i.e., reduce health disparities).

Issues associated with data capture and use are compounded for PROMs of functional status, pain, emotional well-being, sleep, and other topics related to health-related quality of life. As noted previously, clinical trials and health services research have validated and relied on these tools for decades. And through the Patient Reported Outcomes Measurement Information System (PROMIS) initiative, the National Institutes of Health possesses a robust and scientifically sound collection of PROMs. However, care-delivery processes are rarely designed to systematically elicit this type of information from patients, and electronic health records are almost never configured to collect the resultant patient-reported data that are needed to calculate these measures. In addition, the cultural barriers (e.g., clinical skepticism about the value of PROMs), professional/evidence barriers (e.g., the lack of understanding of the measures and the lack of an evidence base for improving results), and implementation barriers (e.g., how to use these tools in front-line provider offices) must be addressed. Part of the value of the collaborative models of developing PROMs-based performance measures (such as those employed by Yale's CORE, ICHOM, and multi-stakeholder collaboratives described previously) is that they engage a broad and diverse set of provider organizations in measure conceptualization, implementation, testing, and refinement as integral to the process of measure development. Through this process, they accomplish both the important task of broad data collection needed for psychometric testing and analytics, and the task of broadly socializing the measure among providers and gaining feedback to inform refinements. In this way, at the conclusion of the process, the measure has both the empirical basis and professional acceptance to proceed to broad adoption and use.

Because patients and consumers care deeply about the outcomes captured by PROMs, the Work Group maintains that these measures should be well represented in measure sets used to evaluate provider organizations in PBP models. Accordingly, the Work Group believes that the practical and technological

barriers to systematically capturing and interpreting patient-reported outcome data are in need of urgent remediation and should be an integral part of the funding and innovation model outlined earlier.

The Comprehensive Primary Care Initiative, sponsored by the CMS Innovation Center, requires practices to directly report quality measures from their EHRs. And the new Comprehensive Primary Care Plus initiative will also use patient-reported outcome measures and engage EHR vendors with the goal of incorporating the required data elements to report the PROM directly from the EHR. These programs may help stimulate the development and adoption of the types of data and reporting infrastructure outlined earlier in this paper.

Recommendation 5: Providers in population-based payment models should have meaningful incentives to deliver high-quality care, achieve favorable health outcomes, improve patient care experiences, and manage the total cost of care.

Measurement systems used to measure performance should complement patient and provider goals for care delivery. Financial rewards for high performance can be structured in many different ways, but they should ensure that providers are incentivized to meet the Triple Aim for their patients and populations. For example, achieving a certain level of performance may be a prerequisite for participating in shared savings. It is also possible to establish an aggressive financial benchmark and then award incremental bonuses above that benchmark for different levels of performance measure attainment. The Work Group does not believe that there is sufficient evidence to recommend one approach to rewarding high performance over another. Nevertheless, the Work Group maintains that these rewards must be structured such that they enable, and do not impede, providers' capacity to provide better care and better health at lower costs.

Recommendation 6: Measurement systems should define performance targets in a way that motivates ongoing improvement across the performance continuum, promotes best practice sharing, avoids a forced curve that mandates winners and losers, and enables long-term planning and commitment to improvement.

Measure targets (i.e., the performance rates that accountable provider organizations need to achieve to receive different levels of rewards and penalties) can be set in a number of different fashions, and the manner in which performance targets are set carries significant implications for the activities they motivate.

The Work Group does not believe there is sufficient evidence to recommend a detailed technical approach; however, the Work Group maintains that measure targets should appropriately incentivize all provider organizations to improve, such that low performers receive strong incentives to improve rapidly and high performers receive strong incentives to maintain and/or raise high standards of quality. The following two sub-recommendations offer a blueprint for how measure targets can accomplish these goals.

***Recommendation 6a:** Whenever possible, measure targets should be set in absolute (not relative) terms, established prior to the measurement period and fixed for a minimum of one year, although ideally for the full contract term.*

Setting measure targets in “absolute” rather than “relative” terms is advantageous in performance-incentive models for a number of reasons. Absolute-measure targets specify a predetermined measure score (or range of scores) that an accountable provider organization needs to achieve in order to receive rewards or penalties in a PBP model. The absolute performance targets are based on criteria that demand that the target score represents high performance in real terms, not just relative to others’ performance.

By contrast, relative performance targets are based on the performance of other providers, such as the 50th or 75th percentile of a regional or national distribution. The Work Group believes that, where permitted under federal statute, absolute measure targets are preferable to relative measure targets for several reasons. First, because relative measure targets place provider organizations on a forced curve, they can create an environment that discourages collaboration and the sharing of best practices. Second, the use of absolute measure targets facilitates planning for quality improvement initiatives, because a target defined in absolute terms does not change from year to year. In other words, absolute performance scores by definition ought to represent high performance in real terms, and thus should not need to be re-set annually based on a changing distribution of scores.

Additionally, the Work Group believes it is critical to establish measure targets as far ahead of the performance period as possible, because this facilitates planning and establishes certainty about provider expectations. Ideally, absolute targets should remain constant throughout the entire contract cycle; at minimum, targets should be fixed for an entire year, and only in extreme circumstances should the target change during the course of the performance period.

***Recommendation 6b:** Measure targets should include a range of scores on each measure to enable the incentive system to reward both performance and improvement.*

Once measure rates are evaluated against performance targets, the manner in which the resultant performance assessments impact payments can be structured in a variety of ways. For example, a single performance score can be used to establish a performance target or “gate” that must be cleared before an accountable provider organization can receive rewards. Alternatively, it is possible to establish a range of performance targets, and a corresponding series of incremental payment adjustments. The Work Group believes that, where permitted under federal statute, the latter approach is preferable to the former because a single performance target does not accord with good behavioral economic principles. With everything riding on a single number, those whose performance misses the mark by even a fraction of a point get nothing, and those who surpass the number have no incentive to work toward further performance improvement.

Another consideration is the connection between performance scores and cost savings, which is critical in ensuring that cost reductions are not obtained at the expense of patient quality. PBP models may reward quality and cost savings separately, or they may link them. When treated separately, there is a

discrete quality bonus, irrespective of the provider's performance relative to their financial benchmark. Some view this approach as undesirable because it can undercut the goal of focusing attention on managing spending, and because quality bonuses can be achieved regardless of cost performance. Models that link quality and savings can do it in various ways. In most models where the two are linked, the quality score determines the magnitude of shared savings or deficit. In other models, such as California's Integrated Healthcare Association's (IHA) performance-based payment program, providers are not eligible for cost savings unless they meet both cost and quality targets. Generally, the models that link quality and savings are structured such that a higher quality score is always advantageous, yielding a larger share of savings if a provider meets their financial benchmark, and yielding a smaller share of deficit if a provider overspends their target.

In some models, the quality score has an additional function, which is to determine the amount of a discrete quality bonus. The Work Group believes that the public and private markets are evolving toward a model with a quality score that drives risk share without a separate quality payment. However, one might propose that additional payments for quality could be made if credible evidence supports that cost savings would occur in a reasonable timeframe. The Medicare Accountable Care Organization (ACO) programs are examples of PBP models that use quality as one of many factors to determine the amount of shared savings. And the Blue Cross Blue Shield of Massachusetts' Alternative Quality Contract (AQC) is an example of a PBP model that uses the quality score for two purposes: to calibrate the provider's amount of shared savings or deficit and to determine the discrete quality bonus amount. These developments highlight the importance of monitoring emerging evidence on the results achieved under these varying incentive designs in order to begin to identify best practices.

Recommendation 7: Adherence to good measurement science and implementation (e.g., sample size requirements, demonstrated reliability and validity, national acceptability, clinical importance, and the opportunity for a provider to improve before being held accountable under the new model) is critical to achieving the desired results from performance measurements in population-based payment models.

The Work Group believes that the measures used to hold provider organizations accountable for the care they deliver must be based on rigorous measurement science and reliably differentiate provider performance. The Work Group also believes that empirical evidence regarding the performance of measures themselves (and their intended and unintended consequences) increases most rapidly when they are put into widespread use. For example, a newly developed measure may have strong evidence of sound psychometric properties, but the measure development process generally involves measurement of a narrow sample of providers. Only once the measure is used more broadly can a more thorough assessment of the measure be conducted. It is analogous to what is known about a medicine after a clinical trial versus what is known after the medicine has been in widespread use.

Accordingly, and in light of the urgency of accelerating progress toward a more outcomes-based measure portfolio for use in PBP models, the Work Group recommends the consolidation of what is normally a protracted and phased approach to measure development. Specifically, measure development might typically proceed along the following three phases:

- Phase 1: The initial development of the measure, typically based on a limited set of providers.

- Phase 2: The broader implementation of the measure for a much larger set of providers, which affords the data needed to gain deeper insights about the measures' properties. This will generate feedback from providers, providing information on how to refine the measure, and thus giving providers the opportunity to improve on the measure before it is used for payment purposes.
- Phase 3: The stage at which the measure is ready for use in a payment model or other accountability purposes.

As previously described, the Work Group envisions a process whereby these steps are accelerated probably by either drawing on measures that have already completed Phase 1 and accelerating their purposeful application in Phase 2 testing, or by consolidating the first two phases into a single process. It is also possible that, in some cases, it may be valuable to incorporate a new measure into PBP programs on a "reporting-only" basis as a means to gather the broad types of data and experience with the measure as is ascribed to Phase 2. In each case, the result will be measures for which, over a period of 12 to 24 months, the PBP program or testing entity is able to establish both the strong empirical evidence and professional acceptance required to move to Phase 3 adoption.

Given the intention that PBP models will comprise outcomes-oriented measures, proper risk adjustment will be essential. Development and testing of adequate risk adjustment models will be critical components of Phases 1 and 2, and must be assured before measures move to Phase 3.

Once in place, the measure would then need to be analyzed for additional opportunities for refinement (including measure retirement, if appropriate) and undergo systematic, unbiased, periodic assessment of unintended consequences on various stakeholders (including on patient outcomes) if known. The benefits of this approach are fourfold:

1. Additional data could be captured at each stage of the process, which measure developers can use to account for unanticipated scenarios in the measure calculations, and to further refine risk adjustment models.
2. Individual providers would have more opportunities to provide feedback on the measures and recommendations for improvements.
3. Accountable provider organizations would have enough time to become accustomed to the measure's results and reporting requirements before they are held accountable for their performance.
4. The process of ensuring that a measure's financial implications are matched by its demonstrated reliability and validity would be simplified.

Next Steps

To accelerate progress toward the vision outlined in this White Paper, the Work Group views the following as priority steps that could be taken in the next 12–24 months:

- With patient input, payers and providers should proceed with PBP models, using existing core measure sets for population-based accountability. (Recommendation 2)
- HHS should work in collaboration with public-private partnerships to consider establishing a national network of qualified measure developers that can develop measures appropriate for PBP models. (Recommendation 3)
- A national network of qualified measure developers, if established, should not be viewed as the only legitimate source of measures to fill priority gaps in our national portfolio of measures. “Prospecting” for measures being used to drive delivery system improvement in real-world settings can help to fast track our ability to identify valuable innovations in measurement and fill priority gaps. (Recommendation 3)
- To accelerate the development and uptake of measures in priority areas, measure developers should work with provider networks and other interested stakeholders to enable large scale testing and validation of measures as part of the development process, thereby enabling consolidation of the measure development, validation, acceptance, and implementation process. (Recommendation 7)
- To ensure the development and use of measures that are meaningful to patients, the measure development process should include patients and families at every stage, from identification of priority measure gaps, to measure development, testing, and validation, to ongoing monitoring for the impact of measures on care. (Recommendation 1)
- It is critical to evaluate how best HHS should work in collaboration with public-private partnerships to evaluate how best to develop the infrastructure required for the capture and use of the clinically rich and patient-reported data that will form the basis of outcomes-oriented measure sets for PBP models. (Recommendation 4)
- Wherever possible, public and private payers should begin to incorporate the use of absolute (vs. relative) performance targets in PBP models, and use a range of performance targets for each measures (vs. a single target) to motivate ongoing improvement across the performance continuum. (Recommendation 6a and 6b)
- Providers and payers, in partnership with patients and communities, should use existing and emerging performance measures in PBP models to develop engagement approaches with patients and communities that go beyond traditional clinical settings to advance improved health outcomes. (Recommendation 2)

Conclusion

The Work Group is committed to the concept of transitioning from FFS to PBP models, as a critical component of health care transformation to achieve better quality and outcomes and lower costs. The recommendations in this White Paper lay out an approach to performance measurement that can be used nationally by commercial and public PBP programs models. The Work Group believes that over time, alignment between public and private programs is highly desirable and should be possible.

Appendix A: Roster

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[CAMH](#), sponsored by CMS, is an FFRDC operated by The MITRE Corporation. MITRE is chartered to work in the public interest.

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Appendix B: Selected Examples of Core Measures/Measure Sets

Core Measure Set	Measures	Further Information
CMS/AHIP Core Measures	<p>The Core Quality Measures Collaborative, promotes alignment in measurement use and collection across public and private sectors.</p> <p>The core measures are divided into the following seven sets:</p> <ul style="list-style-type: none"> • Accountable Care Organizations (ACOs), Patient Centered Medical Homes (PCMH), and Primary Care • Cardiology • Gastroenterology • HIV and Hepatitis C • Medical Oncology • Obstetrics and Gynecology • Orthopedics 	https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Core-Measures.html
2020 Leading Health Indicators	<p>The Leading Health Indicators (LHIs) are composed of 26 indicators organized under 12 topics. The indicators are used to assess the health of the nation, as well as to motivate action to improve the health of the U.S. population.</p>	https://www.healthypeople.gov/2020/leading-health-indicators/2020-LHI-Topics
United Health Foundation's America's Health Ranking	<p>America's Health Ranking has recognized 35 unique measures used to track the health of the U.S. population across all 50 states. Since 1990, they have used such measures to provide an in-depth analysis of the nation's health.</p>	http://www.americashealthrankings.org/
Vital Signs: Core Metrics for Health and Health Care Progress	<p>The Committee on Core Metrics for Better Health at Lower Cost has identified 15 core measures that constitute the most vital signs for the nation's health and health care. Such core measures serve as tools to enhance the effectiveness of measurement, and to diminish the burden of unnecessary measurement and reporting.</p>	http://www.nap.edu/catalog/19402/vital-signs-core-metrics-for-health-and-health-care-progress

Core Measure Set	Measures	Further Information
The Surgeon General National Prevention Strategy	<p>The National Prevention Strategy, released in 2011, has identified seven priority topics as a guide to help improve the health and wellness of the U.S. population.</p> <p>The priorities are divided among the following seven topics:</p> <ul style="list-style-type: none"> • Tobacco Free Living • Preventing Drug Abuse and Excessive Alcohol Use • Healthy Eating • Active Living • Injury and Violence Free Living • Reproductive and Sexual Health • Mental and Emotional Well-Being 	http://www.surgeongeneral.gov/priorities/prevention/strategy/
Robert Wood Johnson Foundation (RWJF) County Health Rankings and Roadmaps	<p>The County Health Rankings have identified 4 types of measures, of which are further divided into 14 topics. The measures (Health Factors) are used to track the health among the U.S. population across various counties in all 50 states.</p> <p>The measures are divided among the following four topics:</p> <ul style="list-style-type: none"> • Healthy Behaviors • Clinical Care • Social and Economic Factors • Physical Environment 	http://www.countyhealthrankings.org/our-approach/health-factors
CDC Community Health Status Indicators	<p>The Community Health Status Indicators (CHSI) report contains over 200 measures for each of the 3,141 counties within the U.S. The health indicators are used to assess the health of the nation, in addition to encouraging dialogue about actions that can be taken to improve the population's health.</p>	http://wwwn.cdc.gov/CommunityHealth/home

Appendix C: LAN Related Content

The LAN has written a suite of papers to help align payment reform efforts. The first, [the Alternative Payment Model Framework](#), describes four categories of alternative payment models. The papers referred to in this appendix include recommendations on the design of two payment reforms, population-based payments and clinical episode payments, from the two most comprehensive categories defined in that framework.

These recommendations are the result of input from a wide variety of persons and organizations with either direct experience with implementing one or the other payment reform or deep experience in the health care field.

The Guiding Committee (GC) of the LAN convened two Work Groups, Population-Based Payment Work Group and the Clinical Episode Payment (CEP) Work Group, to develop recommendations for the implementation of population-based payment and clinical episode payment models. Their recommendations focus on specific design elements, many of which overlap and upon which there was much common agreement even as the Work Groups deliberated separately. Each of the four PBP White Papers described below focus on a separate design element (financial benchmarking, patient attribution, performance measurement, and data sharing) in a PBP context. In a PBP arrangement an accountable entity takes responsibility for the care for a defined population over a specified period of time (typically a year) for the full continuum of care.

These design elements should be considered as a whole for effective PBP implementation as they interact considerably. For example, to determine the financial benchmark, it is critical to know precisely which patients are being attributed to the PBP model. Further, most PBP initiatives will require performance on certain measures to be one factor in considering whether the accountable entity has met the benchmark. Data sharing is critical for the providers to effectively target their efforts, for payers and purchasers to monitor performance, and for patients to be empowered to be active in their care.

The CEP Work Group also divided their recommendations into design elements, but included ten design elements along with several operational considerations. The recommendations were included in chapters in the comprehensive White Paper applying them to three clinical areas where clinical episode payment models would be most effective: elective joint replacement, maternity care, and coronary artery disease (CAD). While the clinical focus is more targeted here, the underlying concepts for setting the episode price (including the level and type of risk), defining the population and services included in the episode, patient engagement and quality metrics, and the data infrastructure are similar to those of the four PBP White Papers.

The following provides links and a brief overview of each of the papers written by the LAN Work Groups. By reading the full suite of products, readers of this paper will be better able to make decisions about the most effective payment model(s) to implement and the key issues to consider when designing those models. Visit our website (<https://www.hcp-lan.org>) for an up-to-date list of LAN [work products](#) and for a [glossary](#) of terms. (Last updated 6/27/2016)

Population-Based Payment (PBP) Models:

Accelerating and Aligning Population-Based Payment (PBP): [Patient Attribution](#)

The Patient Attribution White Paper describes the method by which patient populations are assigned to providers who are accountable for total cost of care and quality outcomes for their designated populations in a PBP model. The paper recommends that active, intentional identification, or self-reporting by patients should be considered first. The paper also outlines nine additional recommendations that payers and providers can use when making decisions on attribution in their PBP models.

Accelerating and Aligning Population-Based Payment (PBP): [Financial Benchmarking](#)

The Financial Benchmarking White Paper describes approaches for setting an initial benchmark and updates over time and also addresses risk adjustment considerations. The White Paper discusses the need to balance voluntary participation with the movement towards convergence in a market with providers at different starting points.

Accelerating and Aligning Population-Based Payment (PBP): [Data Sharing](#)

The Data Sharing White Paper offers several guiding principles and recommendations that highlight the future development of data sharing arrangements in PBP models. The paper also outlines Use Cases for data sharing which describe particular types of data sharing arrangements, in both their current and aspirational states. The goal is to create an environment where data follows the patient and is available to stakeholders (patients, providers, purchasers, and payers) in a timely manner.

Clinical Episode Payment (CEP) Models:

Accelerating and Aligning [Clinical Episode Payment \(CEP\) Models](#)

This paper provides high-level recommendations for designing clinical episode payment models. A clinical episode payment is a bundled payment for a set of services that occur over time and across settings. The paper outlines design elements and operational considerations for three selected clinical areas: Elective Joint Replacement, Maternity Care, and Coronary Artery Disease. Recommendations are organized according to design elements and operational considerations. Design elements address questions stakeholders must consider when designing an episode payment model, including the definition, the duration of the episode, what services are to be included, and others. Operational considerations relate to implementing an episode payment model, including the roles and perspectives of stakeholders, data infrastructure issues, and the regulatory environment in which APMs must operate.

Several key principles drove the development of the recommendations across all three episodes: 1) Incentivizing **person-centered care**; 2) Improving patient outcomes through **effective care coordination**; 3) **Rewarding high value care** by incentivizing providers and patients, together with their family caregivers, to discuss the appropriateness of procedures; and 4) **Reducing unnecessary costs** to the patient and to the health care system.

The recommendations are designed to speak to a multi-stakeholder audience with the goal of supporting broad clinical episode payment adoption.

[Elective Joint Replacement](#)

The elective joint replacement recommendations emphasize using functional status assessments (both pre- and post-procedure) and shared decision-making tools to determine whether a joint replacement is the appropriate treatment for a given patient.

[Maternity Care](#)

The maternity care recommendations emphasize the need for patient engagement, education, and parenting support services (in addition to clinical maternity care), to achieve a number of critical goals. These include increasing the percentage of full-term births and the percentage of vaginal births, while decreasing the percentage of pre-term and early elective births, complications, and mortality.

[Coronary Artery Disease](#)

The coronary artery disease recommendations are based on a CAD condition-level episode, which includes a “nested” bundle for procedures like percutaneous coronary intervention (PCI) and coronary artery bypass graft (CABG). The recommendations emphasize overall condition management designed to reduce the need for procedures, and strong coordination and communication between the surgeons who perform cardiac procedures and the providers who deliver follow-up and long-term cardiac care.

Appendix D: Principles for Patient- and Family-Centered Payment

The following principles, produced by the LAN's Consumer and Patient Affinity Group, are intended to help guide the development of new payment strategies. They provide guidance and aspirational direction to ensure that we address the needs and priorities of patients and families as we transition to value-based payment. The principles rest on the conviction that consumers, patients, and families are essential partners in every aspect of transforming health care and improving health.

Consumers, patients, families, and their advocates should be collaboratively engaged in all aspects of design, implementation, and evaluation of payment and care models, and they should be engaged as partners in their own care.

The collaboration in design of payment and care models should include oversight, governance, and interface with the communities where care is delivered. At the point of care, patients and families should be engaged in ways that match their needs, capacities, and preferences. Collaborative care should be aligned with patient goals, values, and preferences (including language), and should reflect shared care planning and decision making throughout the care continuum.

Positive impact on patient care and health should be paramount.

The central consideration in all payment design should be improving patient health outcomes, experience of care, and health equity, while also ensuring the most effective use of health care resources.

Measures of performance and impact should be meaningful, actionable, and transparent to consumers, patients, and family caregivers.

New payment models should be assessed using measures that are meaningful to patients and families. They should prioritize the use of measures derived from patient-generated data that address both care experience and outcomes. Measures should also address the full spectrum of care, care continuity, and overall performance of specific models. Measures should be granular enough to enable patients to make informed decisions about providers and treatments.

Primary care services are foundational and must be effectively coordinated with all other aspects of care.

Payment models should foster this coordination, particularly between primary and specialty care, in order to promote: optimal coordination, communication and continuity of care; trusted relationships between clinicians and patients/families; concordance with patient goals, values, and preferences; integration of non-clinical factors and community supports; and coordination of services delivered through non-traditional settings and modalities that meet patient needs. Effective delivery and coordination of primary care services should promote better care experience, optimal patient engagement, better health outcomes, and increased health equity.

Health equity and care for high-need populations must be improved.

New payment models should foster health equity, including access to innovative approaches to care and preventing any discrimination in care. They should collect data that allows for assessment of differential impacts and the identification and redress of disparities in health, health outcomes, care experience, access, and affordability.

Patient and family engagement and activation should be supported by technology.

New payment models should promote use of information technology that enables patients and their designated caregivers to easily access their health information in a meaningful format that enables them to use the information to better manage and coordinate their care. The technology should also enable patients to contribute information and communicate with their providers, and it should foster patient-clinician partnership in ongoing monitoring and management of health and care.

Financial incentives used in all models should be transparent and promote better quality as well as lower costs.

Financial incentives for providers and patients should be fully disclosed so that patients and consumers understand how new payment approaches differ from traditional fee-for-service models, and how certain incentives may impact the care providers recommend or provide. Financial incentives should be developed in partnership with patients and consumers in order to reflect how patients define value, and to reduce financial barriers to needed care and ensure that patients are not steered to lower cost care without regard for quality.

Appendix E: Resources

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