



Maryland Population Health Improvement Plan: Planning for Population Health Improvement

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Glossary of Terms

ACO: Accountable Care Organizations
CDFI Fund: Community Development Financial Institutions Fund
CHNA: Community Health Needs Assessment
CMMI: Center for Medicare and Medicaid Innovation
CMS: Centers for Medicare and Medicaid Services
CPC+: Comprehensive Primary Care Plus
CRA: Community Reinvestment Act
CRISP: Chesapeake Regional Information System for our Patients
DHMH: Department of Health and Mental Hygiene
ED: Emergency Department
ER: Emergency Room
GBR: Global Budget Revenue
GHHI: Green and Healthy Homes Initiative
HIE: Health Information Exchange
HSCRC: Health Services Cost Review Commission
ICN: Integrated Care Network
LHIC: Local Health Improvement Coalitions
LMI: Low and Moderate Income
MMPP: Maryland Multi-Payer Patient-Centered Medical Home Program
OPHI: Office of Population Health Improvement
PCMH: Patient-Centered Medical Home
ROI: Return on Investment
SBHC: School-based Health Centers
SHIP: State Health Improvement Process
SIB: Social Impact Bond
SIM: State Innovation Model

Executive Summary

Health is fundamentally important to the wellbeing of Maryland’s citizens, its financial security and its safety. Maryland ranks 18th in the Nation in terms of overall population health and is currently positioned to do much better. The Population Health Improvement Plan (“The Plan”) presented here proposes concepts and a framework for improving population health in Maryland. The Plan describes the first phase of an extensive, collaborative process that will need to be undertaken in Maryland to develop a multi-sectoral approach to improve the health outcomes and health equity of Marylanders. Ultimately, a long-term plan will be realized through ambitious targets for health improvement and sustainable investment in population health.

In order to support the goals of the All-Payer Model and in preparation for population health transformation in Maryland, the Office of Population Health Improvement (OPHI) at the Department of Health and Mental Hygiene (DHMH) Public Health Services developed the *Population Health Improvement Plan: Planning for Population Health Improvement*. As the Maryland health care system increasingly migrates toward adopting public health approaches in order to meet the performance goals of the All-Payer Model, it requires that population health improvement beyond the clinical space to address all factors that determine health; the social determinants of health and health equity.

The Plan conceptually presents a prevention framework for strategies founded in the concepts promulgated by the DHMH State Health Improvement Process, University of Wisconsin’s County Health Rankings and the Centers for Disease Control and Prevention’s Associate Director of Policy, *3 Buckets of Prevention*¹. The Plan encourages its audience to elevate social determinants of health, health equity, and sustainability of priority actions in order to encourage the creation of a portfolio of feasible and effective priorities that drive change. Furthermore, the Plan prompts an ongoing discussion to consider return on investment and net savings as concepts and, potentially, as tools that can be mobilized when planning for population health improvement. Finally, the plan outlines future and continuing work including the following: population health priority development, continued stakeholder engagement and alignment, exploration of sustainable funding mechanisms for population health improvement, continued alignment with the All-Payer Model, the Maryland Comprehensive Primary Care Model, Maryland Medicaid and Medicaid Dual Eligibles care delivery strategy, and integration with the State Health Improvement Process (SHIP).

¹ Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

Introduction to Planning for Population Health Improvement

Maryland's foundational design work on a population health improvement framework and process provides an initial roadmap for a variety of partners within Maryland to identify and guide future planning for population health improvement activities and priorities. The Plan's intent is to begin to explore Maryland's population health improvement vision of a public health system that functions as a fully integrated system of health (healthcare and public health) for the individual regardless of the resident's location or complexity. Through a strategic thought framework, the Plan provides initial discussion of a framework and process for identifying population health priorities and emphasizes the need for future consideration of how population health improvement priorities can be feasibly invested in and sustained in order to address population health improvement priorities in alignment and in support of Maryland's pre-existing and future proposed All-Payer Model goals.

The Plan is intended to be used by the Maryland State Department of Health and Mental Hygiene (DHMH) and the below listed stakeholders to catalyze and guide future population health improvement planning discussions and actions. The stakeholders include but are not limited to State Agency partners (Housing, Transportation, Planning, Healthcare Financing, Education, etc.), Federal partners (Centers for Medicaid and Medicare Services, Health Resource & Service Administration, etc.), Local Health Departments, community-based organizations, non-medical health partners, hospitals, payers, providers, consumers, Local Health Improvement Coalitions (LHICs), youth councils, county leadership, legislators, and other groups as appropriate.

Rather than laying out a population health improvement agenda, the Plan looks to provide a launch point for in-depth and collaborative conversation and planning for population health improvement in the state of Maryland. **The Plan intentionally suggests, through a series of thought frameworks, that planning for population health improvement requires focusing beyond the healthcare clinical space and into the innovative non-medical healthcare space to comprehensively address all factors that determine health. Further, the Plan looks to elevate an existing conversation and recognition that to improve population level health outcomes requires the prioritization of efforts that address, invest in, and sustain health equity.** Health equity is defined as everyone's opportunity to attain their highest level of health due to the absence of systemic disparities in health, including the social determinants of health².

² Braveman, P. & Gruskin, S. Defining equity in health: Theory and methods. *J Epidemiology Community Health* 2003;57:254-258 doi:10.1136/jech.57.4.254; <https://healthequity.sfsu.edu/content/defining-health-equity>; <https://www.apha.org/topics-and-issues/health-equity>

“...equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage—that is, wealth, power, or prestige. Inequities in health systematically put groups of people who are already socially disadvantaged (for example, by virtue of being poor, female, and/or members of a disenfranchised racial, ethnic, or religious group) at further disadvantage with respect to their health; health is essential to wellbeing and to overcoming other effects of social disadvantage. Equity is an ethical principle; it also is consonant with and closely related to human rights principles. “

Long term, planning for population health improvement requires an ongoing discussion that considers the concepts of return on investment and net savings as potential tools that can be mobilized when planning for population health improvement and the requisite investment. Finally, the Plan outlines future and continuing work including the following: population health priority development, continued stakeholder engagement, exploration of sustainable funding mechanisms for population health improvement, continued alignment with the All-Payer Model, and integration with the SHIP.

Maryland Population Health System Transformation

The State of Maryland is more committed than ever to achieving better care, better health, and moderated cost growth through our groundbreaking and innovative Maryland model. Maryland, under agreement with the Centers for Medicare & Medicaid Services (CMS), launched the All-Payer Model in 2014 to transform the health care delivery system and accomplish these goals. The All-Payer Model is changing the way Maryland hospitals provide care, shifting from a financing system based on volume of services to a system of hospital-specific global revenues and value-based incentives. While still in the early stages of transformation, Maryland has already achieved success in improving care and limiting hospital cost growth.

The Maryland All-Payer Model Background

In 2014, the State of Maryland signed an agreement with CMS to implement the Maryland All-Payer Model to limit total hospital health care cost growth per capita while improving quality of care and health outcomes. With the implementation of hospital global budgets, financial incentives changed for Maryland hospitals; the business model shifted from generating volume in the hospital setting to encouraging population health management strategies that can reduce avoidable utilization and improve quality of care in the hospital³. Maryland hospitals have responded to these incentives by focusing on high utilizers and well-defined areas for quality of care improvements. Maryland hospitals exceeded nearly all hospital performance targets in the first two full years of the model⁴.

³ Definition of Global Budgets:

“Global Budget Revenue (“GBR”) methodology is central to achieving the three part aim set forth in the All-Payer Model of promoting better care, better health, and lower cost for all Maryland patients. In contrast to the previous Medicare waiver that focused on controlling increases in Medicare inpatient payments per case, the new All-Payer Model focuses on controlling increases in total hospital revenue per capita. GBR methodology is an extension of TPR methodology, which encourages hospitals to focus on population-based health management by prospectively establishing a fixed annual revenue cap for each GBR hospital.

The Total Patient Revenue System (“TPR”) is a revenue constraint system available to sole community provider hospitals and hospitals operating in regions of the State characterized by an absence of densely overlapping service areas. The TPR system provides hospitals with a financial incentive to manage their resources efficiently and effectively in order to slow the rate of increase in the cost of health care. The TPR also is consistent with the Hospital’s mission to provide the highest value of care possible to the community it serves.

Under GBR and TPR contracts, each hospital’s total annual revenue is known at the beginning of each fiscal year. Annual revenue is determined from an historical base period that is adjusted to account for inflation updates, infrastructure requirements, population driven volume increases, performance in quality-based or efficiency-based programs, changes in payer mix and changes in levels of UCC. Annual revenue may also be modified for changes in services levels, market share shifts, or shifts of services to unregulated settings.”

<http://www.hscrc.maryland.gov/gbr-tpr.cfm>; http://www.urban.org/sites/default/files/05_global_budgets_for_hospitals.pdf

⁴ Centers for Medicaid and Medicare Services (2014). Retrieved from <https://innovation.cms.gov/initiatives/Maryland-All-Payer-Model/>

The initial five years of the All-Payer Model is referred to as Phase I, with a transition to a broader All-Payer Model (second term) expected in the following years. The second term of the All-Payer Model will expand the scope from hospitals to encompass the continuum of health care settings in performance measurement. Under this broader perspective, successful performance will depend on the clinical and financial alignment across the healthcare and public health system. Controlling the total cost of care and improving health performance outside of the hospital will depend on robust public-private collaboration and the leveraging of existing resources across the public health, social services and particularly the primary care arenas. These efforts will require providers and payers to address social determinants of health and health equity promote community-based care and utilize the highest value setting. Finally, success will require intense focus on particular community health status targets and the adoption of a long-term horizon to improve overall population health status.³

During Phase I, Maryland hospitals have begun to reduce avoidable hospital utilization, improve quality of care in the hospital and build working partnerships to “smooth” care transitions across service settings. Going forward, Maryland will require broader collaboration of social services; effective community health-oriented approaches; focus on the non-medical determinants of health; and, intimate collaboration between the healthcare and public health systems in order to meet population health improvement targets. Under the current All-Payer Model (Phase I), the Health Services and Cost Review Commission (HSCRC) actively works to encourage hospitals to develop care networks that extend beyond the hospital walls and the boundaries of the HSCRC’s regulatory authority. Under global budgets, hospitals are no longer financially incented to increase volume, but the same is not true for physicians and post-acute care providers. In response, Maryland has initiated an amendment to the current Model to incentivize alignment of providers who operate outside of the hospital arena. Maryland has requested an allowance to share resources with and provide incentives to non-hospital providers (i.e., community-based physicians; post-acute providers) when care improves and when there are accompanying savings. Maryland is also discussing with CMMI the possibility of establishing a CPC+ style advanced primary care model (e.g., Maryland Comprehensive Primary Care Model) with investment in primary care and care coordination for the Fee for Service Medicare-eligible population in order to catalyze and support primary care practice transformation efforts in support of the goals of the All-Payer Model.

Planning for Population Health Improvement within the Maryland Context

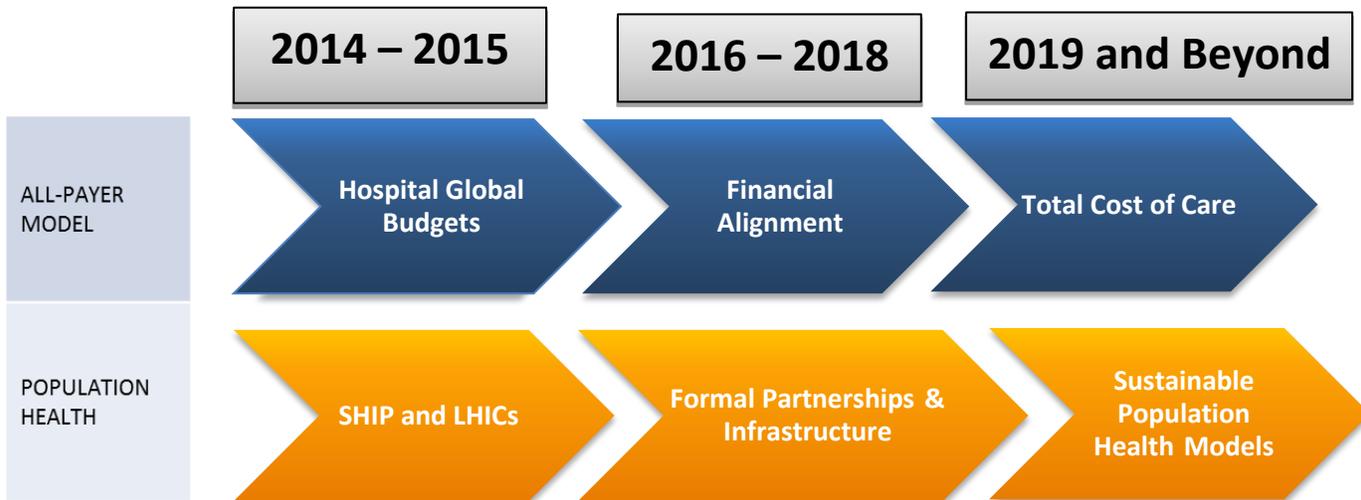
To assure sustainability of the All-Payer Model, as well as achievement of its goals, the Maryland healthcare delivery system needs to demonstrate that it will establish partnerships and infrastructure that further transform the delivery of healthcare, improve health status, and reduce the total costs of care (TCOC).⁵ The State remains committed to seeking greater care coordination, improved quality of care and reduced costs for care for Marylanders through alignment of population health improvement planning with the goals of the All-Payer Model (Phase I and Phase II).

While the All-Payer Model has altered the delivery system through a change in financial mechanisms, complementary work has been taking place on the population health side to drive capacity to improve

⁵ Total Cost Of Care “...is a full-population, person-centered measurement tool that accounts for 100% of the care provided to a patient.” <https://www.healthpartners.com/hp/about/tcoc/index.html>

health status. Indeed, Maryland endeavors to further merge these two tracks to facilitate better partnerships and sustainable models of health. Near-term approaches include the Maryland Comprehensive Primary Care Model to drive prevention and improved chronic disease management. The longer term approach, however, is founded in the subject of this Plan. To this end, the alignment of population health improvement activity with the All-Payer Model is depicted below:

Figure 1: Population Health Improvement Alignment



Source: Office of Population Health Improvement, DHMH, 2016

As the State undertakes initiatives to improve population health in Maryland, it is critical that these initiatives be implemented in the context of broader health care policy within the State. The prioritization process, framework, and concept discussions have been designed to work in concert with the State’s broader policy goals, particularly the Maryland All-Payer Model in its current and future phases. Under the design for a second term of the All-Payer Model, the Model’s commitments look to expand from hospitals alone to encompass the continuum of health care settings in performance measurement. Controlling the total cost of care and improving health metrics outside of the hospital will also depend on the Maryland Comprehensive Primary Care Model, robust public-private collaboration, other service delivery reforms, and the leveraging of existing resources across the public health system, social services, non-medical determinants of health, causes of health inequity, and the medical delivery system. Under the current All-Payer Model (Phase I), the State is steadily moving towards a broad-based, patient-centered health system. The State of Maryland envisions a comprehensive system that functions as a fully integrated healthcare and public health system for the patient regardless of the resident’s condition or location so that patients will be able to seamlessly access services in the most appropriate care setting at the right time with instant access to their health information. This vision is conceptually displayed in the diagram below:

Figure 2: Vision: An Integrated Delivery System



Source: Office of Population Health Improvement, DHMH, 2016

Planning for population health improvement recognizes that population health improvement priorities, and the population health management and improvement initiatives that accompany those priorities, work in parallel to payment and delivery healthcare system reform. Additionally, it recognizes that population health improvement functions to support the same goals of payment reform – access, quality, and cost of care. **While the changes to the health care delivery system are designed to improve care coordination and to deliver quality care more efficiently, planning for population health improvement furthers this mission by looking to prioritize actions that reduce the need for care before individuals enter the healthcare system, reduce reliance on health care services by addressing upstream social determinants, reduce health inequities, and reduce infrastructure inadequacies that give rise to care that could have been avoided.** While Phase I of the All-Payer Model focused on improved service delivery, and going forward, the second term warrants a broader perspective with a focus on total cost of care. The role of planning for population health improvement is to look to improve health by addressing the wide-ranging areas outside the health service delivery system that affect health outcomes over a longer horizon. This is where planning for population health improvement is placed into dialogue with the healthcare reform efforts within Maryland.

Existing Population Health Infrastructure

Planning for population health improvement builds public health system transformation. In planning for this next generation of population health improvement and management it is helpful to consider the existing infrastructure investments and elements of alignment that have contributed to Maryland’s success during Phase I; such as:

- Data analytics at the provider level
- Effective use of care coordinators/case managers

- Emergency Department-based services and linkage to appropriate services
- Increased access to care
- Use of Maryland's designated Health Information Exchange (HIE), CRISP to provide communications and data exchange across settings⁶
- Standardized protocols across clinicians in a local region
- Use of community health workers for community outreach and education
- Technology, such as telehealth
- Formation of Regional Partnerships - In response to the HSCRC's initiatives, Maryland has seen the formation of eight regional partnerships, each of which includes hospitals, county health departments, and community-based organizations and social services agencies. These partnerships are working collaboratively to identify community needs, determine resource requirements to best meet community needs and design strategies for deploying resources across the region. The collaborative model is expected to produce more effective care coordination models and maximize the use of specialized resources required of distinct populations such as frail elders, dual eligible Medicare and Medicaid beneficiaries, and chronic disease patients with specialty requirements. The long-term expectation is that these partnerships will collaborate to define population health improvement goals with particular attention to reducing risk factors.
- Maryland Medicaid and Medicare Dual Eligibles Care Delivery Strategy – Maryland dual eligible recipients comprise a disproportionate share of Medicaid and Medicare expenditures due to the population's complex health conditions. A proposal to CMMI is being developed for the State of Maryland to introduce an accountable care organization-type delivery model for dual eligibles (D-ACOs) that will provide stronger care management functions across payers, promote linkages with community-based supports and improve quality of life. To date, this population has generally not been enrolled in coordinated care models in Maryland, and the D-ACO model presents a huge opportunity to improve care coordination, heighten consumer satisfaction and reduce the total cost of care for this population. Success will depend heavily on effective models for outreach, data analytics, care coordination and integration of medical, behavioral and social services.
- Maryland Comprehensive Primary Care Model – The Maryland Comprehensive Primary Care Model (PCM) is designed to improve the health of Marylanders by delivering person-centric, efficient, and cohesive primary care. The PCM leverages the latest developments in advanced primary care medical home models that aim to strengthen the provision of comprehensive primary care services through payment reform and care delivery transformation. The PCM uses a provider framework that allows the patient to designate their own provider, which includes specialists. The hallmark of the PCM is the introduction of Care Transformation Organizations, which form the foundation for care management and population health resource infrastructure for primary care practices. Participating entities in the PCM will receive increased payments through CMS if the proposal is approved for 2018 implementation. Year 1 will focus on Medicare Fee-for-Service beneficiaries, with an incremental approach to all payers.
- Re-balancing of health care resources to support outpatient care – With the investments made in care coordination and outpatient delivery models, Maryland has seen a major decline in hospital admissions and a re-balancing of health care resources. The shift of investments to outpatient

⁶ Chesapeake Regional Information System for our Patients (CRISP). <https://www.crisphealth.org/>

delivery models has been significant, and plans for reducing inpatient capacity are rapidly developing.

These infrastructure efforts serve as foundational tools to re-make the delivery of health care and ultimately generate savings for the health care system. Sustaining success over time will require wrapping population health improvement planning around these initiatives and others. This will create opportunities for population health improvement planning to consider a prioritization process and framework that emphasizes population level action to sustain the goals of the All-Payer Model and alignment with the healthcare reform efforts that produce a more near-to-mid-term impact.

Importance of Population Health Improvement Planning Data

Paramount to Maryland’s population health improvement planning is a process founded in the ability to effectively measure the health of Maryland residents. Based on a composite of scores determined and disseminated by United Health Foundation’s *America’s Health Rankings*, Maryland has improved six spots in the national ranking of States, moving from the 24th position in 2013 to the 18th position in 2015. While much of this improvement has been attributed to expanded access to care through insurance coverage, it additionally includes the sustainment of a number of effective public health initiatives such as continued efforts in the areas of tobacco control, chronic disease prevention and management, infectious disease prevention, maternal and child health, and school readiness⁷.

In 2011, DHMH’s, Office of Population Health Improvement (OPHI) developed and launched the Maryland State Health Improvement Process (SHIP) – a framework for accountability, local action, and public engagement to advance the health of Maryland residents. SHIP began with 41 health objectives in six vision areas – healthy babies, healthy social environments, safe physical environments, infectious disease, chronic disease and health care access – which are closely aligned with national Healthy People 2020 objectives. The objectives were chosen with input from the public health community and the general public. For each objective, a statewide baseline and target goal for improvement by 2014 were established. County-level data and data by race/ethnicity were provided where available. In 2011, health improvement targets were established for 2014, and performance review indicates that Maryland achieved 28 of the 41 SHIP targets in 2014. Moving forward towards 2017 targets, DHMH adapted SHIP to five areas – healthy beginnings, healthy living, healthy communities, access to healthcare, and quality preventative care- with 39 measures. The 39 measures are identified below:

Figure 3: State Health Improvement Process (SHIP)

1. Reduce infant mortality
2. Reduce the percent of low birth weight births
3. Reduce rate of sudden unexpected infant deaths (SUIDs)
4. Reduce the teen birth rate (ages 15-19)
5. Increase the % of pregnancies starting care in the 1st trimester

⁷ United Health Foundation, America’s Health Rankings. Retrieved from www.americashealthranking.org

6. Increase the proportion of children who receive blood lead screenings
7. Increase the % entering kindergarten ready to learn
8. Increase the % of students who graduate high school
9. Increase the % of adults who are physically active
10. Increase the % of adults who are at a healthy weight
11. Reduce the % of children who are considered obese (high school only)
12. Reduce the % of adults who are current smokers
13. Reduce the % of youths using any kind of tobacco product (high school only)
14. Reduce HIV infection rate (per 100,000 population)
15. Reduce Chlamydia infection rate
16. Increase life expectancy
17. Reduce child maltreatment (per 1,000 population)
18. Reduce suicide rate (per 100,000)
19. Reduce domestic violence (per 100,000)
20. Reduce the % of young children with high blood lead levels
21. Decrease fall-related mortality (per 100,000)
22. Reduce pedestrian injuries on public roads (per 100,000 population)
23. Increase the % of affordable housing options
24. Increase the % of adolescents receiving an annual wellness checkup
25. Increase the % of adults with a usual primary care provider
26. Increase the % of children receiving dental care
27. Reduce % uninsured ED visits
28. Reduce heart disease mortality (per 100,000)
29. Reduce cancer mortality (per 100,000)
30. Reduce diabetes-related emergency department visit rate (per 100,000)
31. Reduce hypertension-related emergency department visit rate (per 100,000)
32. Reduce drug induced mortality (per 100,000)
33. Reduce mental health-related emergency department visit rate (per 100,000)
34. Reduce addictions-related emergency department visit rate (per 100,000)
35. Reduce Alzheimer's disease and other dementias-related hospitalizations (per 100,000)
36. Reduce dental-related emergency department visit rate (per 100,000)
37. Increase the % of children with recommended vaccinations
38. Increase the % vaccinated annually for seasonal influenza
39. Reduce asthma-related emergency department visit rate (per 10,000)

Source: Office of Population Health Improvement, DHMH, 2016

The goal of the SHIP has been to provide jurisdiction-level data, establish a measurement cycle and assign accountability for health improvement at the local level. SHIP data is visually displayed in a dashboard format. In addition to SHIP and reports prepared by DHMH, Maryland examines health status indicators/health behavior using national data sources that include but are not limited to:

- Behavioral Risk Factor Surveillance System (CDC)

- Youth Risk Behavioral Survey (CDC)
- America's Health Rankings (United Health Foundation)
- County Health Rankings (Robert Wood Johnson Foundation)
- The State of Obesity (Trust for America's Health)
- Commonwealth Scorecard (The Commonwealth Fund)

In addition to national databases and sources, Maryland leverages state-based surveillance systems and databases including but not limited to:

- Health Services Cost Resource Commission (HSCRC)
- Chesapeake Regional Information System for our Patients (CRISP)

Through surveillance and analysis of the aforementioned data sources, Maryland is able to utilize a process and system for benchmarking notable population health status improvements over the long term and identify continuing health status and health behavior challenges in Maryland. Where there are challenging areas, targeted resources and effective action plans could produce improved health outcomes for Maryland citizens.

Fundamental to understanding Maryland's health status is identifying where health disparity and health inequity exist. Assessment of both *health disparity* – differences in health outcomes among groups of people – and *health equity* – attainment of the highest level of health for all people through efforts that ensure that all people have full and equal access to opportunities that enable them to lead healthy lives – is integral to ensuring that the health of Marylanders is considered holistically within a historical and socio-ecological context that is shown to affect population health improvement^{8,9}. By orienting towards a holistic perspective of population health improvement, Maryland looks to address the social determinants of health as promoted by the Centers for Disease Control and Prevention¹⁰. Additionally, evidence demonstrates that increasing investment in the social determinants of health produces long-term health improvements and reduces health care costs for targeted populations.

Broadening of the Concept of Prevention

Population health improvement planning looks for health improvement over a long term horizon, yet for the purposes of planning for population health improvement longer term population health plans require clarity, dialogue, synergy, and alignment with short- and mid-term plans for health improvement. Conceptually this Plan utilizes the University of Wisconsin Population Health Institute County Health Rankings model to convey that nonmedical factors play a substantially larger role than medical factors do in health. In this model, clinical care is said to determine only 20% of an individual's health status, while socioeconomic factors account for 40% of the determinants, physical environment accounts for 10%, and health behaviors account for 30% of the determinants of health status.

⁸ Health Equity Institute definitions <http://healthequity.sfsu.edu/content/defining-health-equity>

⁹ CDC socioecological model framework for prevention <http://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html>

¹⁰ CDC definition social determinants of health: The complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors
<http://www.cdc.gov/nchhstp/socialdeterminants/definitions.html>

With the advent of this concept paradigm, prevention as paramount to addressing clinical outcomes is gaining momentum. This concept recognizes that collaborative efforts of the clinical care delivery system with the public health, social services, housing, education and neighborhood development sectors have the potential to produce more effective prevention initiatives and lasting population health improvement. These efforts are, necessarily, beginning to be accompanied by new payment models and alignment of measurement and incentives across sectors. Research highlighting the impact of social determinants on health status is compelling, and recognizes that producing change requires community engagement, ongoing relationships and resources to include medical, housing, nutrition, social services, education, community development and economic supports¹¹. This shifting paradigm further compels policymakers and providers to address health equity issues to determine how resource allocation can best improve access and empower communities toward better health. This, in turn, has fueled partnerships that better address upstream factors, or the factors that act as precursors to a clinical care need, by encouraging behavior/lifestyle changes and promoting healthier communities¹². The existing examples of initiatives are not all new, some are current and emerging, funded and unfunded, however taken together there is capacity for these emerging practices to be braided into coordinated next generation models that support population health management, the clinical care system, and align population health improvement planning in order to link the continuum approach.

The population health issues identified within the University of Wisconsin Population Health Institute County Health Rankings model concept above (physical environment, social and economic factors, and health behaviors) highlight some of the major challenges facing the State that affect health outcomes but lie beyond the scope of the medical care delivery system itself. There is mounting evidence to demonstrate that increased visibility, consideration, and focused efforts to promote behavior change, increase the social and economic equity, and improve the physical environment can produce substantial health improvements and reduce health care costs for targeted populations¹³. Interventions are complex to design, and solutions are costly to implement therefore decisions about resource allocation across regions and in localities are complicated ones. Increasingly, as responsibility is being assigned for large populations, it demands a stronger focus on disease prevention and health promotion¹⁴. Often the areas of greatest need for population health improvement may sometimes be the areas with the weakest opportunity for the clinical care system to specifically influence, generate savings and self-fund initiatives; however these challenges point to opportunity where targeted resources, partnership, and effective action plans can produce improved health outcomes for Maryland citizens and the population when considered holistically along the continuum. Furthermore, as the concept of social determinants of health becomes firmly entrenched in the clinical care delivery system, the public health profession and the public policy arena will adopt models of operation with multi-sector collaborations as a key infrastructure element. Current and continual promulgation of these comprehensive strategy models target the social determinants of health in order to address the negative health impacts that stem from negative socioeconomic factors, disparities, and health inequities, all of which function counter to the prevention of disease and negative health outcomes.

¹¹ *Ibid.*

¹² Kindig, DA & Isham G. (2014) *Front Health Serv Manage.* Population health improvement: a community health business model that engages partners in all sectors. 2014 Summer;30(4):3-20

¹³ <https://muse.jhu.edu/article/364518/summary>; <http://aje.oxfordjournals.org/content/154/4/299.short>

¹⁴ *Ibid.*

Population Health Management and Population Health Improvement

The population health improvement *planning* is premised on the emerging paradigm shift, orienting towards prevention, within population health and clinical care. This paradigm shift is paralleled with additional terminology, orienting the concepts of population health improvement on a continuum of prevention¹⁵.

Population health management refers to purposeful actions taken to achieve one or more desired health outcomes in a defined group of persons by coordinating and integrating health care, public health activities and the social and environmental determinants of health. Population health improvement has come to refer to these same efforts when adopted in a proactive and preventative oriented modality, when the target population is community-based and initiatives are focused on the larger population. Typically, the goals of population health improvement are met in the long-term. Population health improvement utilizes foundational concepts of population health management that can be systematized with further supports so that economies of scale can be realized and overall health outcomes can be improved.

Population health management and population health improvement initiatives work in parallel and with payment and delivery system reform, and function to support the same goals of payment reform. While the changes to the health care delivery system are designed to improve care coordination and to deliver quality care more efficiently, population health improvement initiatives are designed to reduce the need for care before individuals enter the healthcare system and reduce reliance on health care services by addressing the social determinants that give rise to care that could have been avoided.

While not categorically exclusive from each other, any model, concept, strategy, and/or initiative is often hard to categorize exclusively in a single realm - population health management or improvement – as nearly all initiatives aim toward risk reduction (reducing the factors that cause risk of negative health outcomes) and health promotion (encourage/promote the factors that reduce the risk of negative health outcomes), and nearly all health management goals ultimately have a long-term goals of population improvement. For the purposes of this Plan, focused on population health improvement planning, the need to address prevention on a continuum, mobilizing and integrating all available systems including the clinical and public health systems, is housed under the term of population health improvement.

3 Buckets of Prevention

In order to move towards active prevention, utilizing population health improvement concepts, the CDC articulates a conceptual framework for population health improvement and prevention using three categories – identified as “buckets of prevention” – with which to categorize prevention interventions¹⁶. Each bucket reflects a different scope of activity, expands the reach to a broader population base, and opens a broader set of intervention options. Brief descriptions of the buckets are found below.

¹⁵ Kindig D, Asada Y, Booske B. (2008). A Population Health Framework for Setting National and State Health Goals. *JAMA*, 299, 2081-2083., Kindig DA. (2007). Understanding Population Health Terminology. *Milbank Quarterly*, 85(1), 139-161., Kindig, DA, Stoddart G. (2003). What is population health? *American Journal of Public Health*, 93, 366-369.

¹⁶ Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

Figure 4: 3 Buckets of Prevention



Bucket 1: Traditional clinical prevention interventions

- Provided in a clinical setting
- Clinical services provided by traditional medical providers during a routine encounter
- Strong evidence base for efficacy and/or cost effectiveness
- Generally reimbursed, possibly mandated by insurance plans, (e.g., seasonal flu vaccines, colonoscopies, screening for obesity and tobacco use)

Bucket 2: Innovative clinical prevention provided outside the clinical setting

- Provided outside the clinical setting
- Services provided by traditional and non-traditional medical providers (e.g., CHWs, MD, NP, Care Manager, etc.)
- Clinical services provided to defined patient populations rather than one-to-one
- Proven efficacy in relatively short amount of time, 6 months – 3 years (e.g., CHW home assessment for asthma triggers)

Bucket 3: Total population or community-wide interventions

- Provided outside the clinical setting
- Targeted to an entire population or subpopulation in a defined geographic area
- Interventions may be focused on promoting behavior change through policies, insurance coverage, and/or advertising campaigns (e.g., laws establishing smoke-free zones) and are consistent with emerging evidence base
- Impact may not be demonstrated for many years or even a generation

This Plan does not attempt to determine or define the “right” area to focus on rather it looks to present concepts and frameworks to insert population health improvement into the conversation as

¹⁷ Auerbach, J. (2016). The 3 buckets of prevention. *Journal of Public Health Management & Practice*, 22, 215-218.

a mechanism for extending the efforts of the All-Payer Model successes and for linking the clinical care system to the public health system.

The Population Health Improvement Plan utilizes these three buckets as an initial concept in describing strategies to address priority areas of public health improvement. The options to address priority areas of population health improvement can be oriented within this framework of the three buckets. The 3 Buckets of Prevention framework can then be used as a tool to examine priorities for different segments of the population. With this framework, priorities can be considered with the denominator being a segment of the population or the entire population, rather than simply an individual.

To this end, the SHIP, County Health Rankings and 3 Buckets of Prevention present conceptual frameworks for population health improvement prioritization; promote ongoing healthy lifestyle and healthy behavior at the individual, neighborhood, and statewide level with intention towards addressing health equity across communities through activities occurring outside a clinic or hospital; support the All-Payer Model goals to improve population health for Marylanders; and, suggest future design assessing the opportunity and feasibility of sustainable financing for the population health improvement initiatives.

Stakeholder Engagement

DHMH's stakeholder engagement process occurred through three distinct stages: a population health summit, stakeholder presentations, and external public comment period. The purpose of this process was to guide the development of this framework and planning document and to refine it through ongoing discussions with stakeholders across State agencies, county health departments, and other community representatives. The goal was to provide an accurate representation of the current environment in Maryland, to elucidate and identify innovations that are occurring elsewhere, and to work toward developing priorities for future policy around population health improvement.

In April 2016, DHMH convened an all-day program for health professionals and stakeholders representing varied interests in population health from across the State for Maryland's Population Health Summit. Participants included local health department, local health improvement coalitions, key stakeholders from hospital systems, accountable care organizations, payers, providers, DHMH Staff and other health care reform stakeholders. The program included presentations about health status in Maryland and its comparative performance, reviews and insight into successful programs in Maryland, and presentations about health improvement programs across the country that have adopted innovative approaches. After these presentations, attendees participated in process-oriented workgroups to develop recommendations and priorities for population health improvement in Maryland. Each workgroup was encouraged to think through specific goals and/or specific population groups that represented the greatest opportunity for population-level health improvement within the frameworks presented earlier in the day (County Health Rankings, 3 Buckets of Prevention). Workgroups were also asked to begin to think through how to define the type of interventions that would be most effective for a given population. Approximately 110 participants attended the Summit and provided the critical input to the prioritization matrix process presented within this Population Health Improvement Plan.

To supplement this input, DHMH issued a “post-Summit survey,” a set of questions seeking prioritization of health improvement initiatives and prioritization of cohorts as target populations. Fifty (50) surveys were returned to DHMH, providing critical input that factored into this plan. The information from this process served as the starting point for the development of this framework.

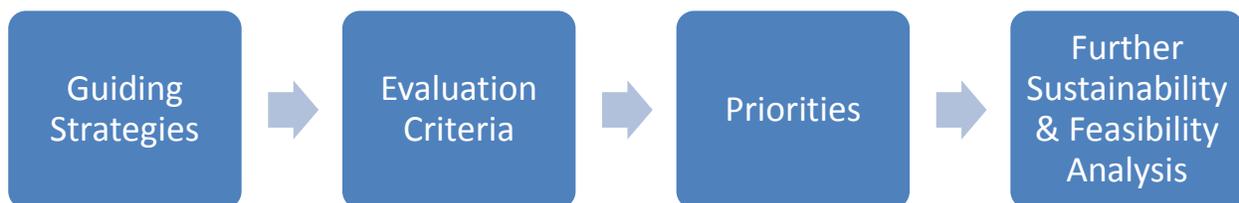
From July through November 2016, the Office of Population Health Improvement presented the Population Health Planning framework to targeted stakeholder groups. Presenters sought stakeholder expertise in topic areas of the plan such as refining the communication of prioritization concepts and frameworks. This process leveraged existing groups such as internal DHMH partners focusing on chronic disease, behavioral health, minority health and health disparities, cancer and tobacco prevention, and health information exchange analytics. In addition to these groups, local health officers, the Medicaid-led Duals Care Delivery Workgroup, HIE workgroups, HSCRC workgroups, Maryland Hospital Association, health systems, and other state agency workgroups were consulted. Workgroups and content experts were asked to provide direct feedback to the presentation and sections of the population health improvement plan, and the document was refined to reflect that input.

From December 2nd through December 12th, a draft of the Population Health Improvement Plan was released for an external public comment period. A letter with five focusing questions solicited feedback from stakeholders who participated in the summit, presentations, and their extended partners. This comment period sought to assess stakeholders’ perceptions of population health importance through the following topic areas: (1) investment (2) prioritization matrix, and (3) operationalization. The comments were then categorized qualitatively and assessed for incorporation into the final version of the population health improvement plan. This final Plan reflects the input received from this entire process.

Planning for Population Health Improvement: Prioritization Framework and Process

The prioritization framework outlines a process by which competing priorities can be examined for their population health improvement impact. The framework is for thinking through the process of identifying a focus area and developing evaluative criteria to establish a strategy.

Figure 6: Flowchart of Process



The Population Health Improvement Plan is directed by the following overarching strategies and considerations:

- Building upon the conceptual frameworks of SHIP, County Health Rankings and Auerbach’s ‘3 Buckets of Prevention.’
- Address the social, environmental and economic determinants of health and engage those agencies funded to address these issues; strategy implementation will often require a management entity to integrate efforts across organizations, agencies, and other entities.
- Improve health equity by focusing prioritization and investment on approaches that address the root causes of health inequity – social determinants of health, disproportionate investment, resource allocation, etc.
- Engage the community to support, design, and sustain population health improvement initiatives.
- Employ evidence-based strategies to build upon existing home-based, school-based and tele-health services.
- Recognize that each locality (jurisdiction, region, entity, state) must establish their highest priorities, define achievable targets and determine what strategies are feasible, likely to be or are most effective in their communities, and are sustainable.
- Define outcomes targets that go beyond State SHIP¹⁸ measures and require ongoing evaluation and prioritization; measurement is critical to monitor progress and to establish alignment.

By building upon the SHIP, robust data tradition, and focus on alignment of measures and incentives that exists in Maryland, the Population Health Improvement Plan presents a framework for assessing priorities. This process assumes an interaction and dialogue of the agenda’s priorities between local, regional, and State level implementers in order to implement active, ambitious and collaborative population health improvement initiatives. The expectation is that localization will occur allowing initiatives and more specific outcomes targets to be determined.

The evaluation criteria for the priority areas were developed after the Summit to guide priority-setting and strategy selection for Maryland’s Population Health Improvement Plan. Each of the evaluation criteria is described in greater detail below, and each element can be used to score or weigh priorities, depicted through a Harvey Ball chart or other weighting tool, and utilize for prioritization when conducting population health improvement planning¹⁹.

The framework uses the following concepts, each weighted to produce a composite score that can be depicted in a “Harvey Ball” scoring matrix or other weighing tool. In this prioritization process and framework, a “Harvey Ball” system is discussed not shown, and would indicate that an action to address a selected population health improvement priority with supporting evidence is assigned a score of 2 (fully colored Harvey Ball); an initiative with little or no evidence or contradictory evidence (e.g., short term success with weight loss programs, but little evidence of sustained weight loss), is assigned a score of 0

¹⁸ State Health Improvement Process: <http://dhmh.maryland.gov/ship/pages/home.aspx>

¹⁹ Harvey Ball Example and explanation: www.exinfm.com/training/M2C2/Tools_Techniques_Handbook.ppt

(empty Harvey Ball); all other strategies were assigned a “neutral” score of 1 (split Harvey Ball). The elements evaluated (or, criteria for scoring) included:

- Local Priority – Reflects identification of priority by hospital, Local Health Improvement Coalitions (LHICs), Local Health Department, and the State through community health needs assessments/priorities, as well as the priorities defined by stakeholder responses to the post-Summit survey.
- Evidence Base – Reflects the literature reviewed and promising practice evidence base to support the value of intervention (i.e., impact evaluations from across the country and experience in Maryland).
- Financial Return on Investment (ROI) – Reflects the magnitude of the financial return on investment, achieved through utilization reduction and tied to interventions/strategies.
- National Performance – Reflects the performance gap between Maryland’s SHIP and national data such as the County Health Rankings, United Foundation for America’s Health, and Centers for Disease Control and Prevention sources. Consideration of how to score the intervention based on whether Maryland met, exceeded, or has not met the benchmark was weighed respectively.
- Alignment with goals for collaboration and/or prevention – Reflects the degree of collaboration to assure the best use of resources.
- Magnitude of population / magnitude of burden that would be addressed – Reflects the number of people affected and/or the costs of care.

The priorities determined using the framework outlined above are intended to be consistent with the core initiatives established by State agencies, City/County Health Departments, and other stakeholders involved in the process. Priorities are aimed to mobilize around collaboration, focus areas, and goals for the State of Maryland as a whole, while allowing local partnerships to determine how to most effectively produce change using the prioritization criteria as a guide. The Plan is written with the assumption that each locality (regional, jurisdictional, neighborhood, practice, etc.) and community will work to leverage the resources of the public health, social services, clinical care delivery system, and local community-based groups and resources. The areas and strategies determined through the prioritization process, look to produce a balanced portfolio that will yield a combination of short-term, mid-term, and long-term returns on investment over the continuum of population health improvement.

Planning for Population Health Improvement: Net Savings and Return on Investment (ROI) Concepts

The following elements are provided to guide Population Health initiatives for investment. As outlined above, a critical element to guide investment priorities is the scope of the financial investment needed within the priority area and the impact of the investment. An assessment of the expected return per dollar invested is an important consideration for undertaking a project, and the tools for analyzing such a

decision are well known and straightforward, although often complex to calculate accurately²⁰. The fundamentals of such an analysis include the following:

- Revenue – What does the stream of revenue for the project look like? What are the monetary benefits associated with the project, and what quantity is assigned to each time period (short, mid, and long term for comparison purposes)? Are there non-monetary benefits associated with the project, and if so, how should they be valued in the analysis?
- Costs – What are the direct expenditures for implementing the project? When do they occur? Because direct expenditures are capital outlays, these may be the easiest part of the analysis to measure, but all costs are not direct. Projects can also have indirect and administrative costs that should be factored into the calculation. These are not easily quantified but need to be included to measure the financial impact properly.
- Risk – Revenue and cost projections have uncertainty. A complete analysis will assign probabilities for possible alternatives and calculate expected revenue and cost stream. Correctly stating these probabilities may be difficult and should involve stakeholder engagement.
- Time – Because direct project costs are often incurred early in the project life while revenues from investments tend to grow over time, revenues and costs cannot simply be aggregated across time periods without adjustment. First, with even mild inflation, the purchasing power of a dollar declines over time. Second, a dollar received today is more valuable than a dollar received in a year because the dollar received today could be earning interest. Finally, the accuracy of projected revenues and costs tends to be better in the near future than several years out. Therefore, revenues and costs that occur over time must be adjusted for the time value of money, a process referred to as *discounting*. The results of the analysis may be sensitive to the choice of discount rate, so it must accurately reflect expected inflation in the future and the after-inflation rate of interest (referred to as the *real* interest rate) that the invested funds could have generated in alternative investments.
- Return on Investment (ROI) versus Net Present Value (Net Savings) – The method used in the analysis can drive the conclusion and should be well understood before choices are made among competing priorities. ROI analysis and Net Present Value (or Net Savings) analysis are two competing methods for undertaking an analysis of costs and benefits. They use the same information in analyzing the data but present the results differently. This difference in presentation can yield different conclusions due the underlying emphasis of each method. ROI analysis, for

²⁰ There is extensive literature on cost-benefit analysis, net present value analysis, internal rate of return analysis, and ROI analysis – all are the same basis tools with different perspectives. For further discussion beyond this summary, the following books are examples of discussions on the topic:

- Broadman, Anthony, David Greenberg, Aidan Vining, and David Weiner (2011) *Cost-Benefit Analysis: Concepts and Practice*, 4th edition. (Boston: Prentice Hall)
- Layard, Richard and Stephen Glaister (1994) *Cost-Benefit Analysis*, 2nd Edition. (Cambridge: Cambridge University Press)
- Phillips, Patricia Pulliam and Jack J. Phillips (2005) *Return on Investment (ROI) Basics*. (American Society for Development and Training)

example, measures the expected return for each dollar invested in a project. Subject to a correctly conducted analysis as described above, a 20% ROI for Project A would appear to be a better choice than a 10% ROI for Project B. However, suppose Project A had a small scale while Project B affected a large number of people. The net savings for the project associated with Project B could actually save more total dollars, even though the savings per dollar is not as great as for Project A. Therefore, the goals of the investing organization are important to the method selected – maximizing net savings in total or getting the highest return per dollar invested. The conclusions from the two approaches are not necessarily the same for ranking projects.

- Savings Accrues to Whom – Finally, each analysis of ROI/Net savings analysis should account for the recipient of the savings. That is, will the project look broadly at the improved quality of life to society? Or will the analysis look to the direct return on investment? If a private business is undertaking an investment analysis, the benefits clearly accrue to that business – the investors might be pleased if someone else benefits from their project, but from their perspective the financial analysis hinges on the dollars they invest and the benefits they get in return. For governments and organizations, an improvement in population health may both lower health care costs and further a public health mission. Should any or all of these benefits count as project benefits? The decision will affect the financial viability and sustainability of the project.

While the data to make theoretically pure estimates may not exist, the above framework emphasizes factors that must be assessed in each financial analysis in developing investment priorities. For example, suppose that the precise risks associated with costs and revenues may not be available to be factored into an analysis, which is frequently the case. Two projects may have the same ROI, but stakeholders may have a sense that one investment opportunity is riskier the other. All else equal, the riskier project would be ranked lower in priority to recognize the unmeasured risk in the analysis.

Finally, it is important to consider that other nonfinancial factors are important to developing priorities. For example, the need to address healthcare inequities within the social determinants of health could be a powerful motivation for selecting specific investments, aside from the financial considerations. Both the financial and nonfinancial factors should factor into the final development of priorities, and that requires political and policy decisions, not a formula for prioritization.

Future Design Work for Planning for Population Health Improvement

The success of Phase I of the All-Payer Model, leveraging hospital level global budgets to control total hospital cost growth on a per capita basis, is emerging as a prototype for state-level approaches to shift from volume- to value-based payment. As previously discussed, in 2019, Maryland intends to expand its initial test from total hospital costs to total cost of care as part of second term of the All-Payer Model, Phase II. The next phase is contingent upon clinical and financial alignment throughout the health system. State agencies are currently engaged in several initiatives to support this transformation including the All-Payer Model Progression Plan, Maryland Comprehensive Primary Care Model, Medicaid and Medicare Dual Eligibles care delivery strategy, health professional workforce expansion, and care coordination infrastructure investments such as the Regional Partnerships. All of these efforts aim to transform the entire delivery system, to link payment to value, expanding care coordination data and analytic tools, and focus stakeholders on population health.

Planning for Sustaining Population Health Improvement

The public-private collaboration necessary to achieve early success under the All-Payer Model's ambitious financial, utilization, and quality targets has been robust and has accelerated since 2014. Continued success in reducing potentially avoidable utilization to meet financial targets and improvement in infrastructure and short-term interventions to alter utilization and quality measures will become increasingly difficult in the years ahead without a non-hospital system-wide approach targeted on improving health outcomes.

Accordingly, maintaining a positive trajectory in Phase I of the All-Payer Model, and eventually in Phase II, will require a robust population health focus that supplements the All-Payer Model. While this document presents a conceptual framework for determining priorities and placing them on the population health improvement continuum, it will be vital for the State to take the next step and develop a roadmap for sustainable, long-term investment in population health in Maryland that aligns the All-Payer Model efforts across the clinical care system and facilitates continued public-private collaboration. This roadmap will plan for sustaining improvement in population health by identifying feasible and collaborative financing mechanisms.

The Population Health Improvement Plan presented here presents the framework for improving population health in Maryland, the first phase of an extensive, collaborative process that will need to be undertaken in Maryland to develop a multi-sectoral approach to improve the health outcomes and health equity of Marylanders. Ultimately, a long-term plan that sets ambitious targets for population health improvement and outlines potential financial mechanisms for sustained investment in population health, leveraging various financial sources, traditional and non-traditional, will look to be used to build upon the foundational population health improvement concepts presented in this Plan.

A sustainable long-term Population Health Improvement Plan will cover the following areas:

- **Long-term population health improvement targets** – Long-range targets for population health based on the SHIP and broader measures of population health developed under the second term of the All-Payer Model.

- **Service/intervention approaches** – A review of emerging strategies in Maryland compared to proven clinical and community-based interventions, including their potential to reduce admissions/readmissions and future health expenditures. Recommendations on strategies for different risk groups, such as high utilizers, rising risk patients, and healthier populations with some risk factors.
- **Return on investment (ROI) analysis**– ROI calculations based on potential reductions in health care utilization from meeting new population health improvement targets through implementation of recommended services/interventions and consideration of the costs associated with implementation. Current efforts in the State will be included as inputs.
- **Financing** – A review of financing and reinvestment mechanisms for long-term sustainability of the proposed services/interventions. Different financing mechanisms may be considered for different risk groups. Potential financing streams may include hospital savings generated under the All-Payer Model, targeted community benefit dollars, private foundations, health trusts, social impact bonds, and braided funding from other sources.
- **Structure and governance** – Options for shared decision making on priority investments.

Next Steps

As Maryland advances into the next generation of health promotion, Maryland will implement provider-level initiatives, community-level initiatives and broad-based population-level initiatives. As such, Maryland will draw on many financing sources to reflect the scope of activity. The different financing sources will also reflect expectations for return on investment timelines. Different financing sources are likely to be used to support initiatives with near-term, mid-term, and long-term return on investment projections, and to support pilot programs versus established programs. This is referred to as a balanced portfolio.

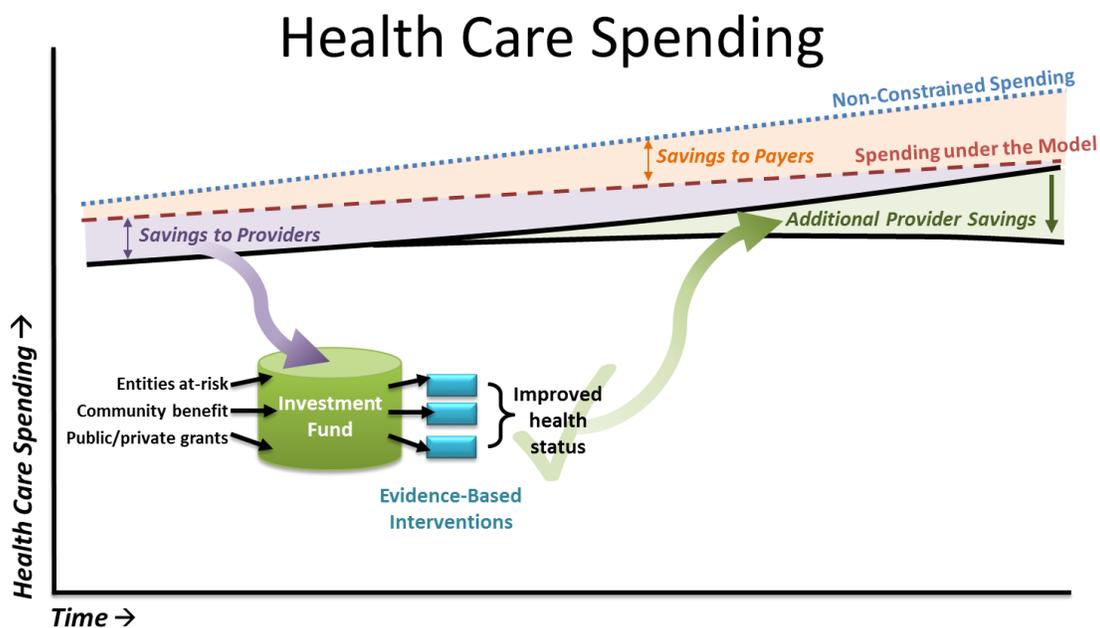
Future work considers the suitability of each financing model within context of the Maryland environment. It seeks to comprehensively assess the existing investments in population health improvement strategies, as defined by the prioritization matrix framework, and looks to explore how to leverage those existing investments, establish new financing mechanisms, and govern the braided investments towards the long term priorities and goals of the All-Payer Model. This work culminates in a deliverable of a balanced portfolio that comprehensively outlines the financing model options, the feasibility and sustainability of different models for different population health improvement initiatives, and a process by which to consider implementation and governance of the financing models.

This future design work looks to begin positioning the conversation around investment in the long-term, broad-based population health improvement initiatives that are less likely to have a near-term return. For efforts that have long-term yields, or where the returns on investment are too diffuse for direct benefits to accrue to the hospital or to its partners directly, other funding mechanisms may be required. A process for assessing financing sources for population health improvement and prevention activities are outlined below. It is understood that each potential funding source differs along a number of dimensions, including

sustainability of funding source, political and community support for funding allocation, and implications for recipients of the return on investment. The potential sources listed below are neither comprehensive nor prioritized.

While the above listed models are possible methods of financing population health improvement projects, they will be explored with the assumption of commensurate public financing at the local, State, and federal levels of government. Because public funds are likely to be necessary for projects where the ROI is variable and long-term, critical criteria in assessing the financing models are feasibility and sustainability. Finally, all financing models and their accompanying strategies will be evaluated for supportiveness of All-Payer Model and their ability to align and leverage current and ongoing infrastructure development across the State.

Figure 5: Health Care Spending Concept



Financing models will be considered after assessing the magnitude and types of investments being made across Maryland. Once a comprehensive understanding of the current investment, incentives, and measures being used for any given priority areas is completed, a feasibility study will be done for each of the explored focus areas. This feasibility study examines the proposed strategy and its accompanying outcomes based on its ability to address the prioritization areas, current State-level investment, power mapping for investment, financial modeling for short-, mid-, and long-term return on investment (ROI), and sustainability using estimates for population health impact. This will culminate with a balanced portfolio of proposed financing models and an assessment of what strategies are most appropriately funded by a given financing model, the feasibility of the financing model, and the sustainability of it within the specified Maryland context.

This future design work proposes that the below potential financing models will be considered for the five priorities outlined in the prioritization matrix framework. The potential financing models are: hospital

community benefit dollars, social impact bonds, pay for performance/success contracting, community development financial institutions funds, financial institutions, large employers, foundations and other philanthropic sources, and taxes. These financing models would be assessed within the Maryland context and within the framework of the prioritization matrix. Brief descriptions of the following financing models to be explored can be found below:

Hospital Community Benefits Dollars

Alignment of hospital's community health needs assessments (CHNAs) would be guided by the very same priorities and focus areas outlined in the prioritization matrix. Assessment of how to promote those goals through community benefit dollar allocation would be conducted in tandem with the hospital and would look to prioritize the appropriate populations.

Pay for Success/Social Impact Bonds

A unique alternative to finance limited, well-defined initiatives is known as a Social Impact Bond (SIB). Often referred to as a "Pay for Success" agreement, this model represents a performance-based contract that involves government, a private investor or Foundation, a social services provider and an external evaluator. It operates by having a government agency define an outcome it wants to see achieved relative to a specified population over a set period of time (e.g., reduce recidivism rate by 10% over 5 years among nonviolent offenders in the prison system). The government agency contracts with an organization that pledges to achieve the specified outcome(s), and the government commits to pay an agreed-upon sum if the organization is successful. The organization raises money from socially-minded investors to advance the program costs; these operating funds are paid to the social service provider(s) that will provide the services. If the outcomes are achieved, the government agency pays the organization, and the investors receive a return on their principal. If the outcomes are not achieved, the government pays nothing. If the project exceeds performance targets, investors may earn a profit.

While referred to as "bonds," these financial agreements operate as private loans, except that they are repaid only if specific measurable outcomes are achieved. The goal is to encourage private investors to fund proven social programs by providing upfront support to the programs that aim to improve long-term outcomes.

The Social Impact Bond model could be valuable to build long-term relationships across sectors within a region or to finance a focused initiative that is of interest to a specific community or population.

Community Development Financial Institutions Fund

The Community Development Financial Institutions Fund (CDFI Fund)²¹ provides another potential financing model for population health improvement. It originated in 1994 to support community development through loans and investments in minority and economically distressed communities; these investments are aimed at building business, creating jobs and revitalizing neighborhoods. More recently, it has come to focus on projects that improve health and reduce health care costs in low income neighborhoods, building a collaborative approach to community development finance and public health. As one industry representative stated, there is the recognition that "the goals of reducing poverty and

²¹ <https://www.cdfifund.gov/Pages/default.aspx>

improving health outcomes are mutually reinforcing.” In several cases, the CDFI Fund has made loans available to distressed neighborhoods for major initiatives, and private foundations and the corporate business industry have then contributed to comprehensive neighborhood strategies. The investments generally require a return at a very low interest rate and must meet general community development guidelines.

Financial Institutions

The Community Reinvestment Act (CRA) provides an opportunity for funding neighborhood development projects. The CRA is a series of federal statutes and regulations that require institutions holding FDIC-insured deposits to help meet the credit needs of the communities in which they operate, including entities and individuals from low and moderate income (LMI) neighborhoods. Activities that qualify for CRA credit include Public Welfare investments which are identified as investments that promote the public welfare by providing housing, service or jobs that primarily benefit LMI individuals. Also qualifying are community development projects that promote affordable housing and financing activities that revitalize LMI areas. Maryland could work to design activities incorporating particular health improvement features consistent with the priority goals for the State.

Large Area Employers

Large employers may be willing to invest in health promotion initiatives to the extent that these initiatives are judged to impact absenteeism, performance / productivity, disability claims and/or the ability to recruit and retain a skilled workforce.

Foundations and Other Philanthropic Sources

Major initiatives are underway through foundations to provide significant funding and long-term commitment for neighborhood development projects designed around health improvement and economic development goals. Projects are focused on housing, transportation, land use, food systems and culture change to create “healthy space” and healthy lifestyles. Some foundations and philanthropies to consider are:

- Kresge Foundation
- Robert Wood Johnson Foundation
- Centers for Disease Control and Prevention (CDC) grant-funded initiatives
- Alliance for a Healthier Generation
- PEW Charitable Trust Resource
- Change Lab Resources
- Others

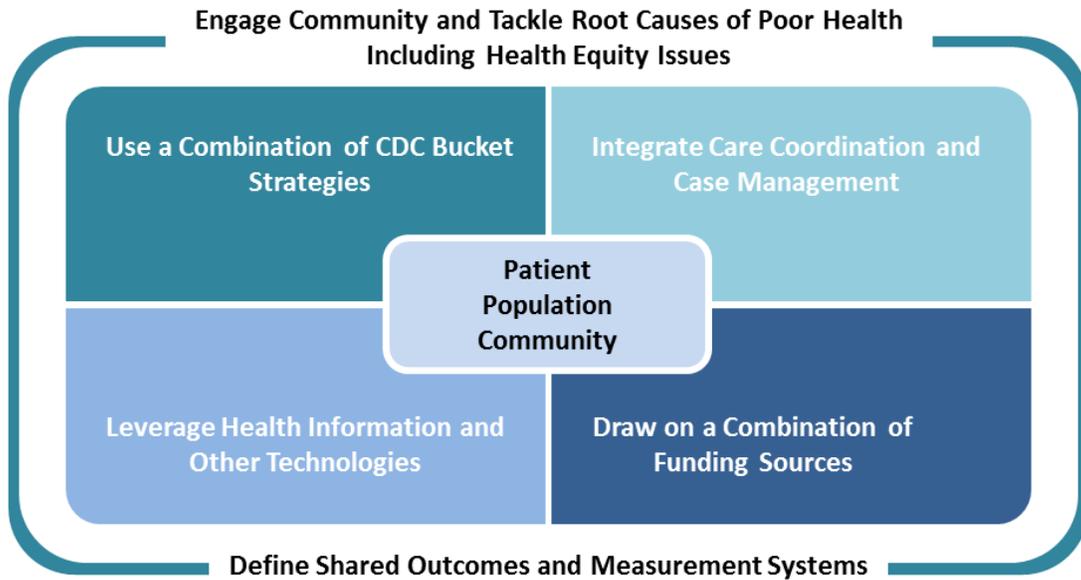
Taxes to discourage unhealthy behaviors

Another source of funds may be generated through prevention efforts themselves, aimed at discouraging unhealthy behaviors. An example would be taxes or fees imposed on the consumption, production, or distribution of products with known health risks such as tobacco, sugary beverages and alcohol. Clearly, this requires the political support and the community adoption. However, there is opportunity in the context of a broader-based campaign for healthy living and incentives tied to healthy behaviors. A recent

report documents that one-third of the general population’s sugar consumption comes from soda consumption; this suggests a significant opportunity tied to reducing soda consumption and making real progress in obesity prevention through a population-based initiative.

Vision for Implementation

Figure 6: Vision for Implementation



Source: Office of Population Health Improvement, DHMH, 2016

In moving forward with population health improvement activities that are coordinated with the All-Payer Model, the State endeavors to guide planning for population health improvement through an establishment of shared priorities, outcome measures and implementation. Based on data availability and community input, localities can determine the most critical health priorities and what strategies will be most effective to improve the health of their local populations and achieve greater health equity.

Appendices:

- A. Maryland's Investment in Population Health Management**
- B. Hospital Utilization per Capita, by County in Maryland (CY2014-2015)**
- C. Community Benefits Spending by Maryland Hospitals (FY2015) in Maryland (CY2014-2015)**
- D. Maryland Population Health Summit Agenda**
- E. Maryland Population Health Summit List of Participants**
- F. Maryland Population Health Summit Results Post Summit Survey Analysis**
- G. Maryland Health Ranking Report – State of Maryland**
- H. Progress Measurement and Opportunities for Expanded Datasets**
- I. Stakeholder Commentary**

Appendix A: Maryland's Investment in Population Health Management

Maryland's Investments in Population Health Management

In the course of the last three years, the State of Maryland has introduced many patient-centered services and care management functions focused largely around high utilizers in need of “high touch” services; in addition, Maryland has built effective infrastructure to support population health management across the State. This has been accomplished through the efforts of public agencies, payers, and the provider industry. Major initiatives are identified below to highlight the effective base of operations upon which prevention initiatives can be built:

Patient-Centered Medical Homes

In 2011, Maryland launched a three year pilot study to test the PCMH model with 52 primary and multispecialty practices (The Maryland Multi-Payer Patient-Centered Medical Home Program, or MMPP). These practices include private practices and federally-qualified health centers located across the State, and Maryland law SB 855/HB 929 requires the State's five major insurance carriers of fully insured health benefits products (Aetna, CareFirst, CIGNA, Coventry and United Healthcare) to participate in the MMPP.

CareFirst's regional PCMH program is now one of the nation's most mature and established large-scale medical homes programs. Nearly 90 percent of all primary care providers in the CareFirst service area – including parts of Northern Virginia, the District of Columbia and Maryland – participate in the program. Quality indicators are trending positively, and CareFirst members served by PCMH have continued to show lower utilization and below expected costs. The program has incorporated provider incentives (using cost, quality and engagement criteria), and 84 percent of participating panels in 2014 achieved savings for their members, as measured against the expected costs of care.²²

Alongside the expansion of the CareFirst's PCMH model, a number of other provider-payer initiatives in Maryland are worth noting, models that have been designed around the medical home model:

- **Comprehensive Primary Care Initiative (CPC+):** CMS recently announced the opportunity for payers and providers across a large region to establish a 5-year payment model designed to support case management and many other features of the PCMH. While not selected as a participant, Maryland may be expected to implement a similar model (in terms of payment structure and incentives) to strengthen primary care and build toward more of an attribution model.
- **Employer-sponsored medical plan: Habeo²³** is a collaborative medical plan for employers – aimed at reducing costs for self-funded employers and their member employees – that are designed around the patient-centered medical home model. Its medical plan also includes Clinical Health Coaches, care coordinators and wellness activities, and it incorporates incentive rewards for members who hit wellness milestones. Currently, this plan works with GBMC and MedStar Health providers, and serves a number of employee beneficiaries.

²² CareFirst BlueCross BlueShield. (2015).

²³ Retrieved from <https://www.habeohealthplan.com/>

CRISP: Maryland's Health Information Exchange (HIE)²⁴

Chesapeake Regional Information System for our Patients (CRISP) – Indeed, CRISP has been central to population health management efforts in Maryland, providing the critical functions of communications, data exchange, and shared care plans across providers. While at different stages of operation and development, CRISP is rapidly extending across the continuum, and CRISP continues to develop new functions and new capabilities for customized reporting. As a result, CRISP continues to fuel population health management efforts in the State of Maryland by facilitating (a) the shift of services to the community setting, (b) more effective care coordination and improved quality of care for patients, and (c) reduced costs of care through reduced duplication, greater efficiencies, and improved outcomes. CRISP now represents a national HIE model.

Beginning in FY2010, the HSCRC funded the general operations and reporting services of CRISP through hospital rates; in other words, CRISP operations have been funded through an assessment on Maryland hospitals.²⁵ In FY2016, CRISP was funded for \$3.25 million (HSCRC, May 11, 2016).

Going forward, funding for CRISP has been separated into two distinct categories and two distinct funding sources to distinguish between:

HIE core operations/standard CRISP reporting services, associated with general rate setting, methodology and monitoring functions of the Commission (consistent with the functions represented by the funding/operations supported in the budget above), and
Integrated Care Network functions ("ICN activities"), representing HIE connectivity expansion and ambulatory integration, statewide infrastructure needs, and expanded reporting services

The HSCRC has approved funding for CRISP over several years and continues to do so, recognizing the return on investment that CRISP provides. The funding is to support HIE connectivity functions and standard CRISP reporting services for the Commission (consistent with the functions documented in prior years above) along with core functions and reporting services, including Integrated Clinical Network activities. As noted in its most recent Staff Report: "A return on the investment will occur from having implemented a robust technical platform that can support innovative use cases to improve care delivery, increase efficiencies in health care, and reduce health care costs."

Care Delivery Strategy for Dual Eligibles²⁶

The State of Maryland is finalizing a proposal to CMMI for approval to launch an accountable care organization model for dual eligible, which is designed to provide more effective care coordination for this high-utilizing population. Duals Accountable Care Organizations will initially focus on the approximately 52,000 non developmentally-disabled full dual eligible beneficiaries residing in certain geographies (Baltimore City, Baltimore County, Montgomery County and Prince George's County). The initiative is anticipated for implementation in 2019, to correspond with Phase 2 of the All-Payer Model.

²⁴ Beginning in FY2015, CRISP-related hospital rate adjustments have been paid into an MHCC fund, and MHCC and the HSCRC review the invoices for approval for appropriate payments to CRISP. *See* Health Services Cost Review Commission (2016, May 11).

²⁵ HSCRC. (2016, May 11).

²⁶ Individuals who qualify for both Medicaid and Medicare benefits

Community Health Worker Models

Community health workers are being used by Maryland providers in various non-clinical roles to provide education, health system navigation/care coordination and counseling. Worth noting is the effective use of community health workers by the Health Enterprise Zone in West Baltimore – where community health workers are used for outreach and education – and by the Johns Hopkins Community Health Partnership (J-CHiP) in East Baltimore – where community health workers provide health care education, home visits, counseling, care coordination, and linkage to resources for financial and social services.

This past year, the HSCRC authorized \$10 million in additional funding to be awarded on a competitive basis to hospitals committed to hire community health workers and care coordinators from disadvantaged communities (Population Health Work Force Support for Disadvantaged Areas Program). Funding is to be awarded to those hospitals committed to train and hire workers from geographic areas of high economic disparities and unemployment to fill new care coordination, population health, Health Information Exchange, and consumer engagement positions. In this way, the All-Payer Model is functioning to support two goals: All-Payer Model revenues are helping to support the manpower resources for population health improvement and helping to create employment opportunities for individuals in disadvantaged areas. The HSCRC requires awardee hospitals to provide matching funds of at least 50% of the amount included in rates, and hospitals that receive funding under this program will report to the Commission annually about the number of workers employed under the program, the types of jobs supported by this program, retention rates, and an estimate of the impact that these funded positions have had in reducing potentially avoidable utilization or in meeting other objectives of the All-Payer Model.

Hospital-Sponsored Program Initiatives

Under the All-Payer Model, Maryland hospitals have been largely focused on the population of high utilizers and high-risk patient populations, identified by multiple chronic conditions and hospital utilization patterns; Maryland hospitals have invested heavily in to reduce unnecessary emergency room visits and acute care admissions of this patient population. As a result, several new functions/new manpower have now become integral functions in many Maryland hospitals; core hospital services now include care transitions, care coordination, medication reconciliation, and 30-day post-discharge follow-up.

More specifically, many Maryland hospitals have introduced/expanded the following delivery models and support services:

- Case management services, with the largest investments made for case managers in the Emergency Room
- Patient-centered medical homes to provide more patient-centered care and care coordination
- Primary care linkage: Protocols for linking ER patients more immediately to a primary care physician
- Care transitions, including education/counseling at the point of discharge, standardized practices for communications to nursing homes, and 30-day post-discharge follow-up for high risk patients/high utilizers
- Technology to extend the reach of specialists, improve quality of care, and reduce operating costs across hospitals, clinics, Department of Corrections, and nursing homes (such as telehealth).
- Care coordination functions through the use of CRISP and risk stratification software

- EHR-based systems to identify high utilizers and vulnerable patients across service settings

More recently, Maryland hospitals have begun investing in initiatives that further enrich primary care service delivery to maximize the opportunities provided by this setting. Efforts are focused on standardizing disease management protocols and integrating medical and behavioral health management in the primary care setting. Most of the activity described has been operationalized through Maryland's hospitals and is expected to be sustained largely through hospital operating income. For some hospitals, this will include a rate increase awarded through the HSCRC for distinct initiatives. New initiatives will include:

- Community-based care coordination: Care coordinators embedded in primary care practices, and care coordination teams to monitor and coordinate a response to readmissions/high utilization patterns
- Behavioral health services embedded in the primary care setting: This includes mental health professionals positioned within primary care sites for early identification and early treatment, and formal referral networks for behavioral health services
- Increased availability of palliative care resources in the hospital
- Closer working relationships and protocol development across hospitals and post-acute facilities (with some initiatives accompanied by bundled payment models)

Understood together, these interventions have been designed to improve continuity of care, reduce medical complications, reduce avoidable utilization, and reduce the costs of care for high utilizers and high risk patients, *with the impact on utilization patterns often produced within the same year of operationalizing these new initiatives.*

Integration of Faith-Based Organizations to Support Care

The Maryland Faith Community Health Network is a partnership to connect hospital navigators and volunteer liaisons from local places of worship – such as churches, synagogues and mosques – to help coordinate care and support patients both during and after a hospital stay. This two year pilot program is a partnership between LifeBridge Health, the Maryland Citizens Health Initiative and dozens of local houses of faith. With the patient's consent, faith leaders are notified when a member of their own congregation is admitted to the hospital, and then trained liaisons from the patient's own faith organization works with hospital navigators to provide support to patients and their families. This might include prayer, transportation and/or providing meals.²⁷

Regional Partnerships

In response to the HSCRC's incentives and a joint HSCRC-DHMH Planning Grant in 2015 that provided funding and technical assistance, Maryland has seen the formation of 8 regional partnerships each of which includes hospitals, County Health Departments, community-based organizations and social services agencies. These Partnerships are working collaboratively to identify community needs, determine resource requirements to best meet community needs, and design strategies for deploying resources across the region. The collaborative model is expected to produce more effective care coordination models and maximize the use of specialized resources required of distinct populations such as frail elders, dual

²⁷ Boston, S., & DeMarco, V., (2016).

eligibles and chronic disease patients with specialty requirements. The long-term expectation is that these partnerships will collaborate to define long-term population health improvement goals with particular attention to reducing risk factors. The HSCRC has actively supported the development and continued operation of these Partnerships by initially (a) awarding planning and development funds, (b) continuing to offer technical assistance to the Partnerships, and (c) incentivizing collaborative operations through project implementation awards (on a competitive basis).

Re-Balancing of Health Care Resources to Support Outpatient Care

With the investments made in care coordination and outpatient delivery models, Maryland has seen a major decline in admissions and a re-balancing of health care resources. The focus on post-acute care setting is intensifying and plans for reducing inpatient capacity are rapidly developing:

- Three hospitals in Maryland have announced plans to close inpatient facilities and construct/expand an ambulatory services campus in place of these inpatient facilities.
- A proposal to CMS to waive the 3-day rule is under consideration to determine the potential of the post-acute setting to be further leveraged and that acute care capacity can then be further reduced²⁸.
- Several Maryland hospitals have introduced physician house call programs, likely to be expanded in the coming two years, further reducing the demand on hospital capacity.

These efforts are expected to generate further savings to the health care system as capacity reductions produce even more meaningful cost reductions to health care operations.

²⁸ [https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Three Day Payment Window.html](https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Three-Day-Payment-Window.html)

Appendix B: Hospital Utilization per Capita, by County in Maryland (CY2014-2015)

Use Rates By Region (Adjusted for Outmigration)

Calendar 2014

Region	Calendar Year 2014				Variance Above / (Below) Statewide		
	Population	Inpatient Discharges Rate per 1,000	Emergency Department Visits per 1,000	Observation Visits per 1,000	Inpatient Discharges Rate per 1,000	Emergency Department Visits per 1,000	Observation Visits per 1,000
Baltimore City-West	248,818	179.25	913.75	70.40	72.52	537.14	37.38
Baltimore City-East	185,734	166.89	771.69	60.88	60.16	395.08	27.85
Dorchester	31,874	142.09	712.39	22.58	35.37	335.78	(10.44)
Anne Arundel-Baltimore	137,785	146.38	617.54	50.50	39.65	240.93	17.48
Wicomico	101,399	118.52	573.27	21.39	11.79	196.65	(11.63)
Somerset	24,455	106.76	512.33	26.18	0.04	135.72	(6.85)
Worcester	52,034	115.86	511.51	27.87	9.13	134.89	(5.15)
Baltimore City-North	190,488	133.39	506.36	45.93	26.67	129.75	12.91
Garrett	27,923	96.34	486.27	28.63	(10.38)	109.65	(4.40)
Kent	25,150	121.57	473.76	18.52	14.85	97.15	(14.50)
Allegany	76,120	130.17	459.26	42.19	23.44	82.65	9.16
Talbot	38,270	128.61	453.04	14.56	21.89	76.43	(18.46)
Caroline	34,082	120.19	447.97	16.62	13.47	71.36	(16.41)
St Marys	114,884	96.30	441.85	33.94	(10.42)	65.24	0.92
Baltimore-East	320,615	142.74	430.49	53.37	36.01	53.88	20.34
Queen Annes	44,320	99.40	426.13	16.41	(7.32)	49.51	(16.61)
Baltimore-West	292,940	132.04	409.31	37.83	25.32	32.70	4.81
Charles	149,134	92.72	405.63	29.28	(14.01)	29.01	(3.74)
Calvert	92,004	90.16	402.22	29.50	(16.56)	25.61	(3.52)
Cecil	102,836	96.77	398.44	37.20	(9.96)	21.83	4.18
Washington	149,025	122.00	387.08	45.54	15.27	10.46	12.51
Prince Georges-Central	262,771	102.79	336.60	35.22	(3.93)	(40.02)	2.19
Harford	249,230	104.44	312.97	51.30	(2.28)	(63.64)	18.28
Prince Georges-South	299,976	85.67	310.74	36.30	(21.06)	(65.87)	3.28
Carroll	158,442	102.11	295.98	33.00	(4.62)	(80.64)	(0.02)
Prince Georges-East	77,042	93.41	294.98	23.38	(13.32)	(81.63)	(9.64)
Anne Arundel	434,811	91.01	289.93	21.99	(15.71)	(86.68)	(11.04)
Frederick	253,346	91.54	279.25	27.29	(15.18)	(97.37)	(5.73)
Prince Georges-North	238,675	90.24	264.11	22.28	(16.49)	(112.51)	(10.74)
Baltimore-North	170,011	96.14	248.86	24.80	(10.59)	(127.75)	(8.22)
Montgomery	1,031,950	81.22	238.93	18.53	(25.50)	(137.68)	(14.50)
Howard	314,249	82.07	211.50	15.95	(24.65)	(165.12)	(17.08)
Statewide Total	5,930,394	106.73	376.62	33.02	-	-	-
Eastern Shore Total	173,697	120.96	495.77	17.48	14.24	119.16	(15.54)

Notes:

- [1] Population Source: Neilson Claritas population estimates based on 2010 census numbers
- [2] Source for utilization numbers: HSCRC Abstract data FY2014 final, FY2015 Q1&Q2 final
- [3] Adjusted for outmigration using FY 2012 MedPar data. Calculated total charges divided by in-state charges for each county

Appendix C: Community Benefits Spending by Maryland Hospitals (FY2015) in Maryland (CY2014-2015)

All Maryland Hospitals
Total Community Benefit Dollars
Fiscal Year 2014

Hospital Name	Community Benefits, Less Charity Care
Southern Maryland	
Dimensions Prince Georges Hospital Center	\$43,859,005
Dimensions Laurel Regional Hospital	11,153,630
Doctors Community	3,900,417
Ft. Washington	608,774
MedStar Southern Maryland	7,250,765
Calvert Hospital	12,884,303
Southern Maryland Subtotal	\$79,656,894
Nexus Montgomery	
Holy Cross Hospital	\$25,117,340
Suburban Hospital	16,931,192
Shady Grove*	18,654,686
Nexus Montgomery Subtotal	\$60,703,217
West Baltimore Collaborative	
UMMC	\$146,030,684
UM Midtown	21,055,244
Bon Secours	10,198,220
St. Agnes	15,118,559
West Baltimore Collaborative Subtotal	\$192,402,708
UMUCH/UHCC	
UM Upper Chesapeake	\$10,053,599
Union Hospital of Cecil County	7,583,715
UMUCH/UHCC Subtotal	\$17,637,314
Bay Area	
Anne Arundel Medical Center	\$30,362,891
UM Baltimore Washington	17,927,450
Bay Area Subtotal	\$48,290,341
Baltimore City	
Johns Hopkins Hospital	\$155,549,622
Johns Hopkins Bayview Medical Center	35,976,948
Mercy Medical Center	36,936,225
LifeBridge Sinai	45,895,619
Baltimore City Subtotal	\$274,358,414
Howard County	
Howard County Hospital	\$15,126,025
Howard County Subtotal	\$15,126,025
All Other Hospitals	
All Other Hospitals Subtotal	\$326,117,290
Total	\$1,014,292,203

Notes:

* The Adventist Hospital System has requested and received permission to report their Community Benefit activities on a CY Basis. This allows them to more accurately reflect their true activities during the Community Benefit Cycle. The numbers listed in the 'FY 2014 Amount in Rates for Charity Care, DME, and NSPI' Column reflect the Commission's activities for FY14 and therefore will be different from the numbers reported by the Adventist Hospitals.

*Total Community Benefit is Net Community Benefit of Direct Costs + Indirect Costs - Offsetting Revenue.

Appendix D: Maryland Population Health Summit Agenda



Maryland Population Health Summit

Baltimore, MD | Wednesday, April 6, 2016

PURPOSE

Participate in an interactive forum to help develop Maryland's plan for Population Health Improvement

8:00 - 9:00am	REGISTRATION & BREAKFAST	General Session Embassy
9:00 - 9:15am	INTRODUCTION & OBJECTIVES	General Session Embassy
LEARN		
9:15 - 9:45am	CURRENT HEALTH STATUS & LONG-RANGE VISION FOR MARYLAND	General Session Embassy
9:45 - 10:15am	DEFINING STRATEGIES & POTENTIAL SAVINGS FOR FUTURE INVESTMENT	General Session Embassy
10:15am	BREAK	Lobby
INTERACT & EXPLORE		
10:30 - 12:00pm	TARGETED INITIATIVES & SUCCESS STORIES Debbie Chang Nemours Children's Health System Wilmington, DE Amanda Parsons, MD Montefiore Health System Bronx, NY Mark Brooks Hennepin Health Minneapolis, MN	General Session Embassy
12:15 - 1:00pm	WORKING LUNCH <i>Supportive Housing as an Investment in Population Health Management</i> Nancy Mercer Corporation for Supportive Housing	General Session Embassy
DISCUSS		
1:15 - 2:00pm	DISCUSSION GROUPS <i>"A" Integrating health and social services for high risk/high need populations</i> • Ambulatory care setting and working partnerships: Hennepin Health • Emergency room setting: Maximizing the opportunities <i>"B" Integrating health and social services for high risk/high need populations</i> • Ambulatory care setting and working partnerships: Hennepin Health • Emergency room setting: Maximizing the opportunities <i>Effective use of community health workers</i> • Integrating CHWs into the Team: Howard County Community Care Teams • Update on Maryland workforce development for CHWs <i>Supportive housing as integral to behavioral health care</i> • Emerging models <i>Neighborhood health initiatives: What does it take to implement?</i> • Montefiore initiatives: Implementation • B'More for Healthy Babies: Formula for Success <i>"Next generation" regional coalitions</i> • Potential initiatives and financing strategies for LHICs and Regional Partnerships	Maryland 1 Wayne Maryland 2 Maryland 3 Regency Camelia
2:00 - 2:15pm	BREAK	Lobby

COLLABORATE

2:15 - 3:00pm	WORKGROUP SESSION: PRIORITIES FOR POPULATION HEALTH	
	#1 Urban communities	Regency
	#2 Rural communities	Maryland 1
	#3 Senior care and homebound populations	Maryland 3
	#4 Mental health/addictions treatment and prevention	Camelia
	#5 Multisector service planning for children and families	Maryland 2
3:00 - 4:00pm	MARYLAND PANEL DISCUSSION: WHAT ARE THE PRIORITY INVESTMENTS?	General Session Embassy
4:00 - 4:15pm	WRAP-UP & PROCESS FOR FURTHER INPUT	General Session Embassy

Appendix E: Maryland Population Health Summit List of Participants

Maryland DHMH OPHI Population Health Summit Attendee List, April 6, 2016

<u>Last</u>	<u>First</u>	<u>Org/Inst/Geographic Region</u>
Abney	Dianna	Charles County
Afzal	Scott	CRISP
Alborn	Salliann	HSCRC Data and Infrastructure
Altman	Rebecca	BRG
Argabrite	Shelley	Garrett County Health Department
Banks-Wiggins	Barbara	Prince George's County Health Department
Barmer	Katherine	NexusMontgomery
Barth	Jason	Frederick Regional Health System
Bash	Camille	Southern Maryland Regional Coalition
Bauman	Alice	OPHI staff
Behm	Craig	CRISP
Bowles	Daniel	Aledade
Brookmyer	Barbara	Frederick County
Brooks	Mark	Project Manager
Brown	Dawn	Carroll County Health Department
Carter	Dr. Ernest	Prince George's County Health Department
Chan	Jinlene	Anne Arundel County
Cheng	Debbie	Nemours Children's Health Center
Chernov	David	TLC-MD
Ciotola	Joseph	Queen Anne's County
Clark	Liz	Healthy Howard
Cohen	Robb	Advanced Health Collaborative
Dain	Renee	The Coordinating Center
DeVito	Lisa	Johns Hopkins Health Care
Dineen	Rebecca	Baltimore City Health Department
Donahoo	Jean-Marie	Union Hospital of Cecil County
Dooley	Patrick	University of Maryland Medical System
Duffy	Angela	Chase Brexton Health Care
Edsall Kromm, PhD	Elizabeth	Howard County Regional Partnership
Elliott	Natalie	Mosaic Community Services
Farrakhan	Dana	University of Maryland Medical System
Feeney	Dianne	HSCRC
Funmilayo	Damilola	Chase Brexton Health Care
Garcia-Bunuel	Liddy	Healthy Howard
Garrity	Stephanie	Cecil County
Gerovich	Sule	HSCRC Performance Measurement
Glotfelty	Rodney	Garrett County

Goodling	Zachary	NexusMontgomery
Goodman	Laura	DHMH Steering Committee
Griffin	Tammy	Wicomico County
Haft	Howard	DHMH
Harrell	Roger	Dorchester County
Haswell, MD	Scott	Post Acute Physician Partners, LLC
Hatef Naimi, MD	Elham	JHU School of Public Health
Highsmith Vernick	Nikki	Horizon Foundation
Hiner	Kimberly	Maryland Office of Minority Health and Health Disparities
Horrocks Jr.	David	BRG
Hugenbruch	Genevieve	OPHI staff
Hummer	Jim	Lorien at Home
Hurley	Lindsay	BRG
Jacobs	Michael	Dimensions
Jenkins	Yolanda	Owensville Primary Care
Jones	Rebecca	Worcester County
Kalyanaraman	Nilesh	Health Care for the Homeless
Kessler	Livia	LifeBridge Health
Khangura	Loretta	Chase Brexton Health Care
King	Sharyn	The Coordinating Center
Knight, MD	Dr. Terralong	Greater Baden Medical Services
Kuchka-Craig	Deborah	MedStar
Larrimore	Aaron	Medicaid
Lee	Jessica	HSCRC
Lichtenstein	Karen Ann	The Coordinating Center
Lipford	Sharon	Healthy Hartford
Luckner	Mark	CHRC
Mandel	Laura	OPHI staff
Marcozzi	David	Univ of Maryland, SOM
Markley	Susan	HSCRC Community Engagement
Mayer	Jennifer	Priority Partners MCO/Johns Hopkins Health System
McClellan	Sheila	VHQC
Mercer	Nancy	Director
Montgomery	Russ	OPHI staff
Morgan, PhD	Dr. Tanya	Greater Baden Medical Services
Moy	Russell	Harford County
O'Brien	John A	TLC-MD
O'Neill	Dawn	Baltimore City Health Department
Parsons	Amanda	Montefiore
Pemberton	Tahira	Chase Brexton Health Care
Penniston	Erin	Center for Chronic Disease Prevention and Control
Perman	Chad	OPHI staff
Pier	Kristi	Chronic Disease and Prevention
Polsky	Larry	Calvert County

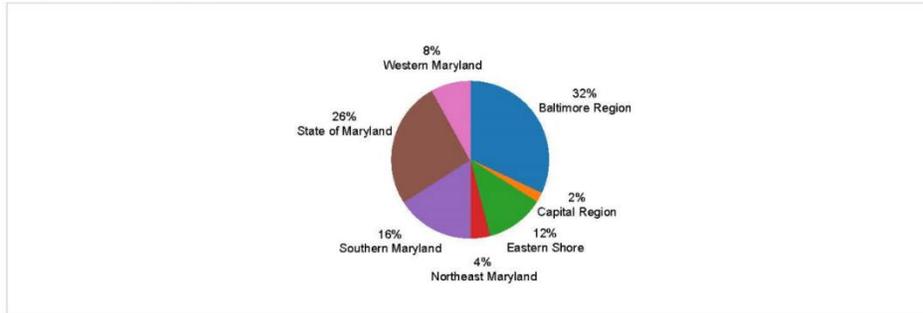
Ports	Steve	HSCRC
Preston	Leni	Maryland Women's Coalition for Health Care Reform
Proctor	Suzanne	MedStar
Raswant	Maansi	Maryland Hospital Association
Redmon	Patrick	BRG
Repac	Kimberly	Western Maryland
Richardson	Regina	Johns Hopkins HealthCare LLC
Roddy	Tricia	Medicaid
Rossmann	Maura	Howard County
Rubin	Michelle	Chase Brexton Health Care
Samson	Raquel	Amerigroup
Schlattman	Suzanne	Maryland Citizens' Health Initiative Education Fund
Schneider	Kathleen	BRG
Sciabarra	Jeananne	Healthy Howard
Shahan	Judy	Chase Brexton
Slusar	Kim	OPHI staff
Spencer	Leland	Caroline County/Kent County
Starn	Amber	Charles County Department of Health
Stephens	Bob	Garrett County Health Department
Swanner	Lauren	Mosaic Community Services
Talbert	Kate	Healthy Howard
Teal, MD	Cydney	Union Hospital of Cecil County
Thompson	Patricia	Upper Chesapeake Health and Union Hospital of Cecil
Tillman	Ulder	Montgomery County
Tisdale, Jr.	James Lee	JHHC/PP
Vachon, MD	Gregory	Health Management Associates
Wadley	Fredia	Talbot County
Weinstein, MD	Adam	UM Shore Health
Werthman	Tom	BRG
Wheeler	Megan	BRG
Woldu	Feseha	MedStar
Won	Darleen	LifeBridge Health
Yang	Chris	BRG
Yuhas	Michael	Integra ServiceConnect

Appendix F: Maryland Population Health Summit Results Post Summit Survey Analysis

Respondent Characteristics

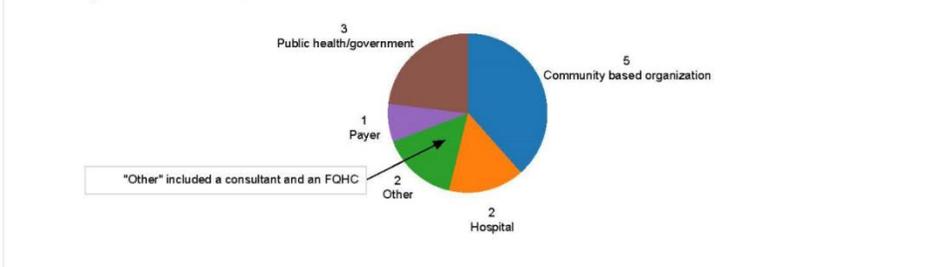
50 responses received out of 130 sent (39% response rate)

Responses by Geography

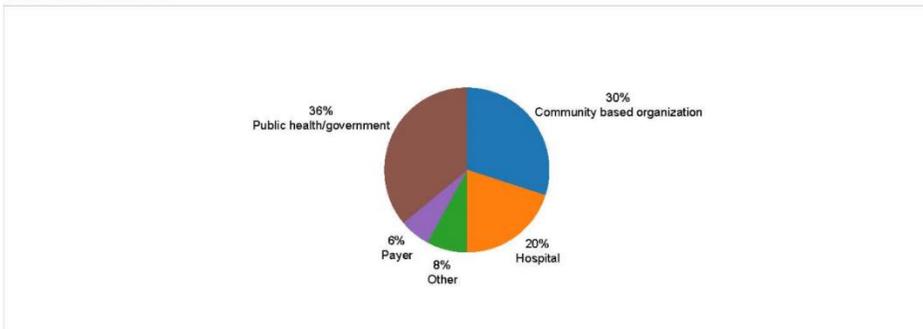


Responses by Sector for "State of Maryland"

26% of respondents stated that their attention is primarily focused on the entire State of Maryland. A breakdown of the sectors that these individuals represent is shown below.



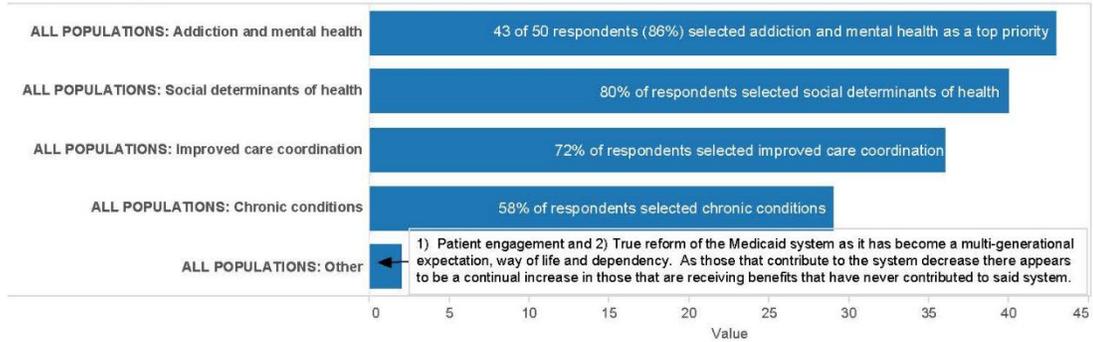
Responses by Sector



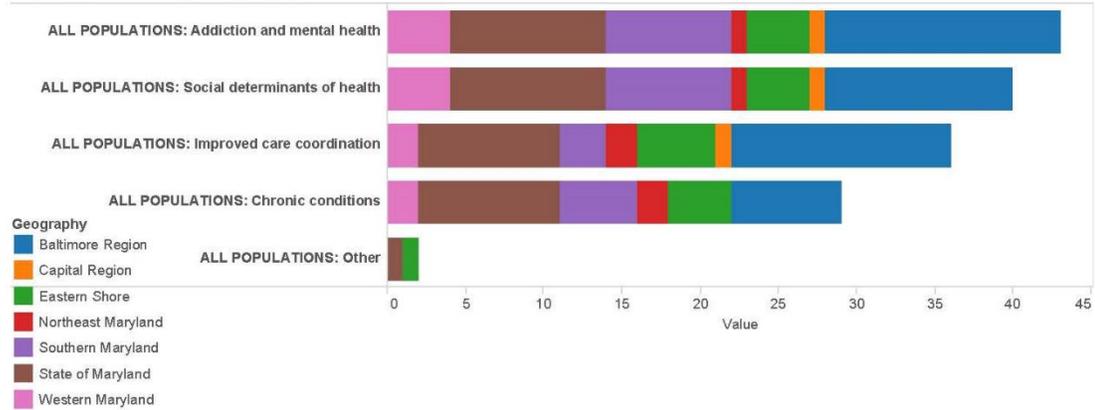
Global Priorities Overview

Respondents were asked to select the 3 items that most require new investments and strategies to improve the health of people in Maryland. They could select from a list of 4 predefined options and/or write in up to 2 items.

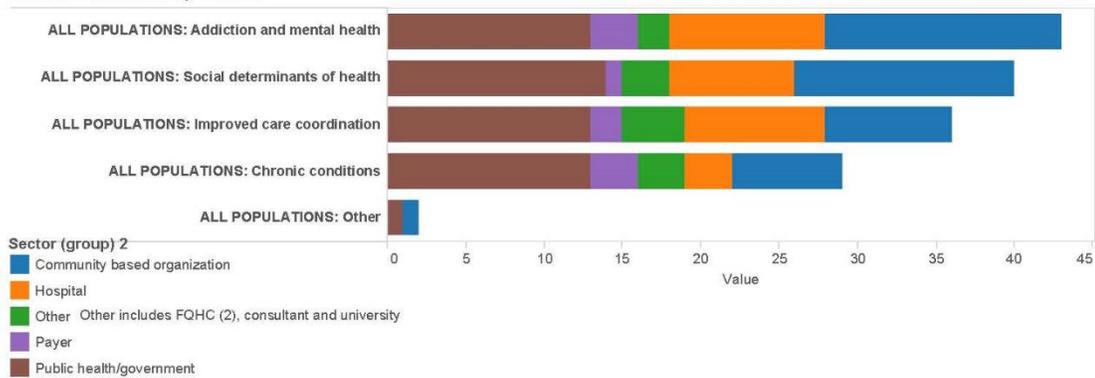
Global Priorities



Global Priorities by Geography



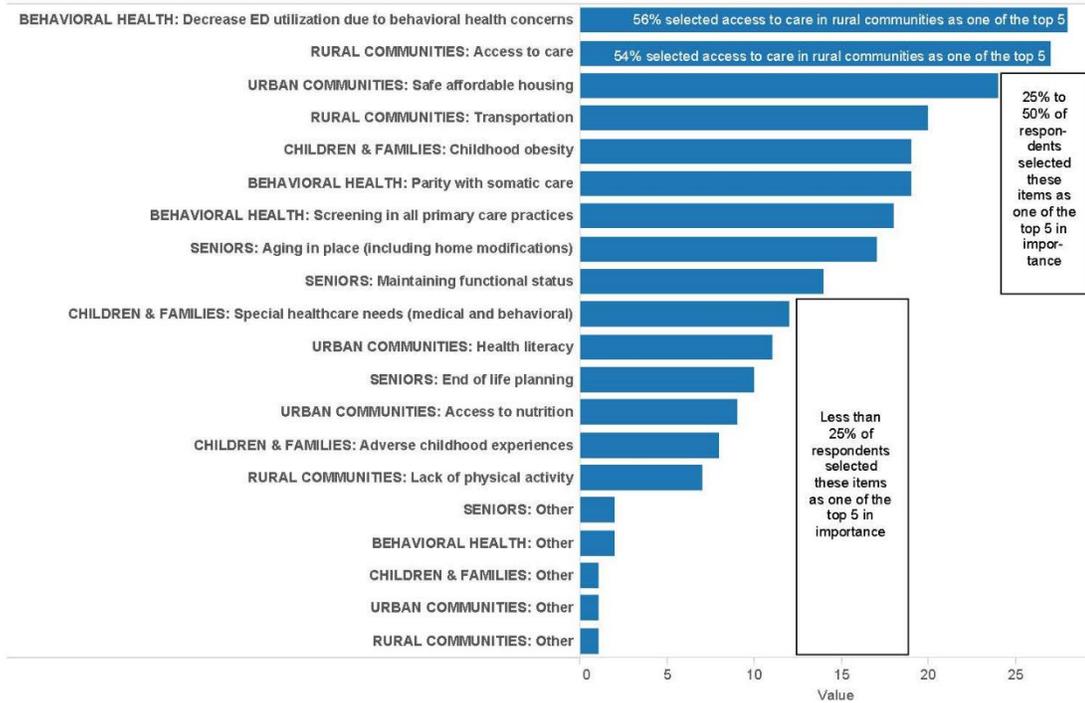
Global Priorities by Sector



Focused Priorities Overview

Respondents were asked to select 5 items across 5 population groups based on predetermined priorities developed by workgroups at the Summit. They could also write in one additional item in each of the population groups rather than selecting from the list.

Focused Priorities



Responses were distributed remarkably evenly across the 5 population groups, although respondents could have selected up to 4 of their 5 responses in a single population group:

Behavioral health	67 responses/27% of total
Rural	55 responses/22% of total
Urban	45 responses/18% of total
Seniors	43 responses/17% of total
Children & families	40 responses/16% of total

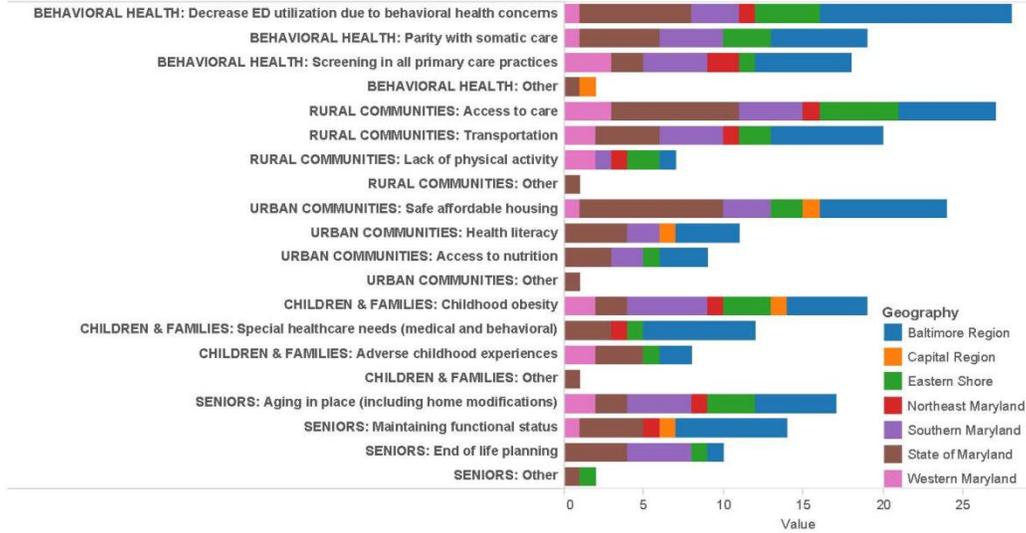
Focused Priorities Other



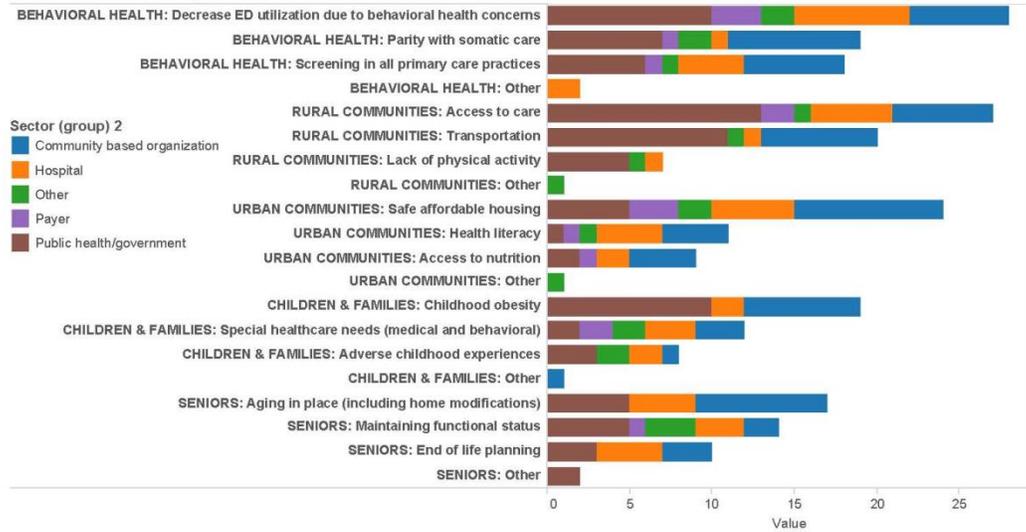
Focused Priorities by Geography & Sector

Respondents were asked to select 5 items across 5 population groups based on predetermined priorities developed by workgroups at the Summit. They could also write in one additional item in each of the population groups rather than selecting from the list.

Focused Priorities by Region



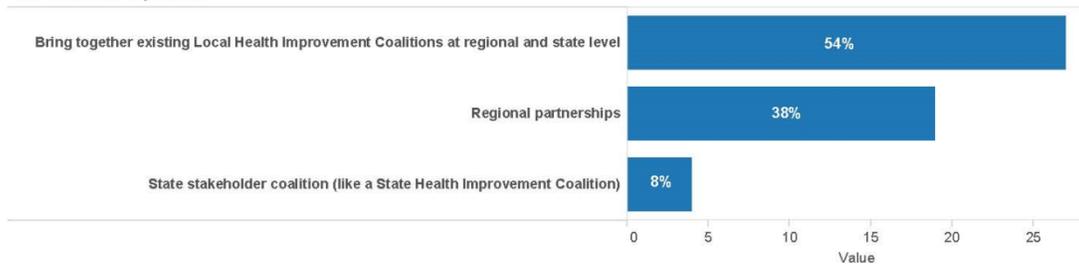
Focused Priorities by Sector



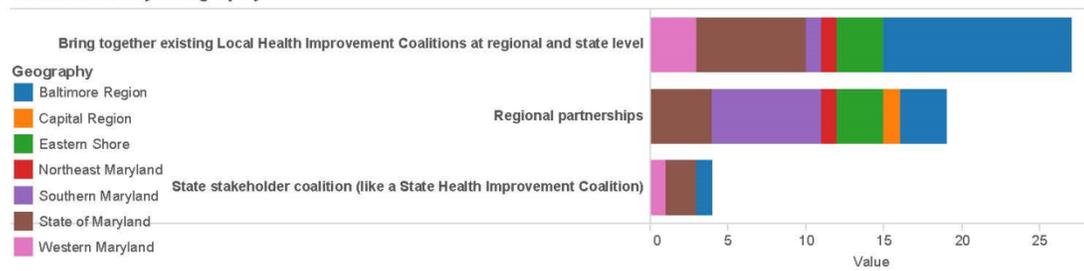
Governance

Respondents were asked to select the preferred structure for shared decision-making on long-term population health improvements at the state and regional level in Maryland. Although a write-in choice was provided, no one used that option, nor did anyone select the "state government" option.

Governance Options

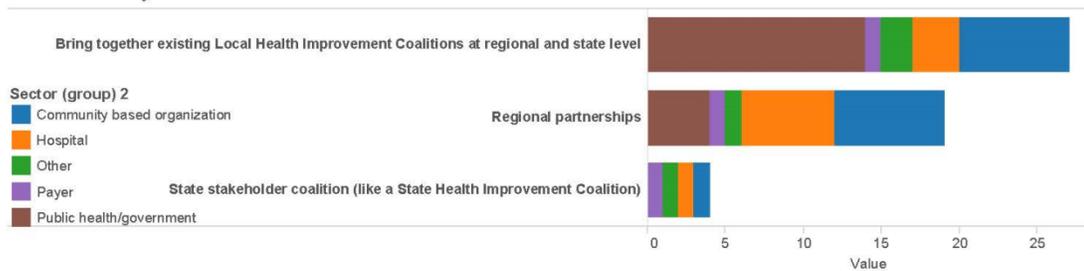


Governance by Geography



88% of respondents from Southern Maryland prefer regional partnerships, while 75% of respondents from the Baltimore region and Western Maryland prefer bringing LHICs together at a regional/state level.

Governance by Sector

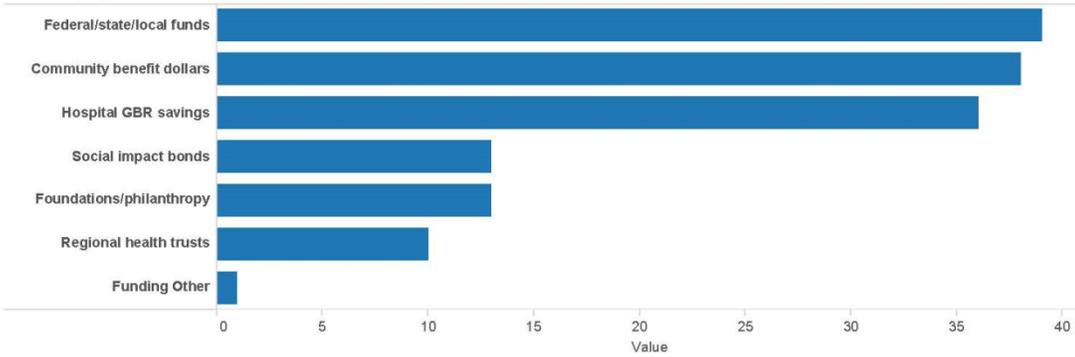


78% of respondents from the public health/government sector prefer bringing LHICs together at a regional/state level, while 60% of hospital respondents prefer regional partnerships. Respondents from community based organizations "split" their preference across both options.

Funding

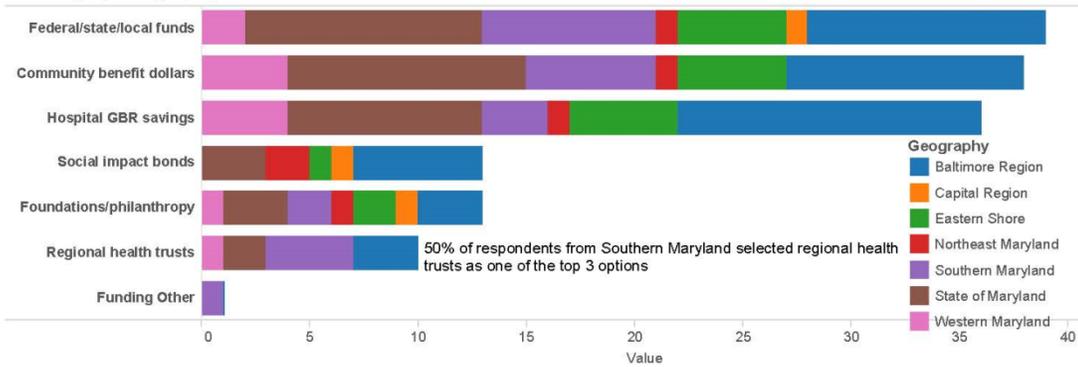
Respondents were asked to select 3 items from a list of 6 choices plus a write-in option to prioritize the funding options that would be most effective for improving the health of Maryland residents.

Funding Options

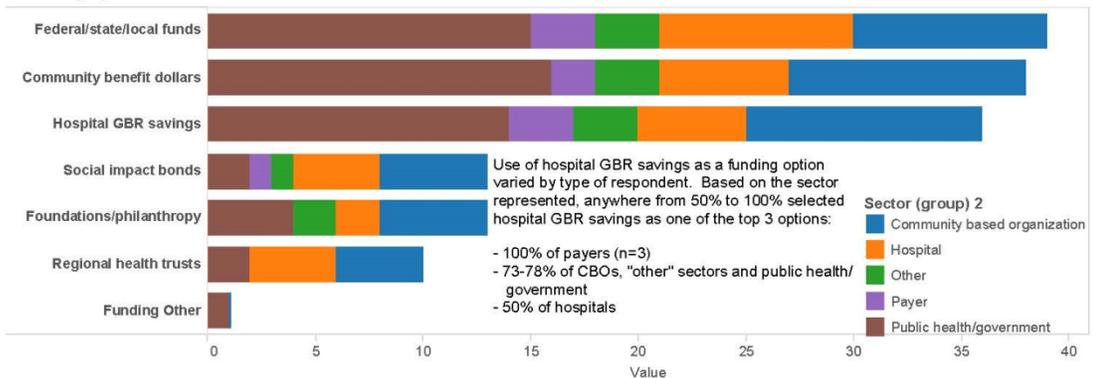


72% to 78% of all respondents picked the top 3 options above as the most effective sources of funding. The 1 respondent who selected "other" wrote in *other sources aren't as sustainable*

Funding by Geography



Funding by Sector



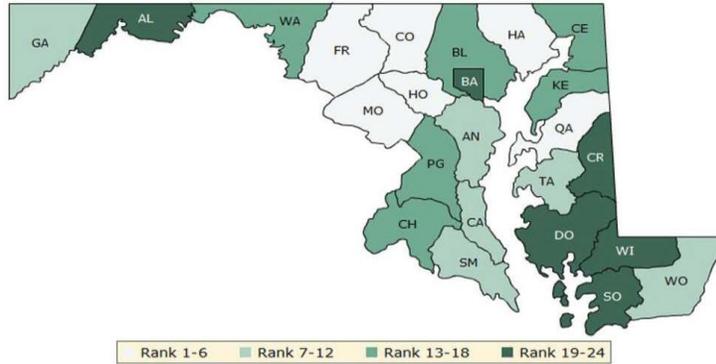
Appendix G: Maryland Health Ranking Report – State of Maryland²⁹

County Health Rankings 2016: Maryland

HOW DO COUNTIES RANK FOR HEALTH OUTCOMES?

The green map below shows the distribution of Maryland's **health outcomes**, based on an equal weighting of length and quality of life.

Lighter shades indicate better performance in the respective summary rankings. Detailed information on the underlying measures is available at countyhealthrankings.org.



County	Rank	County	Rank	County	Rank	County	Rank
Allegany	19	Carroll	3	Harford	5	Somerset	22
Anne Arundel	9	Cecil	17	Howard	2	St. Mary's	10
Baltimore	14	Charles	13	Kent	18	Talbot	8
Baltimore City	24	Dorchester	21	Montgomery	1	Washington	15
Calvert	7	Frederick	4	Prince George's	16	Wicomico	20
Caroline	23	Garrett	11	Queen Anne's	6	Worcester	12

³ www.countyhealthrankings.org/maryland

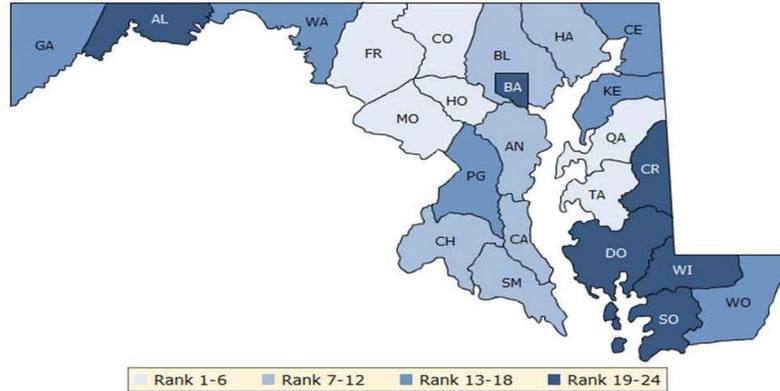
Source: http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2016_MD.pdf

²⁹ http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2016_MD.pdf

HOW DO COUNTIES RANK FOR HEALTH FACTORS?

The blue map displays Maryland's summary ranks for **health factors**, based on weighted scores for health behaviors, clinical care, social and economic factors, and the physical environment.

Lighter shades indicate better performance in the respective summary rankings. Detailed information on the underlying measures is available at countyhealthrankings.org



County	Rank	County	Rank	County	Rank	County	Rank
Allegany	19	Carroll	3	Harford	9	Somerset	23
Anne Arundel	7	Cecil	17	Howard	1	St. Mary's	10
Baltimore	11	Charles	12	Kent	13	Talbot	6
Baltimore City	24	Dorchester	21	Montgomery	2	Washington	18
Calvert	8	Frederick	4	Prince George's	16	Wicomico	20
Caroline	22	Garrett	14	Queen Anne's	5	Worcester	15

Source: http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2016_MD.pdf

Appendix H: Progress Measurement and Opportunities for Expanded Datasets

Maryland’s State Health Improvement Process (SHIP) was implemented in 2011 by the Office of Population Health Improvement (OPHI) as a framework for accountability, local action and public engagement to advance the health of Maryland residents³⁰. The goal was to assist communities in identifying critical health needs and guide implementation of evidence-based strategies for change, using a statewide platform for measuring progress. The framework was designed to align closely with Healthy People 2020 objectives, and measures have been both added and removed since program inception. The measures are heavily focused on children and adolescents:

- 15 measures (38%) apply exclusively to newborns, children and adolescents (some other measures also include this population)
- 1-2 measures focus on issues specific to the senior population (dementia-related hospitalizations and fall-related mortality)
- None of the measures focus on the “at risk” population of people with multiple chronic conditions and the complex needs of that population segment

The State revised the SHIP framework to now incorporate 39 measures in five focus areas:

- Healthy Beginnings – 8 measures
- Healthy Living – 8 measures
- Healthy Communities – 7 measures
- Access to Health Care – 4 measures
- Quality Preventive Care – 12 measures

As Maryland transitions to a total cost of care model (Phase II), the State will want to adopt more expanded constructs to align with these targets of population health management and health improvement. For example, Maryland may want to include measures of functional status, rate of falls, caregiver experience, affordability, community-based service needs, smoking status, etc.. More broadly, DHMH will need to document cost of care experience for those served by new initiatives for population health improvement.

It is critical to expand the measurement tools need to be expanded to be consistent with the goals of addressing social determinants of health and the multisector impact of selected initiatives; this would include the impact on school readiness, the criminal justice system, road safety, and social services. In order to monitor progress and the cost impact of selected initiatives, then, DHMH will require data exchange with law enforcement, Department of Education, and the Medicaid program.

OPHI has engaged the Johns Hopkins School of Public Health’s Center for Population Health Information Technology to assist with a detailed assessment and consideration of future measurement frameworks and metrics. For purposes here, a brief description is provided simply to illustrate expanded

³⁰ <http://dhmh.maryland.gov/ship/pages/home.aspx>

measurement constructs/features that have developed around the country and the value that these new constructs provide.

Organization or Program	Title	Details
Robert Wood Johnson Foundation (RWJF)	Culture of Health Action Framework	A framework and 41 corresponding measures designed to improve population health and motivate cultural change that builds a shared value of health and an integrated cross-sector approach. The framework consists of four action areas and one set of desired outcomes
Robert Wood Johnson Foundation (RWJF) & University of Wisconsin Population Health Institute (UWPHI)	County Health Rankings	The County Health Rankings helps communities identify and implement solutions to improve health in neighborhoods, schools, and workplaces. There are four domains and 14 focus areas in the framework
National Academy of Sciences, Institute of Medicine (IOM)	Vital Signs: Core Metrics Set	Based on IOM Committee work, this framework defines core measures for health and health care designed to streamline and standardize the multiple measurement sets in use across the United States. The Committee proposed a set of 15 standardized measures in four domains.
The Commonwealth Fund	Commonwealth Fund Scorecard on State Health System Performance	The scorecard measures performance in five areas and introduces a number of community-based measures improvements in functional status of the elderly, use of antipsychotics and high risk medications and measures of long term supports. The scorecard also includes equity indicators based on race, ethnicity and income.
Agency for Healthcare Research and Quality (AHRQ)	Quality measures	Includes 250 quality measures and comparisons across states. Includes access and care coordination measures; includes metrics around disease-specific conditions; includes measures for mental health conditions among nursing home patients and completion rates for those in substance

		<p>abuse treatment. New focus areas proposed include:</p> <ul style="list-style-type: none"> · Functional status in older adults · Health literacy/patient engagement
CMS: Medicare Program	Medicare Shared Savings Program	<p>Shared savings are awarded based on performance across 34 quality measures in 4 domains that include (1) Patient/caregiver experience (2) Care coordination/patient safety (3) Clinical care for at-risk populations and (4) Preventive health. Notable measures include such items as functional status, falls prevention, shared decision-making and access to timely appointments</p>
CMS: Medicare Advantage	Medicare Advantage Plans / Special Needs Plans	<p>The STAR ratings framework is designed around 5 broad categories that include health outcomes, intermediate outcomes, patient experience, access, and process by which health care is provided. Performance measures have been well-vetted nationally, with measures that include those related to medication adherence and care transitions.</p>

Appendix I: Stakeholder Comments

As part of the Plan's drafting process the Office of Population Health Improvement provided a draft of the Plan to internal and external stakeholders throughout the State, with the intent of gathering feedback via a questionnaire and the opportunity to submit additional commentary. The questionnaire consisted of six questions, listed below. Questionnaire responses and general commentary have been reformatted, edited and summarized into outline format with general topic headings for ease of review. Similar comments have been combined, and comments of specificity relating to Plan language and content have been addressed in edits to the document, rather than below. Responses to the public comment are done in broad categorical terms rather than on a comment-by-comment basis, however the Office of Population Health Improvement welcomes further engagement on these topics.

A. Questionnaire, Stakeholder Commentary/Questions and Responses

1a. Please comment on whether or not the plan sufficiently explains how the goals align within the overarching effort of healthcare transformation in Maryland (i.e. with the all-payer model).

Health Equity

Health equity has been further defined in the Population Health Improvement Plan as an essential element that must be addressed when considering advancing population health improvement over the long term horizon. Specific investments and data indicating the extent to which health inequities exist in the State of Maryland is outside the scope of this Plan, however it is anticipated that the future work suggested will require such data to be presented.

Stakeholder comment: Health Equity specifics are lacking and need bolstering.

Stakeholder comment: Absence of data presentations stratified by place and race/ethnicity suggests that health equity has not been seriously considered in plan formulation.

Program/Entity Overlap and Alignment

The Population Health Improvement Plan has added further discussion of how this Plan fits into larger health care transformation efforts, models, and goals for the State of Maryland orienting the Plan as a longer term outcome for the efforts and goals of health care transformation in the State of Maryland. Specific roles for differing entities within the Plan are, however, not outlined but are outside the scope of the Plan. Future work will require that roles be specified and will require stakeholder engagement to further define where entities and stakeholders see themselves.

Stakeholder question: Not clear how local health departments fit into transformation efforts, especially Phase II. Are local health departments seen as connectors, payer, advisers or implementators?

Stakeholder comment: Plan does not address overlap between multiple, competing initiatives, nor suggest how can/should be coordinated and or consolidated.

Stakeholder comment: Plan requires cooperation of public/private entities that have no established record of working to achieve unified outcomes.

Stakeholder comment: Focus on alignment, particularly with all payer and total cost of care will be a critical next step.

Financing

The Population Health Improvement Plan has added language clarifying the role of the Plan within the larger health care transformation efforts occurring within the State of Maryland. Please note that this explanation requires a discussion of the Maryland All-Payer Model which heavily implicates the role of hospitals, however language is added to clarify that the Plan looks to support those efforts through providing a framework and initial steps for a process prioritizing population health priorities rather than defining what entity or stakeholder role there is in any given priority area.

Stakeholder comment: Little explanation of how hospitals can be taken out of financing role for population health improvement. Plan will need to acknowledge current State financial paradigm and how to change it.

Stakeholder comment: Extensive focus has been placed on population health management, which will require major funding investment. It is difficult to grasp how primary care model/other plans fit into this one.

Stakeholder comment: Inpatient and outpatient solvency is not clearly assured in discussion.

Specific Goal Omission

Detailed discussion of these topics is now outside the scope of the Population Health Improvement Plan. Topics are mentioned briefly and generally in the prevention concepts outlined throughout the Plan. Future work will require more robust consideration of these topics by appropriate stakeholders.

Stakeholder comment: Plan fails to elevate housing, transportation and employment to adequate level of priority.

Stakeholder comment: Healthcare workforce development is important to healthcare transformation and population health improvement.

Plan Reorganization

More robust detail and discussion has been added to the Maryland background to provide better context for where the efforts of the Population Health Improvement Plan interact with broader health care transformation efforts in the State of Maryland.

Stakeholder comment: Provide brief Maryland background (global budgets, alignment, triple aim, population based and patient-centered care).

Stakeholder comment: Bring plan goals to forefront of document.

Plan Accessibility

Language and context has been simplified for stakeholder consumption and references have been incorporated to provide the reader with further explanations of concepts.

Stakeholder comment: Plan does not lend itself well to ease of public consumption.

Stakeholder comment: In some instances, Plan text is not clear enough for the public or even those with a limited understanding of healthcare transformation efforts.

1b. *Please comment on whether the explanation of population health improvement versus population health management and the three bucket approach is clearly and consistently incorporated throughout the plan.*

Population Health Improvement (PHI) and Population Health Management (PHM)

The Population Health Improvement and Population Health Management conversation has been adjusted to clarify the fluidity of the concepts, the interaction of them, and offers further discussion regarding the nuance of the concepts and why the Plan focuses more on Population Health Improvement rather than Population Health Management.

Stakeholder comment: Definitions and distinctions between PHI and PHM are not clear; cannot find definitions in cited sources.

Stakeholder comment: PHI is measurable outcome. If term refers to process or intervention, use term PHI program (or strategies/model/intervention/etc.).

Stakeholder comment: PHM overestimates degree to which managers actually have control of population health; Managers may influence/enable population health by policy/persuasion; perhaps what is meant is “population health program/system management.”

Stakeholder question: Classification of HSCRC regional partnerships is confusing, as portrayed- for example, are they being characterized as management, improvement or both?

Stakeholder comment: PHI and PHM distinction is different than as stated; document “overplays” PHI and “underplays” PHM.

Stakeholder comment: PHI is: 1. For the entire population (not payer specific), 2. Longer term (willing to invest for longer), 3. Addresses societal costs (not just acute care, could be LTC, workforce, impact on family, etc.); PHI is bigger circle, which wraps around PHM, because Phm is “unwilling/not incented” to address.

Stakeholder comment: Misattribution of items to PHI, rather than PHM...document needs careful reading to avoid attribution to PHI and suggest they are not part of PHM.

Stakeholder comment: Distinction between PHI and PHM is critically important, because under global budget system, the hospitals have incentive to do PHM, and “great PHM” should not be understated. PHI over attribution makes it seem that such misattributed initiatives are out of hospitals’ control.

3 Buckets of Prevention Framework

Specific priority areas and accompanying interventions are now outside the scope of the Population Health Improvement Plan. The 3 Buckets of Prevention has added conversation about the fluidity of each buckets definition and explicitly notes that the intent of the approach is conceptual and meant to offer guidance rather than rules.

Stakeholder comment: Would have preferred to see all three buckets referenced under each priority; always identifying the connection (or lack thereof) between the “traditional clinical prevention strategies” and the “innovative” to keep top of mind.

Stakeholder comment: Focus needs to be on “innovation” within the “traditional” clinical setting-meaning, innovative clinical prevention is not limited to only those provided “outside the clinical setting.”

Stakeholder comment: Application and distinction in practice between PHM/PHI and 3 buckets framework will sometimes be more challenging. In particular relating to identify “target population” with respect to bucket 2 versus bucket 3, and this will likely link to financing approaches. Notwithstanding examples in performance matrix section, presentation as more cohesive strategy could be advantageous.

Stakeholder comment: The third bullet of bucket 2 should not say “rather than one-to-one” as such a statement leaves no place for patient centric non-traditional care management, except in bucket 3, which is for the entire population; ...bucket 2 should not exclude one-to-one. Under the global budget system, hospitals should be doing one-on-one care management, especially under phase 1 and 2 of the model.

Stakeholder comment: While buckets 1 and 3 are clearly defined, while bucket 2 is harder to determine due to the overlap between buckets 1 and 3.

Stakeholder comment: While the Plan defines how it determines what strategies are placed in each bucket, when it is put into practice (see Prioritization Matrix Framework Detail) the placement of the strategies and the definitions of th buckets do not always coincide.

Stakeholder comment: If a priority does not have one of the buckets, it should still have a bucket indication and have N/A.

Stakeholder comment: Some difficulty categorizing some of the current and proposed programs into the proper bucket...buckets as defined in the document aren't clear on where certain programs should fit (e.g. programs offered in partnership with faith-based organizations)

Application of PHI/PHM Distinctions and Bucket Framework

Specific priority areas and accompanying interventions are now outside the scope of the Population Health Improvement Plan.

Stakeholder comment: Difficult to utilize and implement for some regions with sole hospitals, limited resources and lack of partners within the community.

Stakeholder comment: It appears that a great deal of explanation was used in order to avoid saying the phrase "public health."

- 2a. *Please comment on whether it is clear how the population health plan framework should be used to think through investment priorities by different entities (e.g., state, private, hospital, community-based organization consumer).*

Prioritization

Specific priorities, accompanying interventions, and return on investment/net savings calculation are currently outside the scope of the Population Health Improvement Plan. Discussion of potential ways to address the financing of population health improvement are discussed in future work.

Stakeholder comment: Increasing access to bucket 2 may be misguided; to the extent that bucket 2 is provision of clinical services in non-clinical settings, it may be more costly to create extra-curricular clinical service systems than to assure access to existing clinical service systems.

Stakeholder comment: To extent prioritization is based on ROI in a FFS hospital payment model, ranks may be irrelevant in Maryland with global budget models.

Stakeholder comment: Prioritization matrix (p. 25) does not show process by which scores were produced, only results. Unclear what data and what process produced results. Chart is untitled and not captioned.

Stakeholder comment: List of strategies/interventions associated with health outcome rankings do not list the cost per number of persons reached, or the cost per number of adverse elements averted. Consideration of price tag is essential to determine feasibility.

Stakeholder comment: From hospitals' perspective, framework is complicated by multiple competing programs and mandates that must be factored into any decisions regarding investment priorities (eg. HSCRC mandates).

Stakeholder comment: Cooperation between public, private and healthcare organizations is an unproven variable in this Plan

Stakeholder comment: Refinement of priorities specific to Medicare population may be appropriate when State is provided full Medicare claims data. State should continue to pursue all

avenues to ensure access to all relevant, comprehensive and real-time data which will inform on a regular basis the characteristics and needs of populations served.

Stakeholder comment: One can imagine prioritization methodology will be refined in time.

Stakeholder comment: Prioritization matrix as presented could be useful, but not well explained in document.

Stakeholder comment: While apparent the CHNAs were used to rank conditions based on number of hospitals who reported them, ranking adjustments are opaque and gives appearance of subjectivity.

Stakeholder comment: There is some confusion as to the scoring attributed to items in the prioritization matrix (some items get 0s that should not; some with 1s should get 2s; key priorities under Maryland model, including chronic disease, care coordination/management, co-occurring disease and health inequities are assigned 0s despite their importance.

Engagement and Alignment

The Population Health Improvement Plan has added further discussion of how this Plan fits into larger health care transformation efforts, models, and goals for the State of Maryland orienting the Plan as a longer term outcome for the efforts and goals of health care transformation in the State of Maryland. Specific roles for differing entities within the Plan are, however, not outlined but are outside the scope of the Plan. Future work will require that roles be specified and will require stakeholder engagement to further define where entities and stakeholders see themselves.

Stakeholder comment: For Plan to be successful, more “public utility” types of resource models may be required.

Stakeholder question: Mechanisms for alignment aren’t entirely clear. What are the incentives for different entities to align priorities?

Stakeholder comment: Plan does not clearly demonstrate how framework should be used by different settings.

Stakeholder comment: Not clear how community-based organization would implement plan; plan is heavily swayed towards how hospitals should implement.

Stakeholder comment: Existing hospital initiatives with proven outcomes are not documented.

Stakeholder comment: While Plan provides examples of how different entities may engage for successful collaboration, there needs to be a centralized data warehouse to show multifaceted engagement, with time allocation, multidimensional outcome metrics which may affect different aspect of collaborating entities.

Stakeholder question: How will local government be engaged and support these initiatives?

Stakeholder comment: State needs to invest in MD recruitment for underserved areas for specific guidelines in population health, tying good performance to student loan forgiveness and higher reimbursement rates.

Stakeholder comment: While hope of using some dollars saved out of PHM for PHI is understood, neither concept nor methodology was developed adequately.

Section Clarity

Language and context has been simplified for stakeholder consumption and references have been incorporated to provide the reader with further explanations of concepts.

Stakeholder comment: This document is well written for people who understand the waiver

Stakeholder comment: Clarity of section depends on readers' existing knowledge.

2b. *Please comment on whether the prioritization matrix and accompanying emerging and existing strategies appropriately highlight examples of innovative clinical practices. Is it clear that the examples are not comprehensive but meant to be illustrative?*

Examples

Thank you for these suggestions, currently specific priority areas, interventions, and return on investment are outside the scope of the Population Health Improvement Plan and will be considered with stakeholder participation with regards to the future work section.

Stakeholder comment: Given State's efforts to integrate mental health and substance use, suggest combining 2 areas into single priority.

Stakeholder comment: it isn't clear that the examples are just illustrative; could be made more so in the tables by stating: "examples" then the list.

Stakeholder comment: Not clear examples in prioritization matrix were examples; not labeled as such

Stakeholder comment: Only some existing practice examples provided in prioritization matrix and strategies can be characterized as emerging innovations.

Stakeholder comment: Not as clear that the examples were meant only to be illustrative.

Stakeholder comment: Clear roadmap with articulation of accountable parties and a financing model would be an important next step in making Plan less theoretical.

Stakeholder comment: Plan lacked innovativeness around moving from a patient-centered approach to a community centered health home approach that effectively bridges community prevention and health service delivery.

Stakeholder comment: Plan did not create strategies that build upon the health centers to incorporate community change and advocacy more systematically and comprehensively into their practices.

Stakeholder comment: Plan lacked innovative strategies for community mobilization and engagement.

Stakeholder comment: Examples of emerging and existing strategies in Maryland seem to focus in and around Baltimore. Nice to see more examples from across the State and an emerging strategy that address opioid addiction/overdose.

Stakeholder comment: While clear that examples are not comprehensive, complete lack of any text or examples of healthcare workforce development strategies is inappropriate in this context and a missed opportunity

Stakeholder comment: Does not clearly indicate examples are only that, may want to add clarifying language and quantify as “promising practice,” “best practice,” etc.; would be nice to provide links to have easy access to information.

Stakeholder comment: Concerned with trying to do too much too quickly with limited resources in rural communities and community engagement challenges.

Stakeholder comment: Need support and engagement of local government to fund re: transportation school based programs

Suggested Edits

The Harvey Ball rating has added language to present the categories that should be considered however does not prescribe the weighting. It is suggested in the document that both specific strategies and their associated Harvey ball ratings be conducted by a specific stakeholder entity and those conducting/responsible for the strategy.

Stakeholder comment: Could sources of evidence base be referenced for strategies in links?

Stakeholder comment: Harvey ball ratings not labeled with a key.

Response Time

There will be continuous opportunities for stakeholder comments and participation.

Stakeholder comment: Short turnaround time for comments.

2c. Please comment on whether or not the net savings analysis and accompanying explanation resonate with your entity? Is there a value proposition, based on the framework presented in this net savings analysis, for your organization or for the population you serve?

Net Savings/Return on Investment (ROI)

Specifics of return on investment calculation for a particular intervention or priority area and the accompanying net savings specifics are outside the scope of the Population Health Improvement Plan. There is additional language discussing the difference and the nuances that should be considered when doing Net Savings and Return on Investment calculations. Financing and determining an appropriate balance of investment and type of investment requires future work and is outlined in the respective section in the Plan.

Stakeholder comment: Issue with net savings analysis, in that global budgets for hospitals have reversed paradigm. All saving estimates come out of hospital fee-for-service paradigm, and are based on “cost” being price paid by payers per service.

Stakeholder comment: There is little marginal savings to be had at the hospital production cost level from small increments of volume reduction.

Stakeholder comment: Potential risk of ROI analysis is that it might be comparing one entity’s return to another entity’s investment. To make investment happen, return has to accrue to the entity making the investment.

Stakeholder comment: Analysis doesn’t resonate very well because analysis is limited to short-term benefits. Institutions seeking long-term benefit in a particular population might invest in programs that yield no measurable savings in short term.

Stakeholder question: May ROI be limited due to rural population/geographies, population access to care/care providers access to population?

Stakeholder comment: In order to truly measure impact, all components across continuum of care need to be captured and all “savings” must be reflected for all entities to keep them engaged.

Stakeholder comment: Lack of evidence-base for ROI in obesity prevention in document.

Stakeholder comment: While net saving analysis does resonate conceptually, no real savings has been reinvested in the community as yet.

Stakeholder comment: Certain entities, such as School Health Programs, will not reap direct monetary benefits under analysis unless programs begin operating as fee-for-service.

Stakeholder comment: Majority of proposed scenarios demonstrate “hospital utilization” savings, that usually take many years to achieve. At the same time, an aging population requiring more acute services may actually increase hospital utilization.

Stakeholder comment: Net savings analysis section a bit dense.

Stakeholder commentary: Net savings section would be strengthened by identifying types of workers that are necessary in the model to deliver the interventions as this may allow entities to better determine where existing infrastructure/personnel could be leveraged for work that they are not currently engaged in.

Funding

Specifics of return on investment calculation for a particular intervention or priority area and the accompanying net savings specifics are outside the scope of the Population Health Improvement Plan.

There is additional language discussing the difference and the nuances that should be considered when doing Net Savings and Return on Investment calculations. Financing and determining an appropriate balance of investment and type of investment requires future work and is outlined in the respective section in the Plan.

Stakeholder comment: Right mix for balanced portfolio producing ROIs is unknown. ROI for population health improvement programs are difficult to calculate due to large numbers of unknowns.

Stakeholder comment: Costs associated with the use of case studies and literature reviews, coupled with start-up costs, regional differences, organizational infrastructure all play an integral part in ROI and are not factored in the net savings analysis examples.

Stakeholder comment: Given time taken to change unhealthy behaviors, difficulty in attributing long-term cost savings beyond 3 years to specific short-term preventions and programs and layered causal and mitigating factors for diseases and conditions, consideration should be made for stating business case with following economic variables: healthcare spending through lowering need and demand for health care; reduced illness burden leading to improved function and associated cost savings; impact on policy changes that make healthy choices the easy choice, and impact on taxes, utilization and overall disparities.

Stakeholder comment: Soft process measures that can impact ROI for defined populations should be considered, including: employee retention and absenteeism, quality of life, participant retention and quality measures.

Stakeholder comment: Plan needs to have examples of ROI that are more inclusive of the other stakeholders (local health departments, LHICs, etc.)

Stakeholder comment: Current net savings analysis, that highlights hospitals receiving majority of net savings, sets expectation should finance long-term strategies because they will benefit most. However, long-term strategies might not yield a positive ROI, and cost associated with all partners should be considered.

Stakeholder comment: Plan alludes that hospitals cannot bear costs for all community-based approaches and that other resources are required to support infrastructure, implementation and sustainability. These should also be considered in the ROI.

Stakeholder comment: Request inclusion of language of the impact of investments in skill training as well as the impact of increased wages among healthcare workers to improve health.

Stakeholder comment: Doing too much too fast may create sustainability challenges.

Stakeholder question: Need elimination of market shift penalties, which are not in entity control and can be the result of a lack of access points to specialty care.

Stakeholder comment: For counties with all volunteer EMS, paid EMS/Paramedics are required for home visits.

Stakeholder comment: Did not resonate from perspective of public health; could have been stronger in clarifying what was seen as public health role.

Response: Stakeholder comment: Continued reliance on hospitals for the majority of the funding is worrisome. All programs in current transformation rely on savings generated from reductions in hospital care, while certain hospitals are not seeing dramatic reductions in volume, despite strong interventions to reduce readmissions.

Stakeholder comment: Problems that lead to poor health outcomes in Maryland are complex and multi-factorial, whole solutions must be equally multifactorial, and likely require investment beyond what is anticipated. High probability that will all programs laying claim to hospital dollars, there will not be adequate funding for these initiatives.

Stakeholder comment: Not clear in document what the “ask” is in terms of funding needs to support the priority areas-what kind of additional infrastructure.

Stakeholder comment: Health systems have undergone huge transformations under global budget revenue models, and have to commit resources to many mandates, and address increasing costs (particularly in pharmaceuticals and supplies/equipment). Environment limits resources any healthcare organization has to commit to prescribed mandates.

3a. *Please comment on whether the proposed next steps are sufficient in order to accomplish the goals of identifying a diverse set of funding streams in order to fund population health improvement activities in Maryland.*

Funding

Financing and determining an appropriate balance of investment and type of investment requires future work and is outlined in the respective section in the Population Health Improvement Plan. All of the elements of sustainable financing in the future work section look to provide suggestions that require further exploration for feasibility and appropriateness. This will require stakeholder engagement and experts in the fields of the financing areas suggested.

Stakeholder comment: Issues with suggested funding streams: **Hospital Community Benefit Dollars:** often this is not real money, rather it represents an actuarial valuation of services provided by a hospital and its staff for general community benefit; **Pay-for Success/Social Impact Bonds:** terrible way to fund ongoing operations; **Community Development Financial Institutions Fund:** this needs more description and citations. Like bond, organizations that certify as CDFI might make capital and short-term investments, but are unlikely to fund ongoing operations; **Financial Institutions:** will not fund ongoing operations to provide services to those who can't afford the services; **Large Area Employers:** investments limited to the places where their employees live; **Foundations and Other Philanthropic Sources:** could work for closed-end development projects, but unlikely to be source of ongoing operational support; **Taxes**

to Discourage Unhealthy Behavior: depends on political will, with very limited impact as a deterrent, unclear if certain sums can be raised to fund other projects.

Stakeholder question: Which stakeholders will reap the benefits of population health programs, and which stakeholders have the discretionary funds to make these investments in population health programs? This is the primary question to the practical implementation of these ideas, and is least well described in the document, leaving a number of unanswered questions regarding practical implementation.

Stakeholder comment: Suggest adding a deeper analysis of benefits and challenges of each type of funding stream.

Stakeholder comment: Funding streams appear accessible, but in practice the funding models may not be attainable for certain organizations.

Stakeholder comment: Design work does not address the increase responsibility providers will be taking on for the health of the population, care outcomes and total cost of care. This seems to be antithetical to the conceptual model portrayed in this paper, which moves from PHM to PHI.

Stakeholder comment: The heavy lift of the plan will be the continual connecting of the Health Improvement Plan to the mandates of health care delivery and payment reform, so as to once and for all connect the work of delivering health care to achieving population health and ensure focus and funding in support of public health efforts that directly address the health care crisis of inadequate outcomes to justify cost.

Stakeholder comment: The actual linkage between potential funding sources for the population health activities and the incorporation of measurement and outcomes to more traditional healthcare delivery and the all payer models in practice, and then the prioritization and financing of the work will likely remain both an important opportunity and challenge.

Stakeholder comment: Next steps are logical but dependent on stakeholder buy-in and participation.

Stakeholder comment: The model that includes the reinvestment of saving to achieve, improve health outcomes demonstrates an ROI that cannot be accurately calculated, therefore it is difficult to determine if the model is actually sustainable over time.

Stakeholder comment: Next steps necessary to fund actionable strategies at the state and local level are not well stated. Suggestion for improving the next steps would be to add a process for decision making around access to funding streams and reinvestment, and add a timeline by which the process should occur.

Stakeholder comment: Key strategies need to be delineated on how other resources will be leveraged and which priorities will need additional funding support. Not clear which and how various funding sources will specifically support the priorities.

Stakeholder comment: Section would be more tangible if examples of successful programs were highlighted. For example, successful community benefits programs that are addressing one of the 5 priority areas, or Pay for Success/Social Impact Bonds.

Stakeholder comment: While this assessment does not include the major investments that are anticipated in community awareness campaigns, including health education, community mobilization and outcomes reporting, these activities are critically important to support community mobilization and engagement, as well as to address the social determinates of health. It would behoove this plan to explicitly state that funds will be allocated to support these efforts.

Stakeholder comment: Maryland should convene stakeholders leverage Federal, State and private funds to prepare the people delivering health care to transition up the healthcare career ladder.

Stakeholder comment: increasing wages of healthcare workers will improve the quality of care delivering in facilities and improve health in communities.

Stakeholder comment: Alignment of entity priorities and corresponding community benefit dollars has loosened in the Plan's various iterations.

Stakeholder comment: Key pieces missing from plan: interoperability between multiple EMR/EHR hospital data management platforms and the link of patient information with participant information, to capture the whole person engagement across buckets and entities; provide centralized data repository with standardized data sets and outcome measures, which will help with consistency in measurement across counties and break down data silos. Be able to run e-queries to obtain data; would like to see insurance carriers work more closely with hospital prevention and well department to provide face-to-face prevention and wellness services for closer to patient and/or employee; experience better compliance with adhering to health lifestyle behavior programs and engagement in annual health risk assessments; would like to see more encouragement from pharmaceutical companies to assist with access to medical supplies and/or maintenance medication. Provide a way to access items wholesale for indigent population, and partner with health systems to strengthen process; not only have incentives, but have disincentives for entities not willing to engage.

Stakeholder comment: Concern about amount of work/resources required to meet goals, plus meet infrastructure needs.

Stakeholder comment: There are further potential sources of funding that would require state-level innovation. These include private behavioral health companies without presence in Maryland that could bring to bear their resources in the State in partnership with non-profit entities, and identifying and fast-tracking the process for those hospitals seeking to close inpatient facilities. Such actions would ensure savings capture for PHI.

B. Stakeholder Commentary

Plan Initiatives, Implementation and Financing Models

Financing and determining an appropriate balance of investment and type of investment requires future work and is outlined in the respective section in the Population Health Improvement Plan. All of the elements of sustainable financing in the future work section look to provide suggestions that require

further exploration for feasibility and appropriateness. This will require stakeholder engagement and experts in the fields of the financing areas suggested.

Stakeholder comment: Would like to see more concrete information on how the plan will be implemented and the discussed financing models. Will LHICs/Community Benefit need to focus on 5 priorities, as provided in the Vision for Implementation diagram?

Stakeholder comment: Unclear how model being proposed in the plan will be financed or implemented. It is essential that sustainable sources of funding for population health interventions be identified, both within state budgets as well as via incoming federal fund.

Stakeholder comment: Essential to articulate how separate implementations of distinct population health programs would be coordinated and integrated to ensure high quality care and eliminate duplication at both the local and state level.

Stakeholder comment: Plan can use a bit more information, clarifications or examples of the cost of doing PHI activities and how they are beneficial to the long-term outcome.

Stakeholder comment: Overall, there is a desire that it would not be the cost that drives the PHI but rather doing the right thing.

Stakeholder comment: While it is appropriate to identify ways that PHI can work in tandem with Maryland's All-Payer Model, hospital initiatives are only one tool to use to improve population health. Generally, population health improvement should focus on community-based initiatives and other investments. For longer-term public health investments, other strategies out of the hospital system need to be emphasized.

Priorities

Thank you for these suggestions, currently specific priority areas, interventions, and return on investment are outside the scope of the Population Health Improvement Plan and will be considered with stakeholder participation with regards to the future work section. More robust detail and discussion has been added to the Maryland background to provide better context for where the efforts of the Population Health Improvement Plan interact with broader health care transformation efforts in the State of Maryland.

Stakeholder comment: While plan acknowledges that racial/ethnic and socioeconomic disparities in health outcomes are notable manifestations of how social determinants impact individual and community-level health. The prioritization matrix, however, does not reflect this statement, as disparities received a score of 0. Recommend that the population health improvement plan includes a stated commitment to addressing health disparities across the state, therefore justifying local health interventions and hospital innovations that seek to close health outcome gaps for key populations within their jurisdiction.

Stakeholder comment: Some stakeholders strongly advocate for the inclusion of oral health as a priority area in the plan. There is deep concern that oral health is not included in the plan draft, given that oral health is a high-priority area for Maryland Medicaid, the Office of Oral Health and many local health departments and local health planning coalitions. Oral health is a critical component of overall health, and should be included in any health planning effort.

Stakeholder comment: One stakeholder noted that priorities were largely determined by input from hospitals, and urged a more inclusive process in future plan iterations with a larger range of consumers, safety net providers and community-based private clinical practices.

Stakeholder comment: Plan is primarily built with the goal of reducing hospital utilization. While appreciated, population health plans should reflect broader health outcomes. The report misses key opportunities to focus State efforts on improving health outcomes beyond those related to inpatient utilization. For children especially, population health goals should be long range, extend from childhood to adulthood and be linked to education goals.

Stakeholder comment: Persons living with serious illnesses and disabilities need to a bigger part of plan focus, as far as plan introduction and framing, rather than left to examples very late in the presentation

Stakeholder comment: A population health approach for people with disabilities needs focus on accessible housing and transportation.

Stakeholder comment: Unclear why asthma self-care is included, but self-care for other serious chronic conditions (COPD, CHF, neuromuscular disabilities, etc.) is not.

Net Savings and Return on Investment

Specifics of return on investment calculation for a particular intervention or priority area and the accompanying net savings specifics are outside the scope of the Population Health Improvement Plan. There is additional language discussing the difference and the nuances that should be considered when doing Net Savings and Return on Investment calculations. Financing and determining an appropriate balance of investment and type of investment requires future work and is outlined in the respective section in the Plan.

Stakeholder comment: One stakeholder noted discomfort with the inclusion of the table outlining costs and savings of the various strategies. As the plan notes it is not clear which localities would be able to mobilize any specific strategy and budgets have not been verified for any of the strategies. While costs may be estimated based on experiences in other case studies, these costs are not specific to Maryland, and would provide a reference to an unverified fiscal note specific to Maryland. Non-Maryland based cost and savings estimates could create false expectations if/when strategy is used.

Stakeholder comment: ROI calculations implicitly assume that timing of death is not affected by the course of care, while this is not always true and deserves a mention.

Stakeholder comment: Concern that, even though the plan specifically notes the difficulty of determining a financial return on many of the population health improvement initiatives, especially those that are more long-term, a good portion of the document is devoted to providing a Net Savings analysis. The Net Savings and ROI, while focused heavily on reductions in hospital utilization, appear to ignore global budget and their effect on hospital budgets, including the budgets' fixed/variable cost nature. This would impact the net savings. It is recommended that this section be eliminated or significantly modified.

Additional Commentary

Please see above responses addressing specific concerns regarding financing, how the Population Health Improvement Plan interacts with other health care transformation efforts, and future work.

Stakeholder comment: Report did not adequately illustrate how CBO plays a role

Stakeholder comment: Stakeholder did not understand whether the “horizon” in the document

Stakeholder comment: Stakeholder did not understand what was meant when referring to improving community health status in the “aggregate.” Is aggregate in terms of time frame?

Stakeholder comment: 3rd bucket in three bucket framework is quite vague, seems only focused on extrinsic factors.

Stakeholder comment: Regarding policies in document that have broad public health impact, an additional one would be how to help people whose insurance cost sharing responsibilities prevent them from accessing care.

Stakeholder comment: Healthcare professionals need to have a better understanding substance use disorders and the research that explains the disease, and best practices to prevent and treat it.

Stakeholder comment: Notwithstanding overlap between substance use and mental health disorders, separation of 2 and subsequent recommendations are somewhat confusing. Perhaps there is a way to present and discuss these recommendations that do not inadvertently make them seem as separate.

Stakeholder comment: State is encouraged to more fully engage stakeholders involved in substance use disorder prevention, treatment and recovery.

Stakeholder comment: CRISP involvement in transferring care planes is a major strategy for reducing unnecessary utilization and deserves more focus.

Stakeholder comment: For population health to succeed, Maryland needs better data on local/regional basis.

Stakeholder comment: Plan’s metrics should more closely align with the priority being given to the high-risk/high-cost Medicare population under the All-Payer model. Initiatives that focus on the health of Maryland’s seniors should therefore receive attention and resources. Vermont All-Payer ACO model provides relevant examples of health care delivery system quality and process metrics that could be emphasized in the short term.

Bibliography

- Access Health Spartanburg. (2015). 2015 Report to the Community. Retrieved from http://www.accesshealthspartanburg.org/community_report_2015
- Agency for Healthcare Research and Quality. (2016, September). National Healthcare Quality and Disparities Report: Chartbook on Effective Treatment. Retrieved from: <http://www.ahrq.gov/research/findings/nhqrdr/chartbooks/effectivetreatment/index.html>.
- Agency for Healthcare Research and Quality. *Physical Functional Health Status: Average Change in Patient Functional Status from Initial to Discharge Visit Among Patients Receiving Outpatient Rehabilitation Services*. Retrieved from <https://www.qualitymeasures.ahrq.gov/summaries/summary/28287/physical-functional-health-status-average-change-in-patient-functional-status-from-initial-to-discharge-visit-among-patients-receiving-outpatient-rehabilitation-services>
- Agency for Healthcare Research and Quality. (2016, June). Telehealth: Mapping the Evidence for Patient Outcomes From Systematic Reviews. Technical Brief Number 26. Retrieved from <https://www.effectivehealthcare.ahrq.gov/ehc/products/624/2254/telehealth-report-160630.pdf>
- Alper, J., & Baciu, A. (2015, January 6). *Financing Population Health Improvement: Workshop Summary. Quoting Kevin Barnett, Senior Investigator, Public Health Institute*. Washington, DC: National Academies Press.
- American Elder Care Research Organization (2015, May). *Kansas Medicaid (KanCare) HCBS Frail Elderly Waiver: Qualifications and Services*. Retrieved from: <https://www.payingforseniorcare.com/medicaid-waivers/ks-hcbs-frail-and-elderly.html>
- America's Health Insurance Plans. (2008). Innovations in Prevention, Wellness, and Risk Reduction.
- Arons, A. (2011, January). Childhood Obesity in Texas -The Costs, the Policies, and a Framework for the Future. Children's Hospital Association of Texas. Retrieved from <http://www.childhealthtx.org/pdfs/Childhood%20Obesity%20in%20Texas%20Report.pdf>
- Auerbach, J. (2016). The 3 Buckets of Prevention. *Journal of Public Health Management Practice* 22(3), 215-218.
- AWARE Recovery Care. (2016, June 8). *OPEN MINDS Strategy and Innovation Institute*. Presentation. Retrieved from: <http://strategy.openminds.com/years/2016/>
- Bachrach, D., Guyer, J., & Levin, A. (2016, July). Medicaid Coverage of Social Interventions: A Road Map for States. Milbank Memorial Fund. Retrieved from http://www.milbank.org/uploads/documents/medicaid_coverage_of_social_interventions_a_road_map_for_states.pdf

- Bahrapour, T. (2015, December 6). Doctors Prescribe Old-Fashioned House Calls When Treating the Old and Frail. *The Washington Post*. Retrieved from https://www.washingtonpost.com/local/social-issues/doctors-prescribe-old-fashioned-house-calls-when-treating-the-old-and-frail/2015/12/06/e0b476fc-9aa2-11e5-8917-653b65c809eb_story.html.
- Baltimore City Health Department. (2016, Winter). *White Paper, State of Health in Baltimore: Summary of Key Issues, Services and Policies*.
- Bamberger, J. D. & Dobbins, S. (2014, July). Long-Term Cost Effectiveness of Placing Homeless Seniors in Permanent Supportive Housing. Federal Reserve Bank of San Francisco. Retrieved from <http://www.frbsf.org/community-development/files/wp2014-01.pdf>
- Beacon Health Options. (2015, June). Confronting the Crisis of Opioid Addiction, White Paper. Retrieved from <http://beaconlens.com/wp-content/uploads/2015/11/Confronting-the-Crisis-of-Opioid-Addiction.pdf>
- Bergum A.H., Catlin B.B., Timberlake K. (2015, July). What Works? Strategies to Improve Rural Health. University of Wisconsin Population Health Institute. Retrieved from <https://uwphi.pophealth.wisc.edu/programs/match/healthiest-state/what-works-rural-report-july-2015.pdf>
- Blieweis, J. (2015, April 22). Health Literacy Program Expands in Worcester Schools. *Delmarva Now*. Retrieved from <http://www.delmarvanow.com/story/news/local/maryland/2015/04/22/worcester-health-literacy/26175779/>
- Blumenthal, D., Malphrus, E., & McGinnis, J. (2015). Vital signs: Core Metrics for Health and Health Care Progress. *National Academies Press*. Retrieved from <https://www.nap.edu/catalog/19402/vital-signs-core-metrics-for-health-and-health-care-progress>
- Bodenheimer, T. (2013). Strategies to Reduce Costs and Improve Care for High-Utilizing Medicaid Patients: Reflections on Pioneering Programs. *San Francisco: Center for Health Care Strategies, Inc*. Retrieved from https://www.anthem.com/provider/noapplication/f1/s0/t0/pw_e211389.pdf
- Boston, S., & DeMarco, V., (2016, February 15). Maryland Faith Community Health Network Aims to Connect Hospitals and Places of Worship to Improve the Health of Marylanders. *Lifebridge Health*. Retrieved from <http://lifebridgehealth.org/Main/PressReleases/Maryland-Faith-Community-Health-Network-Aims-to-Co-540.aspx>
- Bradley, E., Canavan, M., Rogan, E., Talbert-Slagle, K., Ndumele, C., Taylor, L. & Curry, L. (2016, May). Variation in Health Outcome: The Role of Spending in Social Services, Public Health and Health Care." *Health Affairs* 35:(5). Retrieved from <https://www.nap.edu/catalog/19402/vital-signs-core-metrics-for-health-and-health-care-progress>
- Bureau of Community Health and Prevention. (2015, January). The Massachusetts Prevention and Wellness Trust Fund-2014 Legislative Report. Massachusetts Department of Public Health. Retrieved from <http://www.mass.gov/eohhs/docs/dph/com-health/prev-wellness-advisory-board/annual-report-2014.pdf>

- Burke, C. (2014, October 28). NYS Health Initiatives to Improve Population Health. Presentation. New York Department of Health. Retrieved from <http://nyshealthfoundation.org/uploads/general/pop-health-summit-2014-burke-slides.pdf>
- California Department of Health Services. (2015, August 14). *Federal Government Approves New Model of Treatment for Drug Medi-Cal Program*. Retrieved from <http://www.dhcs.ca.gov/formsandpubs/publications/opa/Documents/15-02%20DMC%20ODS%20Waiver%208-14-15.pdf>
- Campbell, C. (2016, March 16). Baltimore Approves Bike Rental Program to Launch in Fall with 500 Bicycles. *Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-bike-share-approved-20160316-story.html>
- Cantor, J., Mikkelsen, L., Simons, B., & Waters, R. (2013, January). How Can We Pay For a Healthy Population? Innovative New Ways to Redirect Funds to Community Prevention. Prevention Institute. Retrieved from <https://www.preventioninstitute.org/publications/how-can-we-pay-healthy-population-innovative-new-ways-redirect-funds-community>
- CareFirst BlueCross BlueShield. (2015, June 30). *Quality Remains Strong as Cost Increases Slow Dramatically for Members in Patient-Centered Medical Home Program*. Retrieved from <https://member.carefirst.com/employer/news/employer-news/2015/quality-remains-strong-as-cost-increases-for-members-in-patient-centered-medical-home-program-slow-dramatically.page>
- Centers for Disease Control and Prevention. (2015). Compendium of Effective Falls Interventions: What Works for Community-Dwelling Older Adults,” 3d Edition, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from <http://www.cdc.gov/homeandrecreationalafety/falls/compendium.html>
- Centers For Disease Control and Prevention,. Case Study: The Effect of Expanding Cessation Coverage – the Massachusetts Medicaid Cessation Benefit. Washington, DC: US Department of Health and Human Services.
- Center for Supportive Housing. (2014, July). *Housing is the Best Medicine: Supportive Housing and the Social Determinants of Health*. Retrieved from www.org/wo-content/uploads/2014/07/SocialDeterminantsofHealth_2014.pdf.
- ChangeLab Solutions. (2014, June 2). ChangeLab Solutions Promotes Strategies for Reducing SSB Consumption. Retrieved from <http://www.changelabsolutions.org/news/reducing-ssb>
- Clary, A. (2016, March 29). State Strategies to Improve Health Through Housing Services. National Academy for State Health Policy. Retrieved from <http://www.nashp.org/state-strategies-to-improve-health-through-housing-services/>
- CMS. (2015). 2015-06-18 - Centers for Medicare & Medicaid Services. Retrieved 15 December 2015. Retrieved from <https://www.cms.gov/newsroom/mediareleasedatabase/press-releases/2015-press-releases-items/2015-06-18.html>

- CMS. (2015). 2015-09-29 - Centers for Medicare & Medicaid Services. Retrieved 15 December 2015. Retrieved from <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-09-29.html>
- CMS. *Dual Eligible Special Needs Plans (D-SNP)*. Retrieved from <https://www.cms.gov/Medicare/Health-Plans/SpecialNeedsPlans/DualEligibleSNP.html>
- CMS. *Quality Measures, Reporting and Performance Standards*. Retrieved from <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Quality-Measures-Standards.html>
- Cohen, D. & Briggs, R. (2016, June 29). "Do Pediatricians Have a Role in Addressing Maternal Depression? New Medicaid Guidance Shows the Way," HealthAffairs Blog. Retrieved from <http://healthaffairs.org/blog/2016/06/29/do-pediatricians-have-a-role-in-addressing-maternal-depression-new-medicare-guidance-shows-the-way/>
- Cohen, L., & Iton, A. (2014). Closing the Loop: Why We Need to Invest and Reinvest in Prevention. The California Endowment. Retrieved from <http://tcenews.calendow.org/blog/closing-the-loop:-why-we-need-to-invest-and-reinvest-in-prevention>
- Colorado Association for School-Based Health Care. (2011). Colorado's investment in School-Based Health Centers. Retrieved from <http://www.casbhc.org/Publications/Policy%20Briefs/Colorado's%20Investment%20in%20SBHCs.pdf>
- Corporation for Supportive Housing. (2014). *Briefing: Maryland 115 Housing Supports Waiver*.
- Crawford, M. & Houston, R. (2015, February). State Payment and Financing Models to Promote Health and Social Service Integration. Center for Health Care Strategies, Inc. Retrieved from http://www.chcs.org/media/Medicaid_-Soc-Service-Financing_022515_2_Final.pdf
- Davis, K. (2015, July 14). To Lower The Cost Of Health Care, Invest In Social Services. Health Affairs Blog. Retrieved from <https://www.pcpcc.org/2015/07/14/lower-cost-health-care-invest-social-services>
- De Jonge, K. (2015, August 11). Back to the Future: Making House Calls for Better Care, Reduced Costs. Health & Human Services Blog. Retrieved from <http://www.hhs.gov/blog/2015/08/11/making-house-calls-better-care-reduced-costs.html>
- Dobson, L. (2014). Community Care of North Carolina. Retrieved from <https://www.nmlegis.gov/handouts/LHHS%20101012%20Item%200%20L.%20Allen%20Dobson,%20JR.%20MD,%20Community%20Care%20of%20North%20Carolina.pdf>
- Duke, E. (2012). Investing in What Works for America's Communities. Foreword: Building Sustainable Communities. *San Francisco: Federal Reserve Bank & Low Income Investment Fund*. Retrieved from <http://www.whatworksforamerica.org/the-book>
- Farley, T. (2013, December 3). Take Care New York: A Strategy for Population-Based Prevention. Retrieved from https://www.health.ny.gov/events/population_health_summit/docs/public_health_sector.pdf

- Fish, D., (2015, September 24). *Prevention Agenda and DSRIP*. New York Prevention Agenda Update, New York Department of Health. Retrieved from https://www.health.ny.gov/facilities/public_health_and_health_planning_council/meetings/2015-09-24/docs/ad_hoc_committee_slides.pdf
- Garrett, K. (2015, January). Bridging Health Care and Population Health: Payment and Financing Models. New York Academy of Medicine. Retrieved from <http://nyshealthfoundation.org/uploads/resources/bridging-health-care-and-population-health-nyam-jan-2015.pdf>
- Galea, S. & Annas, G. (2016, February 16). Aspirations and Strategies for Public Health. *JAMA: Journal of the American Medical Association*, 315(7), 655-656. Retrieved from: <http://jama.jamanetwork.com/article.aspx?articleid=2486470>
- George, T. & Bai, B. (2015, May 21). The Weak Housing Market Recovery in Baltimore Has Hurt African Americans the Most. The Urban institute, Urban Wire. Retrieved from <http://www.urban.org/urban-wire/weak-housing-market-recovery-baltimore-has-hurt-african-americans-most>
- Gordon, D. (2015). Telemedicine: Using Remote Monitoring to Reduce Hospital Readmissions. GW Public Health. Retrieved from <https://mha.gwu.edu/blog/telemedicine-reduce-hospital-readmissions/>
- Guo, JJ, Jang, R., Keller, KN, McCracken, AL, Pan, W., & Cluxton, RJ. (2005, October). Impact of School-Based Health Centers on Children with Asthma. *Journal of Adolescent Health* 37(4): 266-274. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/16182136>
- Health and Human Services. (2015). About the Division of Prevention and Wellness. Retrieved from <http://www.mass.gov/eohhs/gov/departments/dph/programs/community-health/chronic-disease/about-the-division-of-prevention-and-wellness.html>
- Health Policy Institute of Ohio. (2015, September 1). *Wellness Trust, Beyond Medical Care Fact Sheet*. Retrieved from: http://www.healthpolicyohio.org/wp-content/uploads/2015/09/Beyond_WellnessTrustsFactSheet_Final.pdf
- Health Resources in Action. (2014, January 31). Universal Health Insurance Access Efforts in Massachusetts: A Case Study: Lessons Learned for Public Health Systems Across the U.S. Retrieved from https://nnphi.org/wp-content/uploads/2015/08/UniversalHealthIns_CaseStudy_FINAL.pdf
- HSCRC. (2016, February). Executive Director's Report. Retrieved from <http://www.hsrc.state.md.us/documents/commission-meeting/2016/02-10/HSCRC-post-meeting/2016/02-10/HSCRC-Post-Meeting-Packet-%202016-02-10.pdf>
- Health Services Cost Review Commission (2016, May 11). Staff Report: Maryland Statewide Health Information Exchange, The Chesapeake Regional Information System for our Patients: FY2017 Funding to Support HIE Operations and CRISP Reporting Services. *Post-Meeting Packet – Health Services Cost Review Commission*. Retrieved from: www.hsrc.state.md.us/.../2016/05-11/HSCRC-Post-Meeting-Packet-2016-05-11.pdf

- Healthy Baltimore 2015. (2016, May). *Interim Status Report*. Retrieved from http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015_May2016Update_web.pdf
- Healthy St Mary's County 2020. Retrieved from <http://healthystmarys.com/wp-content/uploads/2016/03/HealthyStMarys2020.pdf>
- Healthy Baltimore 2015. (2016, May). *Interim Status Report*. Retrieved from: http://health.baltimorecity.gov/sites/default/files/HealthyBaltimore2015_May2016Update_web.pdf
- Hennepin County. (2015). Hennepin Health's 2014 Reinvestment Initiatives. Retrieved from <https://content.govdelivery.com/accounts/MNHENNE/bulletins/9e701c>
- Hennepin Health. (2015, January 30). National Health Policy Forum. Retrieved from https://www.nhpf.org/uploads/Handouts/Owen-slides_01-30-15.pdf
- Hennepin Health (2011). A Social Disparities Approach to Health & Health Care. Retrieved from <https://stateinnovation.org/node/6438>
- Hester, J., & Stange, P. (2014, March 6). A Sustainable Financial Model for Community Health Systems. National Academy of Sciences. Retrieved from <https://nam.edu/perspectives-2014-a-sustainable-financial-model-for-community-health-systems/>
- Hester, J., Stange, P., Seeff, L., Davis, J., & Craft, C. (2015, February 11). Toward Sustainable Improvements in Population Health: Overview of Community Integration Structures and Emerging Innovations in Financing. Atlanta, GA: CDC Health Policy Series, No. 2. Retrieved from: <https://www.cdc.gov/policy/docs/financepaper.pdf>
- Hester, J., Auerbach, J., Chang, D., Magnan, S., & Monroe, J. (2015, April 16). Opportunity Knocks Again for Population Health: Round Two in State Innovation Models. Washington, DC: National Academy of Sciences. Retrieved from <https://nam.edu/wp-content/uploads/2015/06/SIMsRound21.pdf>
- Institute for Health Technology Transformation. (2012). Giving Congregations the Tools to Track Health Together. Retrieved from http://ihealthtran.com/pdf/Community_Dashboard_iHT2.pdf
- Institute for Population Health Improvement. (2016). University of California, Davis Health System. Retrieved from: <https://www.ucdmc.ucdavis.edu/iph/>
- Institute on Urban Health Research and Practice. (2013). The Massachusetts Prevention and Wellness Trust. Northeastern University. Retrieved from <http://www.northeastern.edu/iuhrp/wp-content/uploads/2013/12/PreventionTrustFinalReport.pdf>
- Kellermann, A., Vaiana, M., Hussey, P., Chari, R., Lowsky, D., & Mulcahy, A. (2012). Flattening the Trajectory of Health Care Spending: Insights from RAND Health Research. Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/research_briefs/RB9690z1.html

- Kindig, D. (2014, April). Improving Population Health: Ideas and Action. University of Wisconsin Population Health Institute. Retrieved from <https://uwphi.pophealth.wisc.edu/publications/other/blog-collection-final-2014-04-05.pdf>
- Kindig, D. (2010, June 7). *Obstacles to Population Health Policy: Is Anyone Accountable? Improving Population Health, Policy. Practice. Research.* Retrieved from: <http://www.improvingpopulationhealth.org/blog/2010/06/obstacles-to-population-health-policy-is-anyone-accountable.html>
- Kindig, D. (2014, October 28, 2014). Paying for Population Health Improvement. Presentation, NYSHF Population Health Summit. Retrieved from <http://nyshealthfoundation.org/uploads/general/pop-health-summit-2014-kindig-slides.pdf>
- Kindig, D., & Isham, G. (2014, Summer). Population Health Improvement: A Community Health Business Model That Engages Partners in All Sectors. *Frontiers of Health Services Management*, 30(4). 3-20. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25671991>
- Kindig, D. & Stoddart, G. (2003, March). What Is Population Health? *American Journal of Public Health* 93(3). 380-383. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447747/>
- Koh, H. (2016, February 11). The importance Of Promoting Tobacco Cessation Services For Medicaid Beneficiaries. Health Affairs Blog. Retrieved from <http://healthaffairs.org/blog/2016/02/11/the-importance-of-promoting-tobacco-cessation-services-for-medicaid-beneficiaries/>
- Kresge Foundation. (2014, July 9). Kresge Invests \$4.5M in Effort to Capture and Share Health Innovations that Shift Focus Upstream from Care to Health. Retrieved from <http://kresge.org/news/kresge-invests-45m-effort-capture-and-share-health-innovations-shift-focus-upstream-care-health>
- Lawton, E., & Sandel, M. (2015, July 8). What's Law Got to Do With It? How Medical-Legal Partnerships Reduce Barriers to Health. Robert Wood Johnson Foundation. Retrieved from http://www.rwjf.org/en/culture-of-health/2015/07/what_s_law_got_todo.html
- Lutes, M., & Wilson, T. (2014, June 2). Population Health Management: New Perspectives on a Familiar Concept. EBG Advisors.
- Maryland Department of Health and Mental Hygiene. (2015, June). Drug-and Alcohol-Related Intoxication Deaths in Maryland, 2015. Retrieved from http://bha.dhmh.maryland.gov/OVERDOSE_PREVENTION/Documents/2015%20Annual%20Report_final.pdf
- Maryland Department of Transportation (2016, February). Maryland Strategic Highway Safety Plan, 2016-2020. Retrieved from http://www.mva.maryland.gov/_resources/docs/MarylandSHSP_2016-2020-Final.pdf
- Maryland Health Benefits Exchange (2016, May 16). Population Eligible for Maryland Health Connection Coverage Trimmed by 40 Percent in Three Years. Retrieved from http://www.marylandhbe.com/wp-content/uploads/2016/01/05162016_SHADACEstimates.pdf

- Maryland State Health Improvement Process (SHIP) measures. Retrieved from <http://dhmh.maryland.gov/ship/Pages/home.aspx>
- Massey, W., & Dressner, M. (2016, August 4). Advocates Rally for Baltimore Safe Streets Program After Funding Cut. *Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/bs-md-ci-safe-streets-funding-rally-20160804-story.html>
- Mattessich, P., & Rausch, E. (2013, June 19). Collaboration to Build Healthier Communities. Wilder Research, Federal Reserve Bank of Minnesota. Robert Wood Johnson Foundation. Retrieved from <http://www.rwjf.org/en/library/research/2013/06/collaboration-to-build-healthier-communities.html>
- McCarthy, D., Radley, D., & Hayes, S. (2015, December) Aiming Higher: Scorecard on State Health System Performance 4th ed. The Commonwealth Fund. Retrieved from <http://www.commonwealthfund.org/publications/fund-reports/2015/dec/aiming-higher-2015>
- McCluskey, P. D., (2014, May 31) Paramedics Branch into Home Care. *Boston Globe*. Retrieved from <https://www.bostonglobe.com/business/2014/05/30/paramedics-branch-into-home-care/WIBIbjRuBx6mQCe0Nb3c3K/story.html>
- McGinnis, T., Crawford, M., & Somers, S. (2014). A State Policy Framework for Integrating Health and Social Services. Commonwealth Fund. Retrieved from: http://www.commonwealthfund.org/~media/files/publications/issue-brief/2014/jul/1757_mcginnis_state_policy_framework_ib.pdf
- MedStar Health. Community Health Needs Assessment 2015 for St. Mary's County. Retrieved from http://ct1.medstarhealth.org/content/uploads/sites16/2014/08/MedStar_CHNA_2015_FINAL.pdf
- Menon, D., & Wolf, D. (2015, October 29-30) Enhancing Access of Underserved Populations to Pediatric Specialty Care through Telemedicine. 2015 Rural Health Conference. Retrieved from http://www.mdruralhealth.org/wp-content/uploads/2015/12/Menon.Wolf_.pdf
- MHA. (2016). *Maryland Waiver Performance Dashboard*. Retrieved from <http://www.mhaonline.org/transforming-health-care/tracking-our-all-payer-experiment/waiver-dashboard>
- Moses, K. & Davis, R. (2015, July 22). Housing is a Prescription for Better Health. Health Affairs Blog. Retrieved from Healthaffairs.org/blog/2015/07/22/housing-is-a-prescription-for-better-health/
- Nardone, M., Cho, R. & Moses, K. (2012, June). Medicaid-Financed Services in Supportive Housing for High-Need Homeless Beneficiaries: The Business Case. Center for Health Care Strategies, Inc., Policy Brief. Retrieved from http://www.csh.org/wp-content/uploads/2012/06/SH-Medicaid-Bz-Case_Final.pdf.
- National Academies Press (2015) *Collaboration Between Health Care and Public Health: Workshop in Brief*. Retrieved from <https://www.nap.edu/catalog/21687/collaboration-between-health-care-and-public-health-workshop-in-brief>

- National Council on Aging. (2015, June 2). Highest Tier Evidence-Based Health Promotion/Disease Prevention Programs. Retrieved from <https://www.ncoa.org/wp-content/uploads/Title-IIID-Highest-Tier-Evidence-FINAL.pdf>
- New Strategies for a New Era in Population Health. (2015, August). Health Leaders Magazine. Retrieved from <http://www.healthleadersmedia.com/whitepaper/new-strategies-new-era-population-health#>
- New York Academy of Medicine. (2013). A Compendium of Proven Community-Based Prevention Programs Retrieved from http://healthyamericans.org/assets/files/Compendium_Report_1016_1131.pdf
- Nice Ride Minnesota. (2015, May 7). *Nice Ride: Five-Year Assessment and Strategic Plan*. Retrieved from https://www.niceridemn.org/_asset/dvhz30/Nice-Ride-Five-Year-Assessment-060415.pdf
- Mandros, A. (2015, May 29). For Supportive Housing, Creativity Required. Open Minds, Retrieved from <https://www.openminds.com/market-intelligence/executive-briefings/supportive-housing-creativity-required/>
- National Association of Psychiatric Health Systems (2014) Population Health and Integration: Shaping the Future of Treatment for Mental and Addictive Disorders. NAPHS Leadership Forum. Retrieved from <https://www.naphs.org/resourcemanager/handlerresource.aspx?id=827>
- Oregon Health Authority. (2015) *CCO Metrics Performance Report*. Retrieved from <https://www.oregon.gov/oha/Metrics/Pages/HST-Reports.aspx>
- Oregon Health Authority. (2014). *Oregon's Health Transformation Final Report*. Retrieved from <https://www.oregon.gov/oha/Metrics/Documents/2014%20Final%20Report%20-%20June%202015.pdf>
- Oregon Health Authority, *Office of Health Analytics*. Retrieved from <http://www.oregon.gov/oha/analytics/Pages/Child-Family-Well-Being-Measures>
- Oregon Health Authority. (2016). Oregon School-Based Health Centers: Status Update. *Oregon Health Authority, Public Health Division*. Retrieved from https://public.health.oregon.gov/HealthyPeopleFamilies/Youth/HealthSchool/SchoolBasedHealthCenters/Documents/SBHC__Pubs/2016_SBHC-Status-Update.pdf
- O'Toole, T. & Kane, V. (2014, March). Return on Investment Analysis and Modeling. VA National Center on Homelessness Among Veterans, *U.S. Department of Veterans Affairs*. Retrieved from <http://www.va.gov/homeless/nchav/docs/Return%20on%20Investment%20Analysis%20and%20Modeling%20White%20Paper.pdf>
- Parsons, A. (2016, April 6). *Montefiore's Population Health Programs and Strategies*. Presentation, Maryland Population Health Summit.

- Patnode, C., Henderson, J., Thompson, J., Senger, C., Fortmann, S., & Whitlock, E. (2015, September 22). Evidence Summary: Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions. U.S. Preventive Services Task Force. Retrieved from <http://www.uspreventiveservicestaskforce.org/Page/Document/behavioral-counseling-and-pharmacotherapy-interventions-for-tobacco-use-in-adults-and-pregnant-women-counseling-and-interventions1>
- Paying for Senior Care. (2016, February). Oregon's Aged and Physically Disabled Medicaid Waiver. Retrieved from <https://www.payingforseniorcare.com/medicaid-waivers/or-aged-and-physically-disabled.html>
- Plaza, C., Arons, A., Rosenthal, J., & Heider, F. (2014, April). Financing Prevention: How States are Balancing Delivery System & Public Health Roles. *ChangeLab Solutions*. Retrieved from <http://www.changelabsolutions.org/financing-prevention>
- Pollitz, L. & Rae, M. (2016, May 19). Workplace Wellness Programs, Characteristics and Requirements. *Kaiser Family Foundation*. Retrieved from <http://kff.org/private-insurance/issue-brief/workplace-wellness-programs-characteristics-and-requirements/>
- Prybil, L., Jarris, P., & Montero, J. (2015, November 3). A Perspective on Public - Private Collaboration in the Health Sector. *National Academy of Medicine*. Retrieved from <https://nam.edu/a-perspective-on-public-private-collaboration-in-the-health-sector/>
- Prybil, L., Scutchfield, F., Killian, R., Kelly, A., Mays, G., & Carman, A. et al. (2014). *Improving Community Health through Hospital - Public Health Collaboration*. Lexington, KY: Commonwealth Center for Governance Studies. 1-105.
- Radley, D., McCarthy, D., & Hayes, S. (2016). Rising to the Challenge, The Commonwealth Fund Scorecard on Local Health System Performance. *The Commonwealth Fund*. Retrieved from <http://www.commonwealthfund.org/interactives/2016/jul/local-scorecard/>
- Rausch, E. (2014, April 1). CDFIs Emerge as Key Partners in Improving Community Health. Community Dividend. *Federal Reserve Bank of Minneapolis*. Retrieved from <https://www.minneapolisfed.org/publications/community-dividend/cdfis-emerge-as-key-partners-in-improving-community-health>
- Regenstein, M., Teitelbaum, J., Sharac, J., & Phyu, E. (2015, February). Medical-Legal Partnerships and Health Centers: Addressing Patients' Health-Harming Civil Legal Needs as Part of Primary Care. *National Center for Medical-Legal Partnership*. Retrieved from <http://medical-legalpartnership.org/wp-content/uploads/2015/08/Medical-Legal-Partnership-and-Health-Centers.pdf>
- Richter, L. (2009, May 13). Prescription for Healthy Communities: Community Development Finance. Community Development Investment. *Federal Reserve Bank of San Francisco*. Retrieved from <http://www.frbsf.org/community-development/files/richter.pdf>
- Robert Wood Johnson Foundation. *County Health Rankings and Roadmaps*. Retrieved from <http://www.countyhealthrankings.org/>

- Robert Wood Johnson Foundation. (2012, September 26). What Works for Health: A New Resource for Community Leaders. *Culture of Health*. Retrieved from http://www.rwjf.org/en/culture-of-health/2012/09/what_works_for_healt.html
- Robert Wood Johnson Foundation. (2015, November 11). *Measuring What Matters: Introducing a New Action Framework*. *Culture of Health*. Retrieved from: http://www.rwjf.org/en/culture-of-health/2015/11/measuring_what_matte.html
- Rosenthal, S., Meara, A., & Hollingsworth, N. (2015). Improving Care Coordination and Strategies for Managing Greater Risk and Accountability. *Presentation, Montefiore Medical Center*.
- RTI International. (2014, November 4). *State Innovation Models (SIM) Initiative Evaluation*. Retrieved from https://downloads.cms.gov/files/cmmti/SIM-Round1-ModelTest-FirstAnnualRpt_5_6_15.pdf
- Salvation Army (2015, March 9) *Community Paramedics On Duty at Harbor Light*. Retrieved from <http://salvationarmynorth.org/?community-news=community-paramedics-on-duty-at-harbor-light>
- Schulz, R. (2015, June 23). A New Model for Private Sector Partnerships to Improve Economic Well-Being and Community Outcomes. *National Academy of Sciences*. Retrieved from <https://nam.edu/perspectives-2015-a-new-model-for-private-sector-partnerships-to-improve-economic-well-being-and-community-outcomes/>
- Silow-Carroll, S., Edwards, J., & Lashbrook, A. (2011, April). Reducing Hospital Readmissions: Lessons from Top-Performing Hospitals. *The Commonwealth Fund*. Retrieved from http://www.commonwealthfund.org/~media/Files/Publications/Case%20Study/2011/Apr/1473_SilowCarroll_readmissions_synthesis_web_version.pdf
- Staterefor(u)m (2014, January). Population Health Components of State Innovation Model (SIM) Plans: Round 2 Model Testing States. Retrieved from <http://www.statecoverage.org/node/5302>
- Stoto, M., & Ryan Smith, C. (2015, April 9). Community Health Needs Assessments - Aligning the Interests of Public Health and the Health Care Delivery System to Improve Population Health. *Institute of Medicine of the National Academies*. Retrieved from <https://nam.edu/wp-content/uploads/2015/07/CHNAalignment.pdf>
- Taylor E., Lake T., Nysenbaum J., Peterson G., Meyers D. (2011, June). Coordinating Care in the Medical Neighborhood: Critical Components and Available Mechanisms. White Paper (Prepared by Mathematica Policy Research under Contract No. HHS290200900019I TO2). AHRQ Publication No. 11-0064. Rockville, MD: Agency for Healthcare Research and Quality.
- Taylor, L., Coyle, C., Ndumele, C., Rogan, E., Canavan, M., Curry, L., & Bradley, E. (2015, June 29). Leveraging the Social Determinants of Health: What Works? *Blue Cross Blue Shield of Massachusetts Foundation*. Retrieved from http://bluecrossfoundation.org/sites/default/files/download/publication/Social_Equity_Report_Final.pdf

- Thomas, J., (2014, July 21). Veterans Administration is Leader in Telemental Housing. *National Psychologist*. Retrieved from <http://nationalpsychologist.com/2014/07/veterans-administration-is-leader-in-telemental-health/102562.html>
- Tipirmeni, M.D., R., Vickery, M.D., K., & Ehlinger, M.D., E. (2015, July/August). Accountable Communities for Health: Moving From Providing Accountable Care for Creating Health. *Annals of Family Medicine*, Vol. 13(4). Retrieved from <http://www.annfammed.org/content/13/4/367.full>
- Townley, C., & Yalowich, R. (2015, November). Improving Behavioral Health Access & Integration Using Telehealth & Teleconsultation: A Health Care System for the 21st Century. *National Academy for State Health Policy*. Retrieved from <http://www.nashp.org/wp-content/uploads/2015/11/Telemedicine.pdf>
- Union Hospital & Cecil County Health Department. *Cecil County's Community Health Needs Assessment, 2015-2016*. Retrieved from https://www.uhcc.com/wp-content/uploads/2016/04/CHNA-Report_FY15-FY16_public-feedback-draft.pdf
- United Health Foundation, America's Health Rankings. Retrieved from www.americashealthranking.org
- UnitedHealth Group. (2014, October 7). *United Healthcare provides \$5.1 Million to Build Affordable-Housing Community in Boston's Jamaica Plain Neighborhood for People Struggling with Homelessness*. Retrieved from <https://www.uhc.com/news-room/2014-news-release-archive/affordable-housing-in-boston>
- Vitality Institute, *Health Metrics Reporting*. Retrieved from <http://thevitalityinstitute.org/projects/health-metrics-reporting/>
- Vitality Institute. (2014, June). *Investing in Prevention: A National Imperative - Our Pledges & Calls-to-Action*. Retrieved from http://thevitalityinstitute.org/site/wp-content/uploads/2014/06/Vitality_Recommendations2014.pdf
- Webber, MP., Carpiniello, K., Oruwariye, T., Lo, Y., Burton, W., & Appel, D. (2003). Burden of Asthma in Inner-city Elementary Schoolchildren. *Pediatric and Adolescent Medicine 157*: 125-129. Retrieved from http://www.attendanceworks.org/wordpress/wp-content/uploads/2011/10/Burden-of-Asthma_Do-SBHCs-Make-Difference_Webber-et-al_Arch-Ped-Adol-Med_2003.pdf
- Webster, D., Mendel Whitehill, J., Vernick, J. & Parker, E., (2012, January 11). *Evaluation of Baltimore's Safe Streets Program*. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health, Center for the Prevention of Youth Violence. Retrieved from <http://www.rwjf.org/content/dam/web-assets/2012/01/evaluation-of-baltimore-s-safe-streets-program>
- Wenger, Y. (2016, September 2). Affordable Housing Advocates Push for Trust Fund, Money to Fill It. *The Baltimore Sun*. Retrieved from <http://www.baltimoresun.com/news/maryland/baltimore-city/politics/bs-md-ci-housing-amendment-20160830-story.html>

Western Maryland Health System & Allegany County Health Department. (2013, December). *Allegany County Community Health Needs Assessment*. Retrieved from [http://www.alleganyhealthdept.com/alleganyhealthplanningcoalition/pdf/Community%20Health%20Needs%20Assessment%20FY14%20\(final\).pdf](http://www.alleganyhealthdept.com/alleganyhealthplanningcoalition/pdf/Community%20Health%20Needs%20Assessment%20FY14%20(final).pdf)

Worcester County, Maryland. *Community Health Improvement Plan (CHIP), 2012-2017*. Retrieved from <http://www.worcesterhealth.org/community-health-improvement-planning-chip>

Zimmerman, J., Campisteguy, M., Parks, L., & Richardson, J. (2011, December). *The School-Based Health Care Policy Program: Capstone Evaluation. Outcomes, Impact and Lessons Learned, 2004-2010*. Retrieved from <http://www.schoolbasedhealthcare.org/wp-content/uploads/2011/12/SBHCPP-Capstone-Evaluation-Report-2004-2010-Rev-Dec-2011-2.pdf>