RCHN COMMUNITY HEALTH FOUNDATION

POPULATION HEALTH MANAGEMENT IN THE COMMUNITY HEALTH CENTER CONTEXT

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Background and Historical Perspective

The health center model is rooted in the history of applied clinical epidemiology and social medicine, as exemplified by John Snow and Rudolf Virchow in the 19th century, and by such 20th century pioneers as William Pickles, Sidney and Emily Kark, and H. Jack Geiger, who integrated public health and primary care in what eventually came to be known as Community Oriented Primary Care (COPC). Although COPC has undergone various permutations in the US, the core concepts identified by the Karks, of defining the population as people living in a defined geo-political area, assessing its health status and, with enduring partnerships with the community, implementing and evaluating the impact of a broad range of health, social and economic programs, remain core concepts for health centers.[1] Regular community health needs assessments, governance by community-based boards, a majority of whose members are health center users, situating health centers in underserved areas and providing access to care and enabling services regardless of insurance status remain steadfast requirements for federally qualified health centers. Consequently, health centers are uniquely positioned to strengthen and expand their capacity for population health management and to continue to provide the nation with innovative solutions for eliminating health disparities.

The term "population health" has become more prominent in health policy in recent years since its inclusion in The Triple Aim, first proposed by the Institute for Healthcare Improvement (IHI). The Triple Aim framework is focused on optimizing performance of the healthcare system, and has three dimensions or goals: 1) improve the health of the population; 2) enhance the patient experience of care; and, 3) reduce per capita cost of care.[2] This framework has been adapted by the Center for Medicaid and Medicare Services (CMS) in its four-point strategy for better care and lower costs; prevention and population health; expanded health care coverage; and, enterprise excellence.[3] The National Strategy for Quality Improvement in Health Care (National Quality Strategy or NQS) published in 2011 has also adapted the triple aim to include[4]:

- Better care that is patient-centered, reliable, accessible, and safe;
- Affordable care for all stakeholders, including individuals, families, employers, and governments; and
- Healthy people/healthy communities - supporting proven interventions to address behavioral, social, and environmental determinants of health, in addition to delivering higher quality care.

The NQS, an initiative to set national goals to improve the quality of health care and its impacts on public health, broadly defines communities as the entire U.S. population, insured and uninsured. Yet, except for the use of the word "entire" to describe the

[1] SK Longlett, JE Kruse, RM Wesley. Community-Oriented Primary Care: Historical Perspective. J Am Board Fam Med 2001;14(1) p 1-11.
[2] DM Berwick, TW Nolan, J Whittington. The Triple Aim: Care, Health, And Cost. Health Affairs, 27, no.3 (2008): 759-69 [Some problem with footnote numbering, beginning with 19?]
[3] CMS Strategy, 2013. (http://www.cms.gov/About-CMS/Agency-Information/CMS-Strategy/index.html)
[4] 2014 Annual Progress Report to Congress: National Strategy for Quality Improvement in Health Care (http://www.AHRQ.gov/workingforquality

population, the term has not been further defined and the denominator for per capita costs is therefore also left vague.

Medical care organizations and insurers, on the other hand, define their populations as those beneficiaries or groups they serve directly, where they have accountability for both costs and quality outcomes. Public health agencies focus on population-based prevention and health promotion strategies that address risks and social and environmental determinants of health. Yet in some areas of the country, these agencies also provide some direct clinical care services to specific populations such as the uninsured and low-income people. Since an estimated 40% of deaths are caused by modifiable behaviors, in contrast to the 10-15% contribution of the medical system to improved health outcomes, emphasis on a broader approach to health is growing in importance.[5]

In the current health care environment, with policies embracing greater access to care and payment and other incentives designed to control costs and improve quality, the notion of population health is tightly aligned with payment. Therefore, it is important to make a distinction between total population health, defined as the health outcomes of a group of individuals - living often in a geo-political area - as well as the distribution of such outcomes within the group; and, the health of insured sub-populations such as people assigned to ACOs or other types of capitated systems.[6,7] The processes of total population health *improvement* - implied in the triple aim and the national quality strategy - require the engagement of stakeholders from other sectors in addition to health care and different approaches both to defining relevant measurement and identifying improvement strategies. Lastly, *population health management* refers to the range of processes related to being accountable for quality, access, the experience of care and the health outcomes for a sub-population of patients.

This paper focuses on the population of patients cared for by community health centers (CHCs) and more broadly, those who reside in their communities. It assumes based on prevailing approaches that CHCs conduct periodic assessments of community need in their designated service areas and conduct outreach to their communities to identify and provide access and appropriate services to people in need of care. Additionally, it acknowledges that the CHC patient population is dynamic and includes at any given time both insured and uninsured people, thereby generating additional challenges for managing patient care at the sub-population level.

Health Reform: Clinical Practice Transformation

Population health management is an essential element in two major closely related areas of health reform: clinical practice transformation and health system transformation,

[5] JM McGinnis, P Williams-Russo, JR Knickman. The case for more active policy attention to health promotion. Health Aff (Millwood) 2002;21:78-93.
[6] DM Jacobson & S Teutsch. An Environmental Scan of Integrated Approaches for Defining and Measuring Total Population Health. Public Health Institute & County of LA Dept. of Health.
[7] DA Kindig & G Stoddart. Models for Population Health. American Journal of Public Health, Mar 2003, Vol 93, No. 3. 380-382.

including payment reform. States and the federal government recognize that primary care is the foundation for transformation of both the care delivery system and supportive payment reforms that generate improved quality of care and control costs. As part of this strategy, almost every state Medicaid program has initiated one or more patient-centered medical home (PCMH) initiatives and close to half of these states are also working with commercial payers in multi-payer initiatives.[8] In addition, since 2011 HRSA has embarked on its Patient-Centered Medical/Health Home Initiative and CMS initiated, in 2012, its three year Advanced Primary Care Program focused on supporting a target group of 500 Federally Qualified Health Centers (FQHCs) to achieve Level 3 NCQA recognition as PCMH. [9]

Another example of PCMH health center - focused initiatives is the five-year demonstration project to develop and demonstrate a sustainable implementation model for medical home transformation that could be scaled up and replicated in FQHCs (www.safetynetmedicalhome.org). The project, sponsored by The Commonwealth Fund in partnership with numerous local foundations, was led by the National Program Team composed of Qualis Health and the MacColl Center for Health Care Innovation at the Group Health Research Institute. Beginning in 2008, this Safety Net Medical Home Initiative developed a framework for PCMH transformation, "Change Concepts for Practice Transformation." Working collaboratively with practices and practice coaches, the National Program Team and several Primary Care Associations supplemented these concepts with specific actionable steps. Resources and tools were also developed to support the implementation and sustainability of these practice improvements.

An important element of clinical practice transformation is the adoption of health information technology (HIT), overseen by The Office of the National Coordinator for Health Information Technology (ONC) and through the CMS EHR Incentive and Certification program for Meaningful Use of HIT.[10] Meaningful Use is defined as the use of electronic health record (EHR) technology to address four domains:

- Improve quality, safety, efficiency, and reduce health disparities;
- Engage patients and family;
- Improve care coordination and population and public health;
- Maintain privacy and security of patient health information.

As defined by the ONC, these elements are designed to achieve results demonstrated by better individual clinical outcomes, improved population health outcomes, increased transparency and efficiency, empowered individuals and more robust research data on health systems. CMS created an incentive payment program to support adoption and implementation of meaningful use in clinical settings.[11] Eligible healthcare professionals

[8] National Academy for State Health Policy (NASHP). Medical Home & Patient-Centered Care. (http://www.nashp.org/med-home-map#sthash.MJWT6DAJ)

[9] HRSA Patient-Centered Medical Home Initiative. (http://bphc.hrsa.gov/policiesregulations/policies/pal201101.html#

[10] Meaningful Use Definition & Objectives. http://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives

[11] EHR Incentive Programs http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/ehrincentiveprograms/

including those working in FQHCs and CMS-designated Rural Health Clinics that participate in this program through their state Medicaid agency can earn a maximum incentive of $63,750 over a six year period; eligible providers include physicians, nurse practitioners, certified nurse-midwives, physicians assistants, and dentists.

The PCMH, Meaningful Use, and population health management initiatives are not only linked, but depend on each other for successful implementation. Table 1 below illustrates the relationships among the key domains of Population Health, PCMH concepts, Meaningful Use, and the AHRQ Practice-Based Population Health framework. These domains are compared to the categories from the Care Continuum Alliance that represent and reflect the experiences of the population health industry.[12] This framework and a subsequent guide were developed for individual primary care and multispecialty practices that are transforming their care model in the environment of integrated delivery systems, accountable care organizations, PCMH, community health collaboratives, state health exchanges and large hospital systems. Although not an endorsement of this framework, it is featured here to illustrate the inter-relationships among the key domains of population health and PCMH, Meaningful Use and the AHRQ information management functionalities for Practice-Based Population Health.[13,14]

Table 1 follows on next page.

[12] Implementation and Evaluation: A Population Health Guide for Primary Care Models, 2012. Care Coordination Alliance. www.carecontinuumalliance.org

[13] M Shaljian & M Nielsen. Managing Populations, Maximizing Technology: Population Health Management in the Medical Neighborhood. Patient-Centered Primary Care Collaborative. October 2013. www.pcpcc.org

[14] CM Cusack , AD Knudson, JL Kronstadt, RF Singer, AL Brown. Practice-Based Population Health: Information Technology to Support Transformation to Proactive Primary are. AHRQ Publication No. 10-0092-EF. Rockville, MD. Agency for Healthcare Research & Quality. July 2010.

Table 1. Relationships Among Key Population Health Domains

Population Health Domain (CCA)	Safety Net Medical Home Initiative Change Concept Domain	NCQA PCMH Standard 2014	Related Meaningful Use Domain	AHRQ Practice Based Population Health Domain
Patient Population Identification/ Assessment	-Empanelment	-Population Health Management	-Improve Quality, Safety, Efficiency	-Identify subpopulations of patients
Risk Stratification	-Organized evidence based care	-Population Health Management	-Improve Quality, Safety & Efficiency -Improve Public & Population Health	-Examine detailed characteristics of identified subpopulations
Engagement	-Continuous Team Based Healing Relationships -Care Coordination	-Team Based Care -Care Coordination & Care Transitions	-Engage Patients & Families -Care Coordination	-Create reminders for patients & providers
Patient-Centered Interactions	-Patient Centered Interactions -Enhanced Access Care Coordination	-Patient Centered Access -Care Management & Support	-Ensure Privacy & Security -Improve Quality, Safety Efficiency -Care Coordination	-Create reminders for patients & providers
Impact Evaluation & Improvement	-Quality Improvement Strategy	-Performance Measurement & Quality Improvement	-Improve Quality, Safety. Efficiency -Ensure Privacy & Security	-Track Performance Measures -Make data available in multiple forms
	-Engaged Leadership			

An additional point is clear from this table. Only in the Safety Net Medical Home Initiative (SNMHI) is "Engaged Leadership" identified as a separate change concept domain. Traditionally, resources devoted to population health management and quality improvement have been viewed as cost centers rather than key organization-wide investments for success in the health care market place. Along with the Quality Improvement Strategy concept domain, "Engaged Leadership" is defined in the SNMHI as part of the first and fundamental stage of "Laying the Foundation" for practice transformation. Otherwise, the overlap of the core concept domains of population health management with those of the PCMH and Meaningful Use is evident and synergistic.

Health Reform: Health System Transformation

The Accountable Care Act (ACA) sets the stage for transforming what is now a *medical* care marketplace to a *health* care marketplace. The Accountable Care Organizations (ACO) and the Patient-Centered Medical Home (PCMH) are two major strategies to create this new health marketplace. The concept of the ACO where providers take responsibility for patient care over time and across all care settings has three principle characteristics: 1) the capacity to provide and manage the continuum of care as an integrated delivery system; 2) the capacity for performance measurement and improvement; and 3) the capability of prospectively planning budgets, human resource and infrastructure needs as a collaborative effort with all ACO participant providers.[15]

The success of the ACO and similar models rests upon a firm foundation of comprehensive primary care as reflected by health centers that are able to function as true medical homes. In fact, given the extent to which population health management is embedded in the PCMH model, transformation of the overall health system in a region or state depends on the strength of its primary care system and a payment model that sustains the model and ensures continuing improvement of both quality and cost outcomes.

For example, to meet quality outcomes that are a prerequisite for receipt of shared savings, the health of the population enrolled in ACOs must be managed for preventive care as well as acute and chronic diseases. This requires organizations to excel in all the population health management domains. For CHCs, this translates as having all of the features of patient centered medical homes: integrating clinical services - including mental/behavioral and dental health - at the site of care; providing pro-active case management; and participating in clinically integrated networks that include hospitals, specialists, and other care settings necessary to manage the health of patients. This clinical integration also embraces categorical programs such as HIV/AIDS care, family planning, and the WIC program. In addition, electronic health record connectivity and health informatics expertise that includes analytics for individual and population health and financial management are critical.

[15] E. Fisher. "Growing Demand for Accountability." NQF Webinar October 1, 2009.

Population health management within a PCMH is also necessary to succeed in payment reform.[16] These reforms are designed in three stages to reward health care value, as opposed to the volume of services. To accomplish this value-focused aim, payers are evolving in stage one a payment system that often begins with paying to *support* better performance, such as payment for reporting outcomes, for case management for specific chronic diseases, or for developing HIT capacity. The second stage is *paying for better performance* with payments tied to specific outcome measures or payment withholds for avoidable outcomes such as hospital re-admissions; or in episode-based payment, for a condition that is also dependent on quality and cost outcomes. The final stage is *payment for value* with shared savings that result from care coordination and quality improvement; and finally shared savings with partial or full capitation for systems that take responsibility for patient care across all health settings over time. In addition, cost and quality outcomes are transparent to support decisions from consumers, providers, and payers. In all these payment scenarios, the capacity to manage the health of a population is fundamental.

Medicaid and private health insurance expansion make population health management even more important if costs are to be controlled, resulting in increased competition for newly-insured beneficiaries on the basis of cost and quality. The rapid expansion of health centers is designed to provide additional capacity to care for newly insured populations, and underscores the need to rapidly develop effective and efficient team-based population management systems in health centers, both to provide superior care and to compete in the newly evolving health care market place. This is especially crucial since newly insured individuals often have greater health problems due to past lack of access to care.

Finally, state health reform efforts such as the State Innovation Model programs in 25 states, and additional reforms focused on patients with complex health problems (Section 2703) approved in 21 states, are built upon the capacity for population health management.[17] For example, New York State's prevention agenda requires early population identification and risk assessment, and the state's Health Innovation Plan rests upon access, integrated care across settings, cost and quality transparency, health care value, and the promotion of population health. The New York State Delivery System Reform Incentive Payment Program (DSRIP) focuses on creating integrated delivery systems, care coordination, improvements in behavioral health, chronic disease and palliative care as well as wide-ranging prevention initiatives addressing the total population of New York State.[18] Strong population health management in the context of a PCMH is clearly a pre-requisite for substantive health center participation in and leadership of these efforts in New York and in other states.[19]

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[16] Ibid.

[17] State Innovation Models Initiative: General Information http://innovation.cms.gov/initiatives/state-innovations/; Medicaid Health Homes: An overview. http://www.medicaid.gov/State-Resource-Center

[18] Population Health Summit II: Bridging Health Care & Population Health—Payment & Financing Models. The New York Academy of Medicine, October 28, 2014; NYS DSRIP Tool Kit, DSRIP Project Toolkit

[19] S Silow-Carroll & J. Lamphere. State Innovation Models: Early Experiences & Challenges of an Initiative to Advance Broad Health System Reform. Commonwealth Fund pub. 1706, Vol. 25, September 2013

Population Health Management in Community Health Centers

Three recent studies provide insight into the status of population health management in community health centers: 1) The Commonwealth Fund national survey of all federally qualified health centers to assess whether FQHCS have the capacity to function as high-performing sites of care (2009);[20] 2) the National Academy for State Health Policy study of health center community networks to provide access to care for Medicaid populations;[21] and 3) the experience and outcomes from the five year Safety Net Medical Home Initiative supported by The Fund and led by Qualis Health and the MacColl Center for Health Care Innovation at the Group Health Research Institute.[22,23] The Commonwealth Fund survey was repeated, with minor modifications, in 2013 but the complete results have not yet been published.

A total of 795 health centers responded to the Commonwealth Survey (2009) for a response rate of approximately 70%. The survey re-affirmed the role health centers play in serving many low-income and uninsured patients and found that the majority of health centers schedule patients with their personal clinician and provide same or next-day appointments. Still, a number of the findings provide important insights about the state of population health management in health centers.

First, many centers face barriers providing off-site specialty care services for their patients, even if the patients have insurance. Health centers affiliated with hospitals reported more timely communication with hospitals about the care of their patients in both the ED and the hospital, including when their patients are admitted and the receipt of a care transition summary from hospitals.

- Nearly all health centers reported it is somewhat or very difficult to get off-site specialist care for uninsured patients and 71% reported it is difficult to get specialist care for Medicaid fee-for-service patients; 49% had difficulty getting specialist care for Medicare patients.
- Off-site specialist care for uninsured patient remains difficult regardless of whether there are referral affiliations.
- Health centers struggle to provide care coordination across settings due to lack of information, with only 23% of centers usually notified when their patients have an ED visit and only one-third of centers receiving discharge summary reports from hospitals.

[20] MM Doty, MK Abrams, SE Hernandez, K Stremikis, AC Beal. "Enhancing the Capacity of Community Health Centers to Achieve High Performance: Findings from the 2009 Commonwealth Fund National Survey of Federally Qualified Health Centers. May 2010. Pub no. 1392.

[21] M Takach & J Buxbaum. Developing Federally Qualified Health Centers into Community Networks to Improve State Primary Care Delivery Systems. National Academy for State Health Policy, May 2011. Commonwealth Fund Pub No 1499

[22] JR Sugarman, KE Phillips, EH Wagner, K Coleman & MK Abrams. The Safety Net Medical Home Initiative: Transforming Care for Vulnerable Populations. Medical Care, Vol 52, No. 11 Suppl4, November 2014

[23] K Coleman & K Phillips. Providing Underserved Patients with Medical Homes: Assessing the Readiness of Safety-Net Health Centers. Commonwealth Fund Pub. 1395. Vol. 85. May, 2010

The 2009 survey revealed that 40% of health centers had electronic health records, with 30% reporting advanced HIT functionality such as listing patients by diagnosis and lab results and medications, and those overdue for tests or preventive care. In contrast, the 2013 Commonwealth Survey reports that 93% of health centers had EHR and 85% included advanced functionalities.[24] Yet the 2013 Survey revealed only 35% of health centers can electronically send patients reminder notices for preventive or follow up care, the same outcome reported in 2009, and the rates of interoperability of EHR systems with electronic access for patients are low: just 40% could share patient information, including visit summaries, with external providers; and, only about one-third of health centers reported that patients can view test results, request appointments or referrals or request prescription refills through an online portal.

The 2009 survey also assessed health center capacity to serve as PCMH. Health centers with increased capacity to be PCMH reported improved access, communication, and coordination among specialty care clinicians and local hospitals. With the increase in health centers now recognized or accredited as PCMH (58% according to the 2013 UDS), it would be important to reconfirm these associations once data from the 2013 survey become available. The four policy recommendations from the survey report emphasized supporting health centers, specialty care providers and public hospitals to formalize referral and coordination partnerships; encouraging health centers to improve systems that enable them to function as PCMH; reforming payment systems to sustain and promote PCMH; and, increasing the capacity to use HIT for managing the health of patient populations.

The National Academy for State Health Policy (NASHP), with support from The Commonwealth Fund, identified states and community health centers that are building community networks to provide access to PCMH for Medicaid populations.[25] In Montana's Health Improvement Program (HIP), 13 FQHCs and one tribal health center and the Montana PCA hired care managers to serve beneficiaries, supported by an additional $3.75 per member per month from Medicaid. A predictive modeling software tool was used to identify patients at risk for complications or inappropriate use of services. Care managers based at the health centers provided the coordination, including the teaching of self-management skills, and arranged transportation. This shift from an out-of-state disease management vendor to partnerships among health centers and private practices for improved population health management of Medicaid beneficiaries showed cost savings and better management of chronic diseases.

A similar approach in North Carolina among Medicaid, Gaston Family Health Services, a FQHC, the public health department, and a community hospital created a Community Health Partners network that assigned a network-based care manager to provide services

[24] J Ryan, MM Doty, MK Abrams, P Riley. The Adoption and Use of Health Information Technology by Community Health Centers, 2009-2013. Commonwealth Fund Pub. 1746 Vol. 10.

[25] M Takach & J Buxbaum. Developing Federally Qualified Health Centers into Community Networks to Improve State Primary Care Delivery Systems. National Academy for State Health Policy, May 2011. Commonwealth Fund Pub No 1499

such as patient education, disease management, and medication review to the practices, leading to improved outcomes and controlled costs. In addition, the services of Gaston's dental clinic, HIV case managers and diabetes nutrition and education center were expanded to patients served by the other network sites, improving access to these important services.

The Safety Net Medical Home Initiative provides additional insights into a sustainable and replicable operational model for health center transformation. In facilitating transformation of a range of safety net practices including health centers, homeless clinics and other practices, SNMHI helps define capacity requirements for rigorous population health management. It offers knowledge about the regional capacity required to support and sustain this transformation and resources and tools to assist health centers in this vital transformation.

Begun in 2008, the SNMHI engaged sixty-five practices that serve urban, rural or frontier, migrant and homeless populations in five states. Eighty percent (52) of these practices are FQHCs. One aim of the initiative was to support practices in implementation of the 8 PCMH "change concepts" comprising Empanelment, Continuous Team-Based Relationships, Patient Centered Interactions, Engaged Leadership, QI Strategies, Enhanced Access, Care Coordination, and Evidence Based Care. Each of the eight change concepts is further delineated and described with 33 more specific key practice changes. Each of the key practice changes, in turn, is supported by key activities that were identified during the Initiative by practices and practice coaches.

Figure 1 below illustrates an example from one of the change concepts, "Empanelment" that has three key practice changes, and 13 key activities.[26]

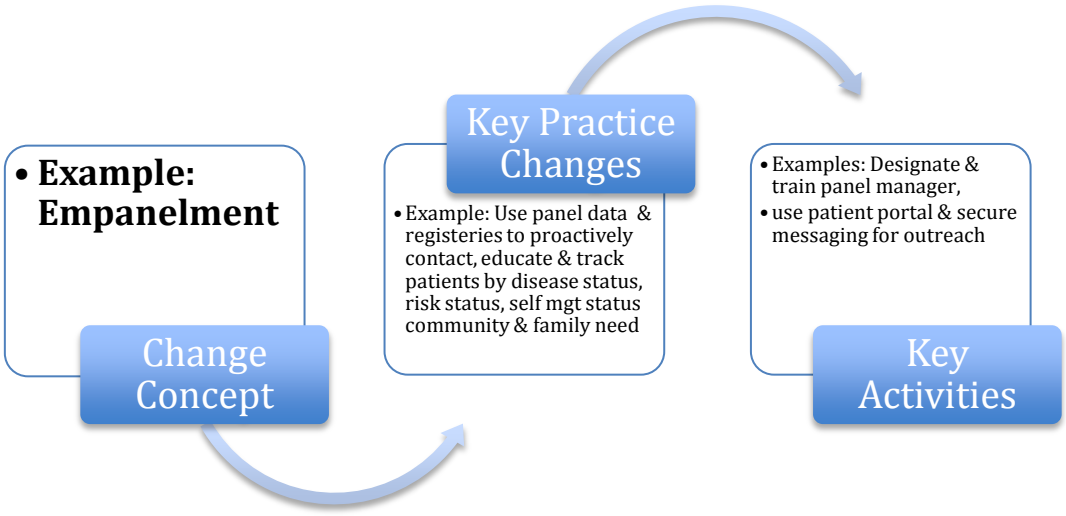

Figure 1. SNMH Change Concept Example

[26] Safety Net Medical Home Initiative (SNMHI) framework—The Change Concepts for Practice Transformation http://www.safetynetmedicalhome.org/change-concepts

By the end of the program, 100% of the practices had achieved some level of implementation of the key design features of the PCMH Model of Care, and nearly half of the sites implemented the 33 key changes to a substantial degree, with two-thirds of these sites reaching this advanced level in the latter half of the program period.[27]

In addition to increasing the mean overall scores for all eight change concepts, each individual change concept score showed improvement at each of the seven self-assessment measurement periods. The largest absolute increases were in Empanelment, Organized Evidenced-Based Care and Patient-Centered Interactions. The highest scoring Change Concepts at the final assessment were Continuous and Team-Based Healing Relationships, Enhanced Access and Engaged Leadership. Finally, at the end of the SNMHI, 83.1% of the sites achieved NCQA PCMH Recognition or Oregon's state-based Person-Centered Primary Care Home (PCPCH) recognition. Of the sites that earned NCQA recognition, 82% received level 3, the highest, and 100% of the PCPH sites in OR reached the high level (tier 3) in that program.[28]

For the purposes of this discussion, Table 2 summarizes the major domains with the lowest scores at baseline in March 2010 when the Patient-Centered Medical Home Assessment (PCMH-A) was first introduced to monitor practices' progress toward practice transformation.[29] These data provide insights into the major issues that likely remain in many or most CHCs, which have not received technical assistance support for practice transformation to PCMH. In addition, since there was such a marked improvement in the mean overall scores for all eight change concepts at the final administration of the self-assessments, the baseline scores may offer greater insights than the results from the final administration of the self-assessments.

Table 2. Lowest Scoring SNMHI Domains At Baseline (3/2010)

SNMHI Domain	Functions/Capacity Most in Need of Improvement
Empanelment	
	Registries on individual patients are regularly available to assess and manage care for practice populations, across a comprehensive set of diseases and risk states.
	Reports on care processes or outcomes of care are routinely provided as feedback to practice teams and transparently reported externally to patients, other teams, and external agencies.

[27] Sugarman, Op cit.
[28] Ibid.
[29] K. Phillips, Qualis Health, personal communication

Continuous & Team-Based Healing Relationships	
	The practice routinely assesses training needs, assures that staff is appropriately trained for their roles and responsibilities, and provides cross training to assure that patient needs are consistently met.
Patient-Centered Interactions	
	Self-management support is provided by members of the practice team trained in patient empowerment and problem-solving methodologies.
	The principles of patient-centered care are consistently used to guide organizational changes and measure system performance as well as care interactions at the practice level.
Engaged Leadership	
	The organization's hiring and training processes support and sustain improvements in care through training and incentives focused on rewarding patient-centered care.
QI Strategy	
	QI activities are conducted by practice teams supported by a QI infrastructure with meaningful involvement of patients and families.
Care Coordination	
	Follow-up by primary care practice with patients seen in the ED or hospital is done routinely because the primary care practice has arrangements in place with the ED and hospital to both track these patients and ensure that follow-up is completed within a few days.
Organized, Evidenced-Based Care	
	Care plans are developed collaboratively, include self-management and clinical management goals, are routinely recorded and guide care at every subsequent point of service.
	Clinical care management services for high-risk patients are systematically provided by the care manager functioning as a member of the practice team, regardless of location.

These areas for improvement, combined with the findings of The Commonwealth Survey, suggest that in order to achieve practice transformation in the safety-net context, a number of issues need to be targeted:

- Increasing capacity of registries and associated analytic reports which support timely patient health assessment to identity behavioral, socio-economic, preventive, and chronic disease issues that inform risk stratification and assure patient specific care planning, support, and timely follow-up.

- Patient engagement and self-management by a pro-active and well prepared and trained practice team.

- Workforce development that focuses on hiring, training, job descriptions, and human resource policies to support effective teams for population health management systems.

- Quality Improvement systems that are based at the practice level, as opposed to reliance on organization-wide committees that involve patients/families, and provide on-going feedback to the practice team on performance and identify areas for improving patient health management systems, not just categorical diseases or prevention issues.

- Care Coordination that assures patient access to appropriate care, and timely and seamless transitions across difference settings of care, that are supported through agreements among primary and specialty care providers to assure transfer of information to support care transitions as well as metrics such as inappropriate ED utilization and patient evaluation of hospital transitions to home that support continuous improvement of coordination processes.

- Access to off-site specialty care.

As identified in the SNMHI, barriers to the implementation or improvement of these issues included staff and leadership turnover and engaging or maintaining staff support for practice changes due to fatigue that accompanies rapid or intense organizational changes. In many instances, payment models that led to financial constraints did not support practice transformation. Competing priorities such as health center expansion, and EHR implementation can also be major challenges.

These findings are similar to the experiences of staff in the HRSA Health Disparities Collaboratives (HDC) and include inadequate number of personnel to work on the care transformation activities. However, the HDC study also identified relatively low-cost interventions that improved staff morale and lessened the likelihood of burnout.[30] These

[30] JE Graber, ES Huang, ML Drum, MH Chin, AE Walters, L Heuer, MT Quinn. (2008). Predicting Changes in Staff Morale and Burnout at Community Health Centers Participating in the Health Disparities Collaboratives. Health Services Research, 43(4), 1403–1423. doi:10.1111/j.1475-6773.2007.00828.

are: receiving personal recognition; career promotion; and, skill development opportunities. These strategies also correspond to the needs identified in workforce development in the Engaged Leadership category.

Learning Systems

Beginning with Together for Tots, the childhood immunization program supported by HRSA and the CDC in the early 1990s and the Health Disparities Collaboratives (HDC) (1999-2006), health centers have been engaged in organized peer-to-peer learning programs utilizing a common set of metrics and improvement or practice coaches to help facilitate clinical practice transformation for improved outcomes. These activities are now concentrated at the state or regional levels, with primary care associations (PCAs) and often Health Center Controlled Networks (HCCNs) leading in providing the structure and support for these efforts although payers, such as Medicaid, have also been involved. In addition, 17 states have initiated primary care extension programs to support practice improvement funded by AHRQ.[31] Recognizing the importance of infrastructure for practice transformation, CMMI also recently announced an $840 million multi-year initiative to support practice transformation networks and partnerships.[32]

Adapting the approach of the HDC, the SNMHI utilized a peer-driven model to provide practice support for PCMH transformation. A system of five regional coordination centers (RCC) was established that included regional stakeholders such as a state Medicaid representative. Each RCC, in turn, utilized medical home facilitators or practice coaches trained in Quality Improvement (QI), change management and the medical home concepts. Four of the five RCCs were Primary Care Associations (CO, ID, MA, OR). In collaboration with the RCCs and other technical experts, the national program team created and tested resources to help practices implement PCMH transformation. Implementation guides reflected the experiences of the practices and many tools were created by practices themselves. Practices also supported one another through site visits and facilitated interactions at regional and national meetings and topic-specific virtual learning forums. In addition, there are tools developed to help practice coaches in their role (Coach Medical Home).[33] All of these resources and tools are available free of charge. Practices identified the implementation guides, site visits to other practices, regional meetings and the national summit as the most helpful components of the learning support.[34] Key attributes of this system, as well the experience with Together for Tots and HDC are:

- Formal learning infrastructure that is locally or regionally based and viewed as credible, accountable, and trustworthy by health center governing boards staff and leadership.
- Practice Coach assistance.

[31] Health Extension - AHRQ IMPaCT Grants http://healthextensiontoolkit.org
[32] HHS Secretary announces $840 million initiative to improve patient care and lower costs (October 23, 2014). http://www.hhs.gov/news/press/2014pres/10/20141023a.html
[33] Safety Net Medical Home Initiative www.safetynetmedicalhome.org
[34] Sugarman Op. cit.

- Training and support of Practice Coaches.
- Development of on-going learning communities and peer-to-peer support.
- Ongoing shared metrics, including regular data collection and feedback.
- Financial support for learning activities, improvement staff, and information sharing infrastructure.
- Leadership engagement and support.
- Local or regional drivers of health reform aligned with aims and outcomes of program.

Currently, there are over 100 practice coaches working with the Primary Care Associations that support their members in practice transformation activities that meet all or most of the key attributes described.[35] The National Association of Community Health Centers (NACHC) has integrated this system of practice coaches into its PCMH Institute to facilitate sharing of tools and "lessons learned" among states PCAs and HCCNs coaches.

Learning Systems: Innovation

A number of HCCNs/PCAs have established or are creating improved systems for population health management. These include supporting re-designed work processes to reinforce evidence-based care, sophisticated patient registries for patient identification and risk stratification and outreach:[36]

- Ten CHCs in the Twin Cities have created an ACO for Medicaid beneficiaries with resources for care coordination, population health management as well as performance improvement specialists.

- Workforce innovation at Union Health Center (NYC) and High Plains Health Center (Lamar, CO) to train medical assistants as team-based health coaches to support self-management, improved access and better chronic disease management and outcomes.

- Bilingual (Spanish & English) patient portal established at Institute for Family Health (NYC & Mid-Hudson Valley) that also supports access by adolescents starting from age 10 and ensures communication with patients with no stable address or phone number directly to their provider.

Innovations at the national level and measurement that address population health management:

- With support from RWJF, NCQA is testing an outcome measure for risk reduction, as opposed to clinical endpoints such as blood pressure control or immunization

[35] NACHC personal communication, November, 2014 & Patient Centered Medical Home Institute (PCMH-I) Fact Sheet, March, 2014

[36] Meaningful Use Data and Case Studieshttp://www.healthit.gov/providers-professionals/meaningful-use-case-studies

status. The "Global Cardiovascular Risk (GCVR)" score is the next generation metric that assesses how well the health system reduces the risk of future adverse outcomes in the populations they serve.[37]

- The IOM Committee on Core Metrics for Better Health at Lower Cost is developing a basic set of core metrics as sentinel indices of performance for key elements of health, including people's engagement and experience with health care, quality, cost, and population health.[38]

These and many other innovations at the local, state and national levels need to be shared rapidly through locally based systems of learning, both for potential adaptation and to provide on-going feedback to the developers of these innovations at the practice, system and policy levels.

Recommendations for design and implementation of the RCHN CHF Population Health Management (PHM) Grant program

Given the current health care environment, a focus on population health management is well aligned with both local and national health reform initiatives that require community health centers to address and document high performance. In addition, given the rapid evolution of health reform at the state and national levels, the urgency to improve health center population management capacity is crucial. Success in the current and future health care environment requires a capacity for strong population health management that is sustainable and improves over time to keep pace with health reforms and pressures from the marketplace. There is no time to waste to develop population health management capacity in health centers.

Consequently, the RCHN Community Health Foundation (RCHN CHF) is committed to accelerate health center progress in population health management, building on the substantial human and financial resources health centers and their stakeholders are investing in practice transformation, payment reform, and systems for continual learning and improvement. In addition, the Foundation recognizes the variability in health center organizations, their communities and their particular regional and state health care marketplace and policy environments. The Foundation seeks to identify and support a representative and committed group of health center grantees and partners as part of a strategy to identify and disseminate a spectrum of best practices that may be adapted by most health center organizations, while building upon past and current initiatives and addressing remaining gaps for health centers at the local and national levels.

[37] 36 NCQA to Test Pioneering Way to Measure Quality, Foster Wider Use of Prevention Strategies. April 9, 2013. http://www.rwjf.org/en/about-rwjf/newsroom/newsroom-content/2013/04/NCQA-To-Test.html?cid=xsh_rwjf_em

[38] IOM Committee on Core Metrics for Better Health at Lower Cost (http://www.iom.edu/Activities/Quality/CoreMetricsForBetterHealth,aspx

The aims of the initiative are to support health center-level progress toward improving population health management capacity and outcomes, while encouraging local and regional collaborations and broader opportunities for sharing best practices. Detailed in Appendix A are anticipated health center level structure, process and practice outcomes as well as learning system objectives at the health center and regional level.

Conclusion

Given the numerous health reform initiatives at the state and national levels and health center efforts to capitalize on these initiatives while strengthening and expanding efforts for increased access to comprehensive services in their communities, what is the role of the RCHN CHF population health management grant program?

Since population health management is a core function for primary care, the grant program provides ***focus*** on a fundamental prerequisite for success in the current and future health care marketplace. At the same time, population health management is a central feature of the community health center model when coupled with community health needs assessment, community based governance, and team-based comprehensive primary care and enabling services dedicated to improving the health of underserved populations. Consequently, this grant program contributes clarity of purpose to an environment plagued with competing priorities and unaligned initiatives.

In addition to focus, the grant program is tied to a set of recognized structural, processes and clinical ***outcomes*** that provide validation for successful management of the health of CHC target populations. These outcomes are tied to the Triple Aim of health reform and are priorities for stakeholders, elected officials, payers and patients. Embedded in a learning community, these outcomes also provide direction for successful interventions and innovations while providing valuable knowledge from all tests of change, successful or not.

This grant program frames ***health centers as a vital player*** in the local health system that requires partnerships, information infrastructure and a well-trained team based workforce. On a national level, this program projects ***health centers as a national system*** as well where health center studies and data are not just analyzed but transformed into a focused population health management program where innovations are disseminated and adapted within states and across states through the vitality of learning communities and a shared health center mission.

Success, then, is defined as not only meeting the aims and outcomes of the grant program in selected health centers and PCA/HCCN partners; but, in the successful adaption of one or more population health management strategies or tools developed and communicated from grantee organizations. The vision is that each year from the beginning of the program, evidence of ***dissemination and adoption*** of program innovations and tools will spread to health centers in at least 25 other states.

Lastly, and most importantly, the grant program is an opportunity to ***apply the holistic health center model to the management of the health of a population***. This brings with it a dedication to recognize and address the roles of poverty, discrimination, education, housing and community capacity and safety. No other institution in our country brings that perspective to population health management. It is a gift to the nation whose benefits, if applied to the design of an evolving health system, will hasten the journey to bring health to all, reduce disparities, and allow for a more efficient use of the nation's resources for the good of its inhabitants and future generations.

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APPENDIX A
PROGRAM AIMS

Health Center level

- Identify how core components of population health management are implemented and sustained as part of PCMH practice transformation, and Meaningful Use adoption and community needs assessments in diverse CHC environments.
- Identify most useful existing tools and technical assistance resources necessary for successful population health management and/or necessary modifications for existing tools and assistance.
- Identify additional gaps to implementation and sustaining of population health management system in the context of local health reform.
- Identify effective approaches to recruit and engage local partners in support of rigorous population health management systems
- Identify successful methods for CHC to leverage state-based or national learning systems to learn from other practices and share knowledge gained from population health management improvement to other CHCs.

Structure and Process Outcomes:

- Creation of a CHC strategy and business plan for population health management in their environment and patient population, including a gap analysis.
- Design and execution of necessary infrastructure, partnerships in the local "health neighborhood," team based care, staff training/development, systems for patient/family engagement, and health informatics to support care management and improved quality and cost performance.
- Analysis of health issues of patient population to identify and address gaps in specialist referral networks.
- Evidence through CHC policy changes and staff assessment, of an organizational culture to support population health management.
- Identify local experts and champions to provide technical assistance to the practice and its partners to implement a successful population health management program.

Practice Outcomes:

- Health risk assessment/risk stratification on patient population in at least one site.
- Management of at least one prevention outcome (e.g. smoking, contraception, immunization) and one chronic disease and/or over-utilization issue in the defined patient population. Metrics should be UDS or locally aligned measures with Medicaid or other local health initiatives and programs. Recent recommendations for core measures for the evaluation of the Patient-Centered Medical Home that include cost, utilization and clinical quality may be a useful resource.
- Referral arrangements with specialists as documented by timely access, exchange of pertinent clinical information to specialist before scheduled appointment and receipt of specialist report within 3-5 business days for non-urgent referrals.

- Tracking of all ED visits not leading to a hospital admission within 24 hours; and all hospitalizations of site patients within 24 hours of admission and 24 hours before transition from hospital to home.
- Documentation of a self-management goal(s) for all patients in site population.
- Twice yearly patient experience assessment of target patient population based on CAHPS Clinician and Group Survey for adults or children; or, patient experience survey currently in use by the state Medicaid program.

Learning System Outcomes: Health Center and State/Regional Levels

- Written agreement with state or regional PCA/HCCN on integration of CHC population health management improvement program with existing PCA/HCCN learning systems and initiatives.
- Documentation of dissemination of experience, tools or resources from grant program to other safety net practices in state or region.
- Transparent sharing of outcome data from population health management grant program with other CHCs as part of peer-to-peer learning.
- Evidence of in person or virtual site visits to learn from other programs and/or visits from other CHCs to the grantee to learn improved methods for population health management.

Learning System Outcomes: National Level

- Establish learning community of grantees and partner PCAs or networks that
  - Shares aims/goals of individual grantees;
  - Shares outcome measures on on-going basis, including lessons learned from both successful and failed tests of change;
  - Holds monthly conference calls focused on needs of grantees and lessons learned to improve population health management;
  - Provides guidance in identifying additional sources for technical assistance;
  - Informs RCHN CHF strategies for dissemination and sustainability of progress;
  - Serve as an on-going advisory group on the population health management program.