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**A Comprehensive Health Home:
Using The Expanded Care Model of the Collaboratives**

**Implications of Convergence of the:
Chronic Care Model, Planned Care Model
And Patient-Centered Medical Home Model**

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Objectives:

- Describe a “Comprehensive Health Home” using the “Expanded Care Model”
- Describe details of the Expanded Care Model framework via an analysis of how insight on how this model combines lessons learned from the “Chronic Care Model,” the “Planned Care Model,” the “Patient-Centered Medical Home Model” and other recent discussions of the “Medical Home.”

Introduction

Major shortcomings exist in U.S. Healthcare. Disparities in health care and health outcomes are significant. The Disparities Reducing Advances (DRA) Project, funded by private-public partnerships, is a multi-year, multi-stakeholder project for analyzing future promising practices for reducing U.S. health disparities. The Health Resources and Services Administration (HRSA), an agency within the U.S. Department of Health and Human Services, has operated various Health Disparities Collaboratives over the last decade. As previously reported, the DRA Project has identified the Health Disparities Collaboratives, and the potential use of the “Expanded Care Model” framework, as an important disparity reducing advance.¹ The Health Disparities Collaboratives (HDC) has been an evidence-based quality improvement effort to increase the quality of health care being delivered by the U.S. safety net providers and as a strategic plan to reduce disparities of health outcomes. As evolved and tested within the Collaboratives, the “Expanded Care Model” is an emerging “general systems” framework based on proven engineering methods for organizing synergy of various changes in the way that health care is coordinated and delivered.

This report: describes the framework of the “Expanded Care Model” contrasting it with the “Chronic Care Model” and the “Planned Care Model”, as well as recent parallel development of the “Patient Centered Medical Home Model” and other “Medical Home” Models; and considers the opportunities for integrating the insights gained for using the lessons together to reduce health disparities. This paper describes how this converged model can help to generate quality improvement that can clarify the operation of a comprehensive health home. The DRA Project and other futurist analysis and predictions have identified a number of related findings (reported elsewhere by the Institute for Alternative Futures²). Most healthcare delivery currently fails to adequately act as agent on behalf of the patient. The mosaic of care delivery as it exists often fails to anticipate preventive needs beyond screening and vaccinations. It fails to address long-term issues presented during acute episodes of treatment. It also fails to coordinate across the multiple providers one patient might have. And the future will bring forces that will likely exacerbate some of these shortcomings. Healthcare and the treatments for many conditions will become more complex; genomics promises to give indications of likelihood of susceptibility to diseases, but with many caveats; biomonitoring data will yield

new “vital signs” that will add to medical knowledge and will require integration into clinical practice.

The DRA Project perceives that disparities in healthcare exist and that innovations may lead to better health. However, it also considers likely that “normal” relatively passive diffusion of innovations brings with it a situation whereby poor people are likely to be found near the end of that passive adoption period. The extended diffusion time will yield greater disparities in the absence of system improvement processes that shorten these “normal” diffusion times. Based on the DRA Project analysis, the next generation of the HRSA Collaboratives can be anticipated possibly to use the Expanded Care Model framework to organize better the validated efforts for addressing many current health problems, as well as emerging challenges, into a framework for systemic intervention. The resulting comprehensive health home may provide a better dissemination vehicle and more robust chances of improving health disparities, because it has a chance to apply dissemination science systematically.

The Expanded Care Model

The “Expanded Care Model” framework has evolved from the original “Chronic Care Model” developed by Dr. Ed Wagner at the MacColl Institute for Healthcare Innovation in Seattle in the 1990s³ and whose copyright is owned by the American College of Physicians. A large variety of iterations of the framework exist from various national and international settings and can be found in the Improving Chronic Illness Care (ICIC) website funded by the Robert Wood Johnson Foundation. Permutations of models include: the “Care Model,” the “Planned Care Model,” and the “Expanded Chronic Care Model,” which have been used by the Health Disparities Collaboratives in various pilots.⁴ Especially in the diabetes collaborative (the longest-running chronic disease management collaborative in the nation), use of the Chronic Care Model framework has been shown to yield better overall health in the treatment of chronic disease and lower long-term costs than the traditional approach to delivery of primary care.⁵ A detailed discussion of the model is beyond the scope of this paper, but it is fair to say at this time that, as used in the Health Disparities Collaboratives, the Expanded Care Model is a robust framework for discussion of most of the critical elements needed for quality improvement of health care delivery.

To understand these models in relationship to each other, and to place their evolution in historical perspective, distinction should be made between “primary care” and “primary health care.” The International Conference of Primary Health Care, held at Alma Ata on September 1978, was “the first international declaration underlying the importance of primary health care.”⁶ A summary of various related international and U.S. dialogues perhaps could be paraphrased with some general concepts:

- Western medicine, it has been argued, developed from a disease-centered approach and in the U.S. is delivered largely by solo-physician medical practices (or single specialty small group practices).

- Primary health care invokes a conscious shift of focus away from disease to health promotion as well as from a physician to a team of caregivers from multiple disciplines.
- In primary care, the goal appears to be to rid the patient of disease; in primary health care, the goal desired is to optimize the individual's health.
- In this context, optimizing health needs to involve far more than the conventional medical procedures that fall under the umbrella of primary care.
- Internationally, and in the U.S., primary health care includes more diverse services than primary care, and it includes a larger team than merely the doctor or the doctors.
- In world-wide experience, and with an emphasis of improving both quality and access to care, primary health care generally has been more comfortable with expanded roles of midlevel providers such as nurse practitioners or a larger role of the physical therapist or mental health therapists.
- As part of a team approach, for example, it is worth noting that primary health care practices generally have more widely accepted the idea of relatively autonomous therapists; or mid-level providers that use clinical and operational guidelines previously approved by the physicians, as opposed to requiring that all staff be only directed by immediate supervision by the physician, as was historically typical for primary care.

The Expanded Care Model as described in this document is intended to be a model of primary health care. It is intended to apply in a manner that is broadened out to the community – beyond the typical concerns of “practice only” level of primary care. The framework was developed as part of analysis of lessons learned from the Health Disparities Collaboratives – especially as applied in the safety net via a comprehensive approach to delivery of care. Those discussions were based on sorting insights gained from the evidence developed for the Chronic Care Model.

The Chronic Care Model approach has shown significant improvements for patients, though the financial implications of the quality improvement emphasis are still being analyzed.^{7, 8, 9} The latter activity has resulted in the name “Planned Care Model;” or just the “Care Model,” by various authors. Analysis of how to encourage increased concrete dialogue about the elements of importance to optimizing health outcomes that were outside of the primary care practice resulted in the name of the Expanded Care Model. It is a broader framework to encompass the clinical, operational, and fiscal considerations, as well as the fact that patients do not simply get medical advice from the primary care practice. Furthermore, it was critical to acknowledge and factor in that lifestyle considerations and other considerations are important determinants of health outcomes, both for the individual and for the population.

To clarify in more detail, it is worth noting that the nomenclature of the “Expanded Care Model” is derived from the expansion of the Chronic Care Model in a number of ways, both in theory and in practice. A more detailed discussion requires that we compare the models pictorially and describe the elements. Three figures are needed, which have evolved and

“expanded” various elements – or their meaning or use – as they have been developed progressively over the years.

Figure 1 presents a recent version of the Chronic Care Model – originally developed in 1998 – but now depicted with additional elements reflective of the Expanded Care Model. Eleven prime completely separate components are seen: 1) Self-Management Support (SMS), 2) Delivery System Design (DSD), 3) Decision Support (DS), 4) Clinical information Systems (CIS) within 5) the Health Care Organization (ORG); in the context of the 6) Community Resources and Policies (CRP), along with 7) the Informed and Empowered Patient and Family (IEPF); 8) the Prepared and Proactive Practice Team (PPPT); 9) the “Productive Interactions” (PI) of all the above listed elements; put through 10) the Quality Lens Services (QLS) of modern quality services that are consistent with the Institute of Medicine (IOM) definition of quality (namely that there be patient-driven, timely, effective, and evidence-based and safe practices that are coordinated); 11) Individual and Population Outcomes (IPO) – Improved Achievement or Improved Outcomes (a completely separate and distinct component in the formal model that is sometimes missed by many or thought of with regards to individual patients only, but is formally considered in the Chronic Care Model as being meant to be inclusive of whole population-based outcomes, and community outcomes). In 2003, “to reflect advances in the field,” the Improving Chronic Illness Care (ICIC) Program supported by the Robert Wood Johnson Foundation added additional components to the “Care Model” of particular value that included Patient Safety (in Health System); Cultural Competency (in Delivery System Design); Care Coordination (In Health System and Clinical Information Systems); Community Policies (in Community Resources and Policies); and Case management (in Delivery System Design). The QLS and its detailed elements were not in the Chronic Care Model

Figure 1: Chronic Care Model



Figure 1 Source:

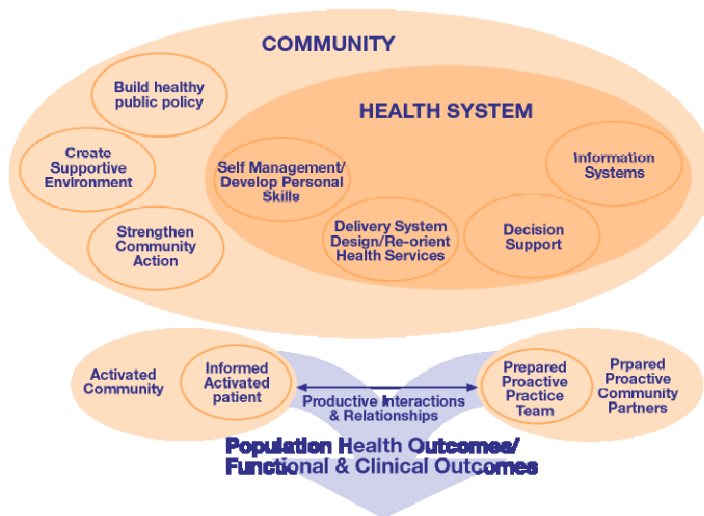
Figure 1 from Wagner, EH. Chronic Disease Management: What Will It Take to Improve Care for Chronic Illness? Effective Clinical Practice. 1998;1:2-4

http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2,

Accessed, April 9, 2008

Figure 2 presents an expanded view originally recommended by the Canadian Province of British Columbia in 2001. That version of the model expands the public health aspects of the component labeled community resources and policies (CRP) and is known as the Expanded Chronic Care Model. The original diagram tried to pictorially depict more depth to the “Community,” moved the ovals from the “Org” out further to “Health System” and added “Activated Community” and “Prepared Proactive Community Partners” as well as “Population Health Outcomes.” This depiction has value in addressing social determinants of health (as discussed later in the paper). It also must be noted as this picture of the model was the first to expand the concept of the original Chronic Care Model.

Figure 2: British Columbia's Expanded Chronic Care Model



Created by: Winifred Barr, Sylvia Rieckman, Inmaculada Maria-Luis, Lisa Underhill, Anita Dethlefs & Christine Rasmussen (2002)
Adapted from Glasgow, R., Orleans, C., Wagner, E., Curry, S., Solberg, L. (2001). Does the Chronic Care Model also serve as a template for improving prevention? *The Medical Clinician*, 79(4). and World Health Organization, Health and Wellbeing Canada and Canadian Public Health Association. (1998). *Ottawa Charter of Health Promotion*.

Figure 2 Source:

http://www.improvingchroniccare.org/index.php?p=CCM_Gallery&s=149

Accessed, April 9, 2008

Figure 3 presents an evolved version of the “Care Model,” as drawn by the MacColl Institute and the ICIC. This version of the drawing of the model depicts the “lens” like image – which the Health Disparities Collaboratives have called the Quality Lens Services (QLS) - for displaying how the various components in the upper part of the model interact with each other to achieve the outcomes and interactions of the bottom components of the model and the “improved outcomes.”

Figure 3: MacColl Institute – Improving Chronic Illness Care - Care Model

The Care Model



Developed by The MaColl Institute

Figure 3 Source:

http://www.improvingchroniccare.org/index.php?p=ICIC_Expanded&s=156

Accessed, April 9, 2008

With regards to the Expanded Care Model, other expansions of the meaning of the various elements of the original Chronic Care Model include:

- A broader sense of what needs to be encompassed by the meaning of the element of self-management support (SMS) and an Informed Empowered Patient and Family (IEPF), for example by acknowledging that a significant percentage of the population under care by the safety net use CAM.

- Recognition of the fact that a large percentage of the population in the US seek medical information for self-management support via the web (the implication being that self-management support (SMS) needs to be depicted minimally as being partly in Community (CRP) and partly in the Organization/Health System (ORG), a situation which is usually not depicted in this manner in the Chronic Care Model drawings which place SMS only within the organization element),
- Recognition that Decision Support (DS), Delivery System Design (DSD), and Clinical Information Systems (CIS) cannot be seen any longer as only lying within the organizations (ORG) or even just in the health system bubble.

In the Expanded Care Model these four elements (CIS, DS, DSD, and SMS) are shown pictorially as being moved out from being in the ORG only. They are placed **half in** of the organization and **half out** in the community context – instead of being left entirely **in** the organization as the older models depict them. In other words, all four of these elements straddle the line of demarcation that defines the organization or system. The reason why this shift is necessary can be understood when one considers an example of the element “Clinical Information Systems” (CIS). The modern version of CIS – whose modern version have to account for the so called RHIOs (Regional Health Information Organizations), a phrase that did not exist in the U.S.A. when the Chronic Care Model was created. This type of CIS is clearly engaging activity both in the ORG and outside of the ORG, out there in the Community. Modern Health Information Technology (HIT), capable of encompassing everything that is truly taking place at this time, must be broader in concept than merely the traditional individual tracking medical record, the electronic health record (EHR), practice management systems, chronic disease management programs, or multi-condition registries that are owned and operated only **within** a particular single organization. To be really patient-centric, given the exchange of information that is required for the patient’s benefit, HIT has to be seen as both **within an organization** and **outside of the organization**.

From the perspective of the DRA Project and Bio-monitoring Futures Project (BFP)¹⁰, and consistent with related findings reported by the Institute for Alternative Futures, to be a significant disparity reducing advance, interoperability in this sense may be perhaps a new requirement of the models; not just with regards to the electronic capacity to send and receive data, but with regards to the fact that this **information should be aligned for the benefit of the patient, regardless of their socio-economic status**, and not just for the benefit of the billing ability of the medical practice, or the tracking of encounters by the insurance carrier company. Stepping off some of the details of the formal models, we hasten to add that the overall sense of this quality improvement activity should be kept in mind. Apart from understanding the details of the components with models, it is also very important to remember the evolving national context of the overall implications for the patient and community, and for improving the outcomes and health disparities in particular.

The Expanded Care Model framework is intended to be inclusive about empowering patients for self-care, coupled with mobilizing population and community resources to help facilitate the individual patients' personal responsibility and ability to optimize self-care. In these models, the "informed and empowered" individuals are described as working in coordination with an inter-disciplinary "prepared, proactive, practice team" of care providers that has committed to coordination of all these activities, with each other and with the patient/client. The relevant components of primary health care delivery are organized together to try to optimize and activate the engagement of both the individual/client and the broader health care team. In addition, the Expanded Care Model promotes a "prepared pro-active organization," in a culture of effectively and efficiently delivering safe, high quality care. This is an extrapolation of lessons learned from Health Disparities Collaboratives, grounded on the evidence-based methods and evidence-based literature has begun to accumulate for the value of the Chronic Care Model in a variety of process outcomes¹¹ and health outcomes.¹²

It is also worth emphasizing that after a decade of testing in the United States, the Chronic Care Model now is being used widely in the Chronic Disease Management Collaboratives within the Health Disparities Collaboratives and has been described in the literature as being used by many other quality improvement efforts in a variety of private practices, nationally and internationally.^{13, 14, 15} Chronic Disease Management Collaboratives have shown across multiple conditions that this systems improvement approach can yield better process results and better health outcomes simultaneously. Although more definitively shown to date in formal evaluations of the oldest Health Disparities Collaborative (the Diabetes Collaborative), many similar insights have been achieved by the Cancer Screening Collaborative Demonstration, the Prevention Collaborative Pilot, the Diabetes Prevention Collaborative Pilot, and the various Business Case Redesign Collaboratives and other Advanced Access Collaboratives. Additional critical lessons-learned were derived from the variety of community system collaboratives such as the HIV/AIDS Collaborative, the Perinatal and Patient Safety Collaborative, or other HRSA supported collaboratives like the Organ Transplant Collaborative, and the various specialty collaboratives and education collaboratives that took place outside of the Health Disparities Collaboratives.

In summary, the potential value of the combination of all these insights required discussion about how to integrate the lessons learned from all of these activities. As a result, the Expanded Care Model framework was proposed – a framework intended to be able to incorporate the insights from all of the above variety of collaboratives. By bringing quality improvement systems to community health centers in a wide range of conditions, the Expanded Care Model has shown promise for reducing health disparities. Similar approaches are being used by the Indian Health Service quality improvement efforts and "Advanced Access" operational quality improvement efforts by the Veterans Health Administration as well as within a wide variety of private practice quality improvement efforts funded by various foundations and private-public partnerships.

From the perspective of the Disparity Reducing Advances (DRA) Project priorities, the Expanded Care Model framework was seen as particularly significant by the subject matter experts that were consulted because the effort shows promise to bring quality enhancement to the safety net in a manner that is not only addressing chronic disease management but is also inclusive of prevention and cancer screening. In addition, the Expanded Care Model shows promise in potentially simultaneously applying all these general-systems insights and processes to the patient in a holistic manner, so that multiple co-existing conditions might be able to be addressed simultaneously, for integration of the total care of the patient. This approach represents a potentially huge added-value to the application of lessons learned from the collaboratives.

In light of the current discussions of the “Medical Home” taking place nationally, it is relevant to broaden the analysis also to address the “comprehensive health home” implications as used by the HRSA supported health centers. This is particularly true for understanding how community health centers deployed the quality improvement collaboratives locally and nationally, since the work shows promise for better care coordination and much better health outcomes. To understand the “comprehensive health home” a discussion of the “medical home” dialogue is necessary.

The Patient-Centered Medical Home Model

In March 2007, the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), the American College of Physicians (ACP), and the American Osteopathic Association (AOA) developed a consensus statement on medical home principles, named the “Patient-Centered Medical Home Model.”¹⁶ This consensus evolved from the early “Medical Home Model” developed by the AAP and the AAFP combined with the “Advanced Medical Home Model” tendered by the ACP in 2006. The professional organizations are encouraging further study of these ideas which were recommended on the basis of the “principles of the care model.”^{17, 18}

To help understand the array of historical models and their combinations, it may help to clarify that the term “advanced medical home”, as proposed by ACP, is rather specific, but there exist a plurality of definitions for “medical home.” The AAP offers an often-cited definition: “A medical home is not a building, house, or hospital, but rather an approach to providing comprehensive primary care. A medical home is defined as primary care that is accessible, continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective.”¹⁹

Historically, professional groups have focused on the importance of continuity of care and have continued to do so in recently recommending further study of these models. The ACP in particular has recommended further study be funded by the NIH and AHRQ.²⁰ As a result, medical home model evaluations are being considered for funding by private foundations and

government agencies for study in a variety of settings. The ACP, AAFP, AAP, and UnitedHealth Group are engaged in one such study. In this pilot project, six medical practices in Florida will operate as medical homes and be reimbursed accordingly. This effort rather quickly has generated considerable interest in various policy circles since, as reported in the announcement, the financial incentives will be quite different than the current fee-for-service models; physicians and medical personnel will be compensated for their preventative measures and their efforts to help patients on a continual basis, as well as efforts to connect patients with other specialists.²¹ On the other hand, a recent UCSF, UC Berkeley, U of Chicago study of large private medical groups reported a lack of essential elements of a medical home raising issues of ability to deliver, which will require further study. Various efforts are underway to research the evidence-based aspects of the entire framework of this new Patient-Centered Medical Home Model.

A goal in the new consensus developed Patient-Centered Medical Home Model is to foster continuous healing relationships.²² The family is considered an important part of the team of people caring for the patient, and the family's beliefs and values are taken into account when health care decisions are made. Another aspect of the Patient-Centered Medical Home Model is a diligent attention to detail concerning follow-up health care appointments as well as referral to specialists. Determination to make sure that regular check-ups and screening procedures actually happen is touted to improve health outcomes overall, by preventing complications. Thoroughness about screening is reputed to also increase cost-effectiveness, perhaps because it is better care, perhaps because it prevents extensive need for additional secondary and tertiary care.

It should be noted that criticism exists in some health policy circles regarding a "physician-centric professional bias" of the Advanced Medical Home Model, although outcomes results and policy studies of the Patient-Centered Medical Home Model have not been published to date. The psychiatric literature and nursing literature has other models that are particularly focused on the patient-centric considerations. Despite criticism, the Patient-Centered Medical Home Model should be acknowledged as being more patient-centric than older medical care models in the United States.

Proponents of the Patient-Centered Medical Home Model claim to place trust and respect as central considerations. It is claimed that patient and family in this model "know" that the medical team values their treatment preferences, and that they trust that the medical team is giving them the best care, or that at least they have a right to bring up questions or concerns without this being considered inappropriate. Respect is a central assumption. The medical staff is purported to have particular recognition of the non-medical facets of their patients' lives, and respect for the value of the patients' time – hence the importance of minimizing delays in access and waiting room delays.

In summary, with regards to the “Patient Centered Medical Home” (despite the enthusiasm being generated and interest at this time) it remains objectively yet to be seen whether this theoretical improvement in this model is achieved in practice. The various projects to test the new model via demonstrations and evaluations are not yet far along.

For reasons detailed below in the discussion of Table 1, a comparison of the approach that community health centers have been doing in their engagement of the quality improvement collaboratives via use of the Expanded Care Model framework promises to be of value. This comparison may help in understanding the meaning of what the the community health centers have been doing with their approach to a much more robust “comprehensive health home” approach that merits consideration, especially in addressing health disparities.

Table 1: Comparison of Medical Home Models and the Expanded Care Model

	Primary Care Model of Care	Primary Health Care Model of Care	Patient-Centered Medical Home Model	Expanded Care Model being used for Comprehensive Health Home coordination of care (Evolved from the Chronic Care Model, Planned Care Model and Care Model)
Care delivered primarily by a physician	Yes	No, care is said to be delivered by a team of providers from multiple disciplines (an inter-professional team) – this model internationally is historically particularly open to fully including acceptance of mid-level providers and some of the culturally more traditional complementary and alternative medicine (CAM) as used in various culture around the world	No, care is seen to be delivered by a team of providers from multiple disciplines, although some see this new model as somewhat physician-centric (much like primary care) - since explicit blending of mid-levels is not articulated by this model	No, care is seen to be delivered by a team of providers from multiple disciplines, including a wide array of fields and backgrounds such as mid-levels (medical and mid-wifery) and other clinical fields such as pharmacy, oral health and dentistry, dental hygienists, health educators, nutritionists, psychologists, physical therapists, and public health fields including data experts such as statisticians and process-change experts, as true members of the delivery inter-professional team
Care explicitly includes the patient as a member of the team of decision makers about care	No	No	Yes, and places responsibility on the patient for engaging in this decision process	Yes, and places responsibility on the patient for engaging in this decision process
Widely Adopted?	Yes	Yes	No, this is a relatively new model (as of March 2007) but has caught rather serious interest in policy circles.	Now becoming the dominant model for quality improvement discussions building on IOM sense of quality care, although further study is needed, and although this model is not well understood in some health policy circles.

Comprehensive Health Home

Discussion of Table 1: Key Aspects of Expanded Care Model: As being used for Comprehensive Health Home coordination of care (compared to Primary Care Model, the Primary Health Care Model, the Patient-Centered Medical Home Model)

From the point of view of the Expanded Care Model framework, it should be pointed out that most medical home models can be said to not have fully encompassed the historical principles of primary health care. This evolving re-iterative process may be clearer to understand if discussed as seen in a chart format shown in Table 1.

The “comprehensive health home” can start to be understood better if one realizes that the community health centers deployed the Health Disparities Collaboratives in a manner that tried to remain true to the historical genesis of the health centers. This genesis was based on Community Oriented Primary Care (COPC) which came to the United States from an international perspective where it was developed. As a result, the community health center approach always was a much more along the lines of a true “comprehensive health home” view. This view is concerned with the whole community and not just with the operation of the medical practice per se – as might be approached by some more traditional “primary care” practices working with the “medical home” framework. This differentiation may be particularly useful for discussion of the differences of these various models. Table 1 differentiates aspects of “Primary Care” in its traditional sense in the United States and the “Inter-Professional Team Care” approach of some of models outlined in this paper.

Historically, in the U.S., primary care pediatricians, family doctors and general internists, as private practice solo or small single specialty group physicians, were the main advocates and representatives of the primary care model of care. Primary Health Care was advocated internationally at Alma Ata in 1978. Globally, with the further development of mid-level practitioners, such as nurse-practitioners and physician-assistants and caregivers in other areas of expertise, the primary health care model evolved further and the team-approach to delivery of care began to be articulated more clearly. Nevertheless, it needs to be recognized objectively that this international primary health care model (in its general historical sense) did not truly depict in the formal model the patient as being in the decision-making role or as a member of the decision-making team process. In evolution of the formal medical models for care coordination (other than possibly in the psychiatry literature and in the nursing literature), it was only at the point of the Chronic Care Model in the 1990s that the elements “Patient Self-Management” and “Informed Empowered Patient” formally were added to the care process for clinical decision-making. In previous models the patient was missing from the model depictions. Medical models of the pre-Chronic Care Model generation mostly depicted medical staff doing something for the patient, to the patient, or on the patient’s behalf. The notion that the “Informed Empowered Patient” interacts with a “Prepared Proactive Practice Team” only

came into formal depiction in the formal Chronic Care Model. That a dynamic interaction was required that in particular involved certain important dimensions of quality was subsequently introduced into the Chronic Care Model, based on Institute of Medicine (IOM) definitions of the various dimensions of quality.

From a historical perspective, although evidence about the Chronic Care Model had begun to accumulate during the last decade, in 2007 a separate need came to exist to incorporate the additional parallel evolution of the Advanced Medical Home Model, which was addressed by professional organizations via the consensus process of the evolving Patient-Centered Medical Home Model of care, and the more general systems-aspects of the Expanded Care Model as being evolved in the Collaboratives.

It is critical to note that the Patient-Centered Medical Home Model, although partially based on the Chronic Care Model principles, still does not go nearly as far on some dimensions as already had been evolved from the international primary health care perspective. For example, when considering that a large percentage (approximately two-thirds) of the population in the U.S. uses on a routine basis complementary and alternative medicine (CAM), the only framework that may be able to encompass all of these considerations appears to be the Expanded Care Model. This is because the Expanded Care Model insists that there be a commitment to evidence-based practice not just with regards to traditional clinical guidelines, but also to evidence-based practice with regards to any CAM that is to be considered in the comprehensive health home. Furthermore, the collaboratives have insisted on remaining fully evidence-based in terms of scientific and statistical rigor of analysis with regards to evidence-based management, and evidence-based systems change processes and not just about the clinical practices.

The Patient-Centered Medical Home Model clearly is being encouraged by professional organizations, although, as stated previously, in some policy circles this model is considered rather disease focused and rather physician biased. For example, the clinical pharmacist as a full-member of the clinical team and delivery system design (DSD) has not been well articulated by the Patient-Centered Medical Home and other physician-led medical home discussions.

These considerations are of current importance as HRSA has begun already the new national collaborative on Patient Safety and Clinical Pharmacy Services. This cross-cutting patient-centered collaborative requires integration of lessons learned from previous collaboratives and other insights from all of these various models. The inter-disciplinary team approach to this “general-systems” collaborative requires the integration of clinical, operational, and fiscal collaboratives; as well as the community systems collaboratives.

The resulting outcome of this analysis is the realization that the community health centers have been deploying the quality improvement collaboratives and related health disparities insights in

a manner that can only be described as a robust and truly comprehensive health home approach. This approach is probably based on the COPC genesis of the health centers.

The repercussions and possible value to the health care industry as whole needs to be emphasized because the comprehensive health home approach has been grounded on gathering data and using it for analysis of outcomes and for quality improvement. In other words, the collaboratives worked to improve both processes and outcomes and have by now accumulated fairly sophisticated insight about quality improvement and performance measurement (including advances of composite measures and indexed performance measures).

Social Determinants as they relate to these Models

There is a growing literature on the relatively larger role that factors other than health care play in health outcomes and disparities. This literature points to the role of the social determinants of health.²³ While it is not necessarily the role of health care providers to provide jobs, housing, safe/activity friendly neighborhoods, and healthy foods, health care providers do have a role in prescribing healthy eating and activity. Just as Patient Centered Care would be concerned about whether a patient can factually obtain the medication that was prescribed, in some cases dealing with the social determinants may be appropriate for health care providers that are using the framework of the Expanded Care Model.

Health care providers are increasingly using physical activity as a focal point of care. For example, Canadian physicians have developed a “green prescription pad” to enable writing prescriptions for activity.²⁴ And as noted in Figure 2 the Expanded Chronic Care Model adds several active components relative to the larger community environment: building healthy public policy, creating supportive environments, strengthening community action, activating the community, developing prepared proactive community partners.

A specific example in the context of an U.S. community health center is the Addabbo Community Health Center in Queens. With 17 miles of ocean front, much of it board walks, there was an opportunity for exercise but the neighborhood was unsafe much of the time. Addabbo Center providers, encouraging physical activity as part of their treatment and prevention recommendations, wanted the resource of the board walk to be available. The Center worked with the local police to identify sections of the board walk and times of the day when increased police patrols would make the board walks safe.

Integration of Models

For this report, it may be useful to think that conceptually, the collaboratives as a whole has been named by some as a “national community of practice” as well as a national learning community. These two perspectives of the quality improvement work that has been done help to frame the sharing of insights about the various models and of the mutual assistance that the

various partners and stakeholders provide to each other in these quality improvement activities.

Overall, despite the formal Health Disparities Collaboratives changing and not being operated via the cluster infrastructure, the national experience with the Expanded Care Model framework continues to evolve and continues to show promise. This patient-centered, interdisciplinary team approach to a general-systems quality improvement collaborative has enabled improvements in delivery of comprehensive health home that implies that there is value in the integration of lessons learned from a variety of historical models.

Interestingly enough, between the values of the Expanded Care Model and the values of the Patient-Centered Medical Home Model, the “simple rules” of IOM’s 2001 “Crossing the Quality Chasm” report are mostly met. The IOM “Chasm” report is a major statement of health care systems quality. The report identified six aims for health care and a corresponding set of “new rules for 21st century health care”. IOM’s new rules for 21st century health care include: care based on continuous healing relationships, care customized according to patient needs and values, knowledge shared and information flowing freely, patient as the source of control, decision making that is evidence based, safety as a system priority, considering transparency necessary, anticipation of needs, continuously decreasing waste, and cooperation among clinicians. The Expanded Care Model is consistent with expansion of other dimensions such as, that services should be patient centered, timely and efficient, evidence-based and safe, and considerate of health literacy needs of the patient and family. Integration of all these models would appear to be of value.

On a practical level, a variety of insights continue to evolve and need to be both acknowledged and incorporated. The most relevant set of insights to the current integration analysis include those of the Cancer Collaboratives Demonstration and the Depression Collaborative. In the Cancer Demonstration, the local “Communities of Practice” insights of coordinating voluntary groups who collaborate to learn and work together are well described in the literature by Wenger and Snyder and recently as used in the Cancer Collaborative Demonstration as published by Taplin et al.²⁵ These activities point out that improving the care delivered within one organization was not sufficient. A clear need existed also for coordination with other local organizations and individual providers in the community. Appropriate hand-offs were crucial to the improved delivery of the cancer screening and of treatment and appropriate follow-up. Regional “communities of practice” were useful in the demonstration.

In addition, it is important to note that care coordination is a key ingredient and has been noted for several years now. For example, the Four Quadrant Clinical Integration Model, articulated well by Minkoff and his colleagues, and co-evolved using Depression Collaborative insights, essentially proposes a truly bi-directional coordination of care, between the primary health care home and the mental health provider. This “care coordination” both within any given care

organization and the broader “community of practice” aspect was similarly described in the cancer collaborative. The implications argue for a comprehensive health home approach.

One final set of detailed considerations relate to the genesis and history of the Health Centers. Although often forgotten by many, it is important to remember that the Community Health Centers were developed using the framework of the Community Oriented Primary Care (COPC) model. COPC is an approach and process for integrating primary care with public health developed and described first by Sidney and Emily Kark in the 1940s in South Africa.^{26, 27} Dr. H. Jack Geiger had worked with the Karks in South Africa and led the efforts to start the first Health Centers in Mississippi and Massachusetts using the COPC model.

Partially because of its consistency with the historical COPC framework, the Health Disparities Collaboratives have generated a wealth of insights and practices that continue to evolve the health center activities as a national network. Two reports addressing the congruency of this older framework have caught the attention of the DRA Project: “Building the Bridges to Cross the Quality Chasm,” written by the Integration and Alignment Group of the HDC, in February 2007,²⁸ and “Community Oriented Primary Care, Care Model, and Communities of Practice: Helping Health Centers Eliminate Health Disparities,” written in May 2007.²⁹ Taken together with the recent discussions about the medical home, patient centered care, and the convergence of these models, these articles lead to the insight that it may be timely to consider using a different meaning for COPC.

We would encourage a more universal and powerful meaning of: **“Community Oriented Personal Care,”** which would handle preventive, primary care, and other levels of care perfectly well, without having to focus on primary health care only; and which is entirely consistent with the personal care responsibility of the individual coupled with the system also accepting ownership for the systems-issues that would be required. The evolution of the Expanded Care Model and the potential convergence with the Patient-Centered Medical Home Model could be achieved by a shift in meaning to “Community Oriented Personal Care” while keeping the COPC acronym widely used in the literature. This is feasible in the comprehensive health home model being used by the health centers and is considerably stronger than the “Community Oriented Planned Care” interpretation that some have recommended (and which seems to go back to the “primary care” framework rather than moving the effort along the “primary health care” or “comprehensive health home” track.)

Practical Insights from the Comprehensive Health Home

In terms of reducing health disparities, providers serving low wealth communities and communities of color show promise to overcome what IOM has identified as “unequal treatment”³⁰ via a variety of quality improvement efforts. The Health Disparities Collaboratives in particular have shown that they can improve care and improve outcomes

among the communities served by community health centers – typically lower income and often communities of color. This quality improvement has been done with a method that purposefully tries to deliver a comprehensive health home approach. A wide array of validated tools and practical guidelines and promising practices haven been accumulated and are now widely available through the HRSA Knowledge Gateway where the instruments are available, often sorted by the topic of the particular clinical condition for which they were developed.

In addition, a wide variety of business and leadership tools can be readily found in the gateway. For example, the Leaders Guide developed by the pilot health centers using the Health Disparities Collaboratives focused on the business-case redesign, including processes such as “advanced access” have improved the care being delivered and the experience of the patient. Average wait-times in centers using the collaborative methods are far lower than average wait-times in other health centers that have not been part of these pilot studies.

Since care is more timely and efficient, patients are able to schedule appointments much more flexibly; they do not need to find a day when they can afford to spend multiple hours in the waiting room. As a consequence of medical practitioners being more respectful about time, more patients are showing up to the appointments that they do make. “No-Show Rates” are down to 6-8 %³¹ in many of these facilities; a dramatic improvement over the 35-40 % No-Show Rates in the past.

From a business management perspective, the reduction of no-show rates means less average overhead cost per patient. The right amount of staff for a given number of patients is easier to determine when the number of patients seen is closer to the number of patients expected. By reducing overhead costs, the collaboratives can free up money for the facility, which then can be invested in the direct care of patients. This outcome yields better quality of care and means that improved management of the facility can yield better value overall for the community, which has implications about the ability to reduce the disparities in a community as improved access is further enabled.

Recent research on medical homes shows that care in an advanced medical home seems to yield a better quality of care to all of its patients. Historically, as noted by the IOM and many others, there are noticeable health disparities in both treatments and outcomes across different races, classes, or a number of other social dividers. Typically in the past, different groups of people had much different health outcomes when they are treated by the same medical facilities. In its 2006 Health Care Quality Survey, the Commonwealth Fund found that when adults are insured and use a medical home – defined as a health care setting which delivers timely, well-organized care and facilitates access to other providers – racial and ethnic disparities in access and quality of care are reduced or even disappear – albeit the study did not demonstrate elimination of disparities in health outcomes and does not address the issues of those who do not have insurance, as the study focused on those with insurance.³²

As noted above, the evidence is mounting for similar process improvements and clear improvements in health outcomes within the Health Disparities Collaboratives. These positive results have been reported by independently published evaluations of the Health Disparities Collaboratives that were funded by AHRQ and NIH and carried out separately by Harvard and the University of Chicago. For example, diabetes patients in federally qualified health centers in the Health Disparities Collaboratives have recently been shown to have clear-cut improvements in health outcomes in terms of the control of hemoglobin A1C levels and in terms of the cost associated with this care. These improvements have been attributed to the application of the Chronic Care Model, the Planned Care Model, and the Care Model. The integration of all of these models and lessons learned are being explored through the new framework of the Expanded Care Model.³³

Conclusions

The U.S. communities of practice and national learning community of the quality improvement collaboratives as deployed by community health centers have come to understand better the sophistication that has been developed in their comprehensive health home approach and are pressing forward with the Expanded Care Model by applying it in a variety of settings.

Additional efforts to gain better analysis of the lessons learned from the Chronic Disease Management Collaboratives of the Health Disparities Collaboratives are also underway via efforts funded by the NIH. The resulting analysis of lessons learned from the variety of early adopters of the successful quality improvement activities are exploring what are the critical relevant dimensions and ingredients of that success. This is being done not just to concretely ascertain why the high performers achieved success, but to try to replicate these successes with fidelity. Factors preliminarily considered to be relevant include “self-management-support” including integration of evidence-based CAM, as well as evidence-based Integrative Medicine, and further analysis of HIT interoperability efforts. Lastly, engaging further on the analysis of the evidence basis for the comprehensive health home, other medical home models, and the linkages to the insights of self-management-support as seen from the perspective of the health literacy and unified health communication activities are in consideration.

An expert scoping meeting for exploring these integration aspects previously has been convened as part of the Health Disparities Collaboratives. This meeting was done in collaboration with the DRA Project, the Samueli Institute, and interested evidence-based efforts that can contribute to this discussion and analysis. Further study of the possibly insights to be gained from these discussions and data from the Chronic Disease Collaboratives will need to be considered carefully.

The Disparities Reducing Advances Project is acutely aware that encouragement by many of further study of the more traditional medical home models. The DRA Project recommends the comprehensive health home model be considered as well, as the practice of it has been well

developed in the community health centers already and offers potential value to the convergence of lessons learned. The experience of the delivery of this comprehensive health home has been done in a manner compatible with the disparity reducing potential use of the Expanded Care Model.

Based on the forecasts of the Bio-monitoring Futures Project, and the related insights about the developments in Electronic Health Records, Personal Health Records, Community Health Records, health information systems, biomonitoring, cell phones and related communication, disease prevention and treatment advances, and care delivery, all of these components argue for the importance of a more comprehensive approach to the quality improvement activities nationally and their integration.

Finally, it is worth adding that the DRA Project is optimistic that these efforts will yield value in the context of the T2 Translational Dissemination Science framework efforts that are simultaneously being developed by the NIH, AHRQ and others. As originally described by the IOM Clinical Research Roundtable in 2003, but more concretely discussed by Steven Woolf recently, convergences of the models in the context of an evolving science of dissemination is particularly relevant to this national activity and dialogue. National interest is shifting to this perspective of integration on a number of fronts. These convergences and keen interest from a wide variety of perspectives are encouraging.

Notes

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http://www.altfutures.com/draproject/images/uploads/Report_06_08_Most_Important_Disparity_Reducing_Advances_in_US_Healthcare_Public_Health.pdf; Report 06 14: [The Biomonitoring Futures Project Final Report and Recommendations](http://www.altfutures.com/draproject/pdfs/Report_06_14_The_Biomonitoring_Futures_Project_Final_Report_and_Recommendations.pdf)
http://www.altfutures.com/draproject/pdfs/Report_06_14_The_Biomonitoring_Futures_Project_Final_Report_and_Recommendations.pdf; [Diabetes & Obesity 2025: Four Future Scenarios for the Twin Health Epidemics](http://www.altfutures.com/foresight/Diabetes_Scenarios_June_1st.pdf)
http://www.altfutures.com/foresight/Diabetes_Scenarios_June_1st.pdf; [Report to the Picker Institute on Patient-Centered Care 2015: Scenarios, Vision, Goals & Next Steps](http://www.altfutures.com/pubs/Picker%20Final%20Report%20May%2014%202004.pdf)
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⁸ "The Cost Consequences of Improving Diabetes Care: The Community Health Center Experience." *Joint Commission Journal in Quality and Patient Safety*. 2007.

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