Building a Research Agenda for Community Health Centers and the Medically Underserved: Meeting Proceedings

Michelle Proser, MPP[1], Kaytura Felix Aaron, MD[2], David Meyers, MD[3], Claire Cornell[4]

(1) National Association of Community Health Centers; (2) Centers for Disease Control; (3) Agency for Healthcare Research and Quality; (4) The Biotechnology Institute

Abstract

The Problem: Community, migrant, and homeless health centers (CHCs) are an integral component of the nation's safety net with a proven record of success in access, quality, and cost effectiveness. Still, as CHCs face rising numbers of vulnerable patients and shrinking resources, they must continue to improve quality of care to further narrow health disparities, as well as demonstrate their cost effectiveness and value to policymakers.

Purpose: CHCs, researchers, national partners, and others met in December 2005 to produce a consensus-driven research agenda that lays out research priorities for CHCs and the medically underserved. This article details the meeting process and resulting research agenda.

Key Points: The meeting focused on three domains that touch on community need: health information technology (HIT), quality improvement, and cost effectiveness and value. Community representatives helped to drive research priorities.

Conclusions: CHCs must continually demonstrate their efficiency and effectiveness. Accordingly, the research agenda must be continually revisited through a collaborative process.

Keywords

community health centers, research, quality improvement, health information technology, cost effectiveness, value, underserved, community-based participatory research

Existing literature documents that community, migrant, and homeless health centers (CHCs) are effective in improving access to care for low-income and underserved populations, deliver high-quality care that reduces health disparities and improves health outcomes, and provide these services cost effectively.[1] CHCs are mission driven and run by patient-majority governing boards. They serve entire communities with limited resources, and are not immune to national health care trends. Nationally, uninsurance, poverty, and chronic illness are rising, and the numbers of uninsured and impoverished patients seen by CHCs are rising faster than national trends.[2] Additionally, as health care costs escalate,[3] policymakers are increasingly advocating strategies that demonstrate the value of health care. Although quality reporting and HIT underpin many of these strategies,[4,5] these tools are underdeveloped in CHCs. Only 8% of CHCs have fully adopted electronic medical records, much less than private, office-based primary care physicians,[6] and they do not uniformly report on their quality of care.

These issues have policy and practical implications for CHCs and the patients they serve. Certain challenges are converging on CHCs: rising numbers of patients,[7] decreasing resources, and rising consumer expectation for quality, information, and autonomy. To meet rising demand, as well as to continue to improve the health of patients already being served, CHCs must adopt and maintain HIT, continue to improve quality of care, and demonstrate their cost effectiveness and value to their patients, communities, and payers. In recognition of these policy and practical needs,

the National Association of Community Health Centers, the Health Resources and Services Administration, the Agency for Healthcare Research and Quality, The Commonwealth Fund, the Community Clinics Initiative, and the Robert Wood Johnson Foundation jointly convened a day-long meeting that aimed to produce a research agenda for CHCs. This meeting, "Health Centers and the Medically Underserved: Building a Research Agenda," was held on December 2, 2005 in Rockville, Maryland. The meeting was intended to build consensus on immediate and future research priorities for CHCs by engaging a diverse group of stakeholders in dialogue. The meeting focused specifically on three domains: HIT, quality, and cost effectiveness and value.

This article presents the proceedings from that meeting. It provides a brief overview of meeting structure and the process for achieving consensus before detailing the research agenda itself. This paper is part of a series of articles published together in this issue of *Progress in Community Health Partnerships*. Three other articles provide more detail on existing research and remaining research needs for CHCs around HIT, quality, cost effectiveness, and value.[8-10]

MEETING STRUCTURE, OBJECTIVES, AND PROCESS

The 2005 meeting built on an earlier meeting held in May 2004. That meeting convened CHC researchers, national partners, government agencies, and CHC leaders to initiate collaborations and explore opportunities to augment health center-related research. The May 2004 meeting identified the need to develop a vision and priorities for research. Proceedings are available online at www.nachc.com/research. The 2005 meeting specifically aimed to develop a consensus-driven research agenda for CHCs for the next 5 to 10 years and stimulate interest among investigators, funders, and publishers to engage in health center-related research. Meeting organizers hope that the meeting will result in more published work over the long term that will strengthen the existing evidence base on the effectiveness of CHCs, as well as develop new bodies of knowledge around infrastructure that support the CHC mission.

The 2005 meeting focused on gathering research questions or domains on three particular and timely topics: (1) the role and use of HIT for improving patient care at CHCs, (2) CHC quality improvement, and (3) CHC cost

effectiveness and value. These topics were selected because they touch on the core mission of CHCs to address the needs of the community. HIT was included because it is an emerging tool for improving and documenting quality, as well as reducing costs in the larger health care system. HIT infrastructure and the role of CHC governing boards were common themes heard throughout the meeting.

More than 100 people attended the December 2nd meeting. Given space constraints, the meeting was invitation only. Participants came from around the country and included health services researchers, health policy experts, and representatives from CHCs, state and regional primary care associations, government agencies, national partners, foundations, and journals. Meeting planners and sponsors felt strongly that the research agenda could only be developed through collaboration between CHC leadership and the various parties in attendance. Approximately one third of participants were executives, clinicians, and research staff from CHCs, health center networks, or primary care associations.

To facilitate discussion on research priorities for the topic areas, meeting planners commissioned background papers on the three topic areas from two major universities and a large, urban health center. These papers provided a common knowledge base from where meeting participants could arrive at consensus. Paper authors were asked to summarize what is known on each particular topic, identify gaps and key questions, suggest further research that should be prioritized and how to undertake it, describe barriers to accomplishing additional research, and lay out future concerns. Those papers have since been modified for publication and appear in this issue. Along with these papers, up to four expert reactors prepared one-page "reaction" papers to present additional perspective on issues and research needs. Reaction paper authors included CHC and primary care association representatives, researchers, and policy experts. Papers were distributed to attendees prior to the meeting, and these initial may be viewed at www.nachc.org/research.

l:The first half of the meeting brought all participants together to discuss the meeting papers and raise important research questions and domains participants felt should be included in a research agenda. Later, participants were divided into breakout groups where they honed in on one

meeting topic, further discussed and prioritized research questions or domains, and established a group majority-supported research agenda. Given time constraints, discussion around research infrastructure was given minimal attention (with the exception of advancing HIT), and instead participants focused on identifying research questions and justifications for conducting them. Throughout the meeting, CHC and community representatives actively participated in discussion and drove priority setting. The resulting research agenda is presented below.

COMMUNITY HEALTH CENTER RESEARCH AGENDA HEALTH INFORMATION TECHNOLOGY

Participants overwhelmingly recognized the value—real and potential—that HIT offers, including improving health outcomes and productivity, as well as augmenting CHCs' capacity to collect and analyze patient-level data. Despite these benefits, some participants cautioned that HIT is only a means to an end; that is, it is the infrastructure with which CHCs can examine whether or not they are achieving their desired outcomes.

Meeting participants noted, with great concern, that CHCs are rarely included in regional or national policy discussions that promote HIT adoption or that promote or support interoperability among HIT providers. Moreover, attendees indicated that, as a group, CHCs vary in technological and electronic infrastructures as well in the level of HIT adoption. Adoption and maintenance of HIT systems at CHCs is complex, requiring sophisticated infrastructure, training, and knowledge of different software products.

General Recommendations

Consequently, CHCs must accomplish several key tasks to adopt or improve capacity for HIT, including the following:

- CHCs should be involved in regional discussions around promoting HIT and exchanging data.

- CHCs must know what resources are available to them, have strong leadership that advocates for HIT adoption and staff buy-in, and employ community empowerment and patient support.

- Given the uniqueness of the CHC model and the special needs of CHC patients, those CHCs that have successfully adopted and maintained HIT systems are

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Table 1. Health Information Technology (HIT) Research Questions
1. What is meant by HIT and how does one classify disparate HIT elements?
2. What are the barriers to effective adoption at health centers?
3. What are the important functions of HIT and the minimum standards needed for health center operations? What factors must health centers consider when selecting HIT networking capabilities and software packages?
4. Which HIT models are most effective and sustainable for health centers?
5. How does the adoption of HIT impact health center workforce as well as staff and patient satisfaction?
6. What is the impact of state policy (e.g., Medicaid demonstrations and reimbursement, funding of uncompensated care) and federal policy (e.g., Medicare demonstrations and reimbursement) on HIT adoption? What is the impact of HIT on state and federal policy?
7. How can HIT best serve the mission of health centers to serve entire communities and community health functions, such as defining populations and particular risks?
8. How would HIT refine or even redefine productivity?
9. How should HIT capture asynchronous care or "less visible aspects" that are important?
10. What are the indicators of success for full HIT adoption, implementation, and effective use? How can these indicators be measured?
11. Will HIT improve health outcomes and reduce disparities?
12. How will HIT affect behavioral health as it is integrated into the primary care setting?
13. How will HIT impact health centers' relationships with other providers?

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best suited to train other CHCs.

- Attendees confirmed the importance of creating a business case for HIT adoption. When formally articulated, an HIT business case can encourage and augment CHCs' adoption rates, and it can introduce CHCs to as-yet-untapped financial incentives.

Research Agenda

The research questions listed in Table 1 encompass several domains, including identifying the continuum of HIT use at CHCs, HIT functions and technology issues, barriers to adoption, impact of financial incentives for HIT adoption, the impact on care delivery, and determining and measuring indicators of success.

Discussion around HIT infrastructure, adoption, maintenance, and function also occurred during the quality and cost-effectiveness discussions, and the subject received significant attention during the meeting wrap up. Many participants raised issues around security and privacy, interoperability, and common systems across CHCs, plus enabling patients to access their own information. The attention to HIT throughout the meeting is not surprising given its considerably new and growing role in health care,

as well as its application in quality improvement and demonstrating value.

Quality

The focus of the afternoon's discussions was to develop research questions that would move CHC quality improvement forward. To narrow the research agenda on quality issues, participants prioritized research essential for the communities being served by CHCs and those communities still in need.

General recommendations. Before identifying key research questions, participants discussed recommendations for moving quality research forward.

- CHCs require education and support to recognize the differences between quality improvement and research and encouragement to engage in both. Although both ultimately improve the health of patients and communities, quality improvement activities are part of CHC day-to-day operations, whereas research involves applying sound methods to rigorously investigate a question with the intention of discovering generalizable knowledge to be shared with others outside of the organization. Participants noted that all CHCs currently engage in quality improvement and many participate in research.

Table 2. Quality Research Questions

1. What are the roles of patients and communities in health center quality improvement initiatives? How do health center patients define quality, cultural competency and patient-centered care, and how do we implement these definitions at health centers to improve performance and patient experience?

2. What are effective models for conducting quality improvement activities in health centers?

3. What resources, including financial, personnel, culture, and infrastructure (including HIT), are needed to establish, implement, and sustain successful health center quality improvement initiatives?

4. What health center features beyond the clinical encounter make it possible for health centers to improve quality and outcomes and to reduce health disparities? Can we quantify or identify these features in a way that allows us to create models of care that can be applied to the broader health care system?

5. How does the ability of health centers to access specialty care services impact quality? What might be the best models for gaining access to specialty care for patients?

6. What implementation strategies are effective in health centers at promoting the adoption of evidence-based practices?

7. What are the implications of staff turnover and staff development on improving or maintaining quality? Are there specific office "cultures" that enhance health center quality improvement initiatives?

8. What are some of the most effective pay for performance models for improving quality in health centers and maintaining financial viability? What role can health centers themselves play in developing these kinds of models?

9. What is the role of the health center in improving the health of the broader community?

- CHCs need assistance with translating research into practice.
- It is important to improve dissemination of best practices and evidence-based guidelines.

Research agenda. The prioritized research questions are listed in Table 2 and generally cover how to continue improving quality, identifying and implementing features linked to quality improvement, better defining quality, determining community impacts and incentives, and disseminating best practices.

Cost Effectiveness and Value

Before prioritizing research questions around CHC cost effectiveness and value, participants raised several important issues. Regarding the cost effectiveness of CHCs, some raised the point that although the literature has demonstrated that CHCs are effective and efficient providers, there may not be a point of comparison. CHCs tend to be the only health care provider available to their patients, other than emergency rooms, so that there is no real competition. Still, given demand from policymakers for evidence of the effectiveness of CHCs compared to the investment, research priorities should aim to document whether CHCs produce short- and long-term savings within the health care system and even the larger environment (i.e., direct and indirect effects). Such research is needed in spite of the fact that a method may not exist for a true cost–benefit analysis in the near future. Although this "gold standard" methodology may be several years away for health center-related research, other research questions can be asked to establish cost effectiveness.

Another issue was how to define and demonstrate the "value" of CHCs to their patients, communities, third-party payers, and government. *Value* is difficult to define, measure, and analyze, given that it must be assigned to a group—such as patients, communities, and payers—and potentially a level—such as locally or nationally. Moreover, value varies by community and health care system. One specific research question that came out of this discussion overlaps with those under quality: the impact on population health compared to having insurance alone.

General recommendations. Meeting discussion generated several general recommendations.

- While developing specific research questions, one major

area of discussion was the need to demonstrate to Medicaid (and other payers) that CHCs are efficient providers for large numbers of Medicaid patients, and that payments based on costs of care are necessary to maintain effectiveness.
- Although some studies have demonstrated cost effectiveness to Medicaid in a small number of states, it is important to replicate these studies across other states.
- Research should demonstrate the impact consumer governing boards and community empowerment have on health.
- Although not a specific research question, participants also raised the need to synthesize current literature on CHC cost effectiveness and value, and to do this in conjunction with a typology of CHCs that classify and catalog their central, common elements.
- HIT can assist with data collection that in turn may demonstrate value.

Research agenda. Table 3 presents the prioritized cost-effectiveness and value research questions. These questions generally cover demonstrating value of CHC care, identifying features linked to cost effectiveness, determining a return on investment and long-term cost savings, and identifying community impacts.

CONCLUSION AND LOOKING AHEAD

The questions included in this research agenda were developed through a collaborative process of idea gathering from experts in the field and those generally involved in the research process. Overall, these questions get at the core mission of CHCs—addressing the needs of the community. The agenda was also created with the understanding that it must be flexible so as to allow for the inclusion of new, pressing research questions, as well as with the awareness of remaining research domains that may need to be addressed. For instance, participants also broached research questions inspired by recent CHC growth. New CHCs provide an opportunity to study the national progression of how CHCs build relationships with their communities and expand. Additionally, where is the CHC movement today in terms of influencing the entire health care system and public policy, as well as promoting positive community change?

Although this research agenda is a compass, CHCs still need a map. They need support in developing the infra-

structure and resources necessary for CHCs to conduct research, building equal partnerships with academics, reconciling the culture clash between academics and communities, and promoting funding streams and publication for health center-related research. Meeting organizers anticipate and participants desire future meetings that will continue to monitor research needs around CHCs and the underserved. Moreover, we must gauge whether more partnerships between academics and CHCs are occurring and whether CHCs overall are engaging in more research. Partnerships with academics, federal agencies, and others are crucial for both enhancing the body of evidence on the success of the health centers program and for leveraging and maximizing resources. CHCs must be equal partners in these endeavors for the research to be truly community based, and all partners must share the same understanding of quality, research, and mission. Future meetings should also involve CHC consumers.

CHCs must continue to adapt and become even more effective and efficient in serving their communities, and they must educate policymakers and payers of the value to CHC care. Accordingly, the research agenda must be continually revisited through a collaborative process.

ACKNOWLEDGMENTS

Table 3. Cost-Effectiveness and Value Research Questions
1. Do health centers deliver higher value care compared with other models of care (or lack of)? If so, what are the components of highly effective health center care and what is driving higher value, more efficient, higher quality care?
2. What is the value of the health center governing board relative to other models of care that do not have consumer-driven boards?
3. What is the value of health centers to Medicaid and what is the potential role of health centers in Medicaid reform? How have health centers "fared" in Medicaid waivers? What data are needed to evaluate health centers' cost effectiveness to all Medicaid arrangement types? How generalizable are valuation studies across different states and kinds of health centers?
4. Do health centers save the larger health care system money and, if so, how much?
5. In addition to quantitative research, what kinds of qualitative research is needed to outline the value of health center care in terms of demonstrating how health centers interact with their communities and solve the most pressing local health problems?
6. What are the "downstream" cost savings or economic benefits generated by health centers both inside and outside the health system, and how much is saved? Downstream effects could be seen in uncompensated care, avoided emergency room visits, well-managed chronic care, community-based care for frail elderly, the justice system, employment, local economy, and so on.
7. What is the impact of health centers on population health, after controlling for health center penetration rates and other relevant factors?
8. What is the marginal or economic value or impact of health centers in rural and other communities?

REFERENCES

1. Proser M. Deserving the spotlight: H ealth centers provide high quality and cost effective care. J Ambul Care Manage. 2005;28:321-330.

2. Proser M, Hawkins D. The safety net on the edge. National Association of Community Health Centers (2005). Available from: www.nachc.com/research.

3. Smith C, Cowan C, **Heffler S, Catlin A.** National health spending in 2004: Recent slowdown led by prescription drug spending. *Health Aff.* 2006;25:186-196.

4. **Anderson GF, Frogner BK, Johns RA, Reinhardt UE.** Health care spending and use of information technology in OECD countries. *Health Aff.* 2006;25:819-831.

5. Fiscella K, Geiger HJ. Health information technology and quality improvement for community health centers. *Health Aff.* 2006;25:405-412.

6. National Association of Community Health Centers. Electronic health information among community health centers: Adoption and barriers. Fact Sheet [updated 2006 May]. Available from: www.nachc.com/research.

7. Proser M, Hawkins D. The safety net on the edge. National Association of Community Health Centers (2005). Available from: www.nachc.com/research.

8. Calman N, Kitson K, Hauser D. Using information technology to improve health quality and safety in community health centers. *Progress in Community Health Partnerships: Research, Education, and Action.* 2007;1(1):83-88.

9. Chien AT, Walters AE, Chin MH. Community health center quality improvement: A systematic review and future directions for research. *Progress in Community Health Partnerships: Research, Education, and Action.* 2007;1(1):105-116.

10. Frick KD, Shi L, Gaskin DJ. Level of evidence of the value of care in Federally Qualified Health Centers for policy making. *Progress in Community Health Partnerships: Research, Education, and Action.* 2007;1(1):75-82.