Community-Centered Health Homes

Bridging the gap between health services and community prevention

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Prevention Institute is a nonprofit, national center dedicated to improving community health and well-being by building momentum for effective primary prevention. Primary prevention means taking action to build resilience and to prevent problems before they occur. The Institute's work is characterized by a strong commitment to community participation and promotion of equitable health outcomes among all social and economic groups. Since its founding in 1997, the organization has focused on injury and violence prevention, traffic safety, health disparities, nutrition and physical activity, and youth development. This, and other Prevention Institute documents, are available at no cost on our website.

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We have a singular opportunity to re-envision our national approach to health. The health and wellbeing of individuals depends on both quality coordinated health care services and community conditions that support health and safety. A successful, equitable health system will fuse these two areas, merging efficient, accessible, and culturally appropriate *care* with comprehensive efforts to prevent illness and injury *in the first place* by improving community environments. This coordinated thrust will produce the most effective, sustainable, and affordable health solutions.

The Affordable Care Act (ACA) seeds extensive innovation along each of these lines. In addition to expanding insurance coverage, ACA elevates the notion of a health home as a key element of health care. The legislation leaves room for further delineating this concept, which is typically characterized as a site for coordinating and integrating medical and community services for individual patient care. ACA also makes a historic investment in prevention, reflecting the growing understanding that community factors have a fundamental influence on health and safety.

Now is the time to create a unified vision. Integrating the concept of health homes with a community prevention perspective produces multiple benefits: it's cost effective; it reduces demand for resources and services; and it improves health, safety, and equity outcomes on a community-wide and individual level. Further, it alleviates the frustration of clinicians who feel powerless to change the social circumstances that shape the health of their patients. It provides a route for medical professionals to apply their assets, expertise, and credibility to the challenge of creating environments that support health, equity, and safety.

Community health centers (CHCs) are one ideal venue for developing an integrated approach that builds on the strengths of each approach. This paper examines how CHCs and other health facilities can actualize this approach, producing a coordinated set of practices we're calling a **community-centered health home** (CCHH). The concept and discussion emerged from a literature review and interviews with key leaders in the field.

> **Walter Cronkite said:** "America's health care system is neither healthy, caring, nor a system." *This is the time to respond.*

The Community-Centered Health Home

The community-centered health home provides high-quality health care services while also applying diagnostic and critical thinking skills to the underlying factors that shape patterns of injury and illness. By strategically engaging in efforts to improve community environments, CCHHs can improve the health and safety of their patient population, improve health equity, and reduce the need for medical treatment. The CCHH model advances a number of existing health care delivery models and practices, including the patient-centered medical home, as defined by the Patient-Centered Primary Care Collaborative, and the health home, as defined in the ACA. These models aren't necessarily linear or sequential, as all are being advanced simultaneously and the concepts are evolving and expanding to include additional, complementary elements.

The health home approach builds upon pioneering work on community-oriented primary care (COPC). COPCs developed over a generation ago, made strong links between clinical practice and community action; the community-centered health home adds the sophistication and accumulated wisdom of prevention practice into a consistent approach that focuses efforts on policy and environmental change. Community-oriented primary care emerged in conjunction with the development of community health centers (see Case Study on Dr. Jack Geiger).

Every step from traditional, segmented medical care towards a community-centered health home is an important improvement. As Dr. Roland Goertz, President of the American Academy of Family Physicians put it, "[Medical homes are] a giant departure from the way this country has approached health care in the last several decades; until recently…the focus has been more on treating sickness rather than promoting wellness." The concept of the medical home is a seemingly simple one: all people should enter the medical system through a portal that manages their health holistically (comprehensive primary care, physical health, mental health, health education, etc.), treats them as individuals (with knowledge of their history, risk factors, concerns, and specific perspectives), and provides the highest-quality care efficiently (including both treatment and clinical prevention). In practice, this requires a team approach with smooth connections

> I diagnosed "abdominal pain" when the real problem was hunger; I confused social issues with medical problems in other patients, too. I mislabeled the hopelessness of long-term unemployment as depression and the poverty that causes patients to miss pills or appointments as noncompliance. In one older patient, I mistook the inability to read for dementia. My medical training had not prepared me for this ambush of social circumstance. Real-life obstacles had an enormous impact on my patients' lives, but because I had neither the skills nor the resources for treating them, I ignored the social context of disease altogether.
>
> —Laura Gottlieb, MD,
> San Francisco *Chronicle* 8/23/10

and communication between providers, staff who are comfortable coordinating care and collaborating with clients as partners, an electronic health records system that captures all relevant information and shares it with providers and patients, and a payment system that incentivizes efficient, collaborative work. Though the word "home" suggests a tangible place, in actuality the health home is a set of practices that health care institutions can adopt to increase coordination between providers and provide comprehensive primary care.[2]

The Affordable Care Act includes a number of provisions and funding sources that will support development and expansion of the medical home—what is described in section 2703 of the legislation as a "health home." ACA provides funding, including $25 million in planning grants, for states to develop health homes for Medicare and Medicaid enrollees with chronic conditions. Most notably, ACA establishes a fund of $11 billion for Community Health Center expansion and $10 billion for the Center for Medicare and Medicaid Innovation, which could also be applied, in part, to health homes. While the Affordable Care Act does not define a health home per se, it does describe six core health home services to be provided to individuals with chronic conditions: comprehensive care management; care coordination and health promotion; comprehensive transitional care from inpatient to other settings, including appropriate follow-up; support for patients, their families, and their authorized representatives; referral to community and social support services when needed; and the use of health information technology to link services, as feasible and appropriate.

The community-centered health home concept takes previous models a transformative step further by not only *acknowledging* that factors outside the health care system affect patient health outcomes, but also *actively participating* in improving them. In addition to providing quality health care services, often to the most neglected and highest-need patients, community health centers are actively engaged in managing patients' disease through effective clinical prevention practices. Many are also equipped to refer patients, on an individual basis, to services in the community such as public health insurance options, legal services, and food stamps. These activities are critically important and reflect a commitment to a health care system that promotes health and well-being. The defining attribute of the CCHH is active involvement in community advocacy and change. In recent years, more and more health care providers and institutions (particularly community health centers) have moved closer to this model, though still remain a distinct innovative minority. As institutions become focused on improving health at both the individual and population-wide level they will work toward solutions that solve multiple problems simultaneously (e.g., improving neighborhood walkability would improve outcomes for diabetes, hypertension, heart disease). Below, a community-centered health home response to a spike in cases of lead poisoning serves as an example of the ways that a community-centered health home might engage in community change:

> A young patient tests positive for elevated blood lead levels. Her pediatrician initiates appropriate clinical management protocols for treatment including chelation—a necessary but risky and uncomfortable procedure to reduce the lead levels in her blood. As the diagnosis is entered into the community-centered health home's electronic records, it is instantly tracked alongside other lead poisoning diagnoses in the community. As part of its monthly data analysis, the CCHH staff identifies

an increased number of cases among children in a certain neighborhood. The following week, at a monthly coordinating meeting held with community health stakeholders, the CCHH staff raises the issue with an affordable housing organization, the local health department, and a faith-based group. One of the community organizers recalls seeing children playing around a recently abandoned building. The team works together to carry out a systematic response: the local health department tests the soil and structures at the site to establish the presence of lead; the housing organization works with the property owner to ensure that sources of lead are removed, as required by law; and the CCHH staff and community organizing group communicate with patients and families in the neighborhood about the risk. If lead poisoning continues to be a problem, clinic staff might engage in advocacy efforts to support stricter regulations and enforcement around lead exposures in housing. Even as the CCHH provides clinical treatment, its role in eliminating on-site lead reduces the risk of the young girl absorbing more lead and reduces the number of children who enter the clinic with lead poisoning in the first place.

The importance of community prevention

Community prevention is integral to effective health reform. It reduces the burden placed on the health system by reducing rates of preventable injury and illness and better aligning resources to address the factors that shape health and safety outcomes.[3] Prevention can substantially diminish health inequities by focusing attention on unhealthy policies and inequitable resource distribution and improving community environments. Researchers have consistently concluded that the factors that have the greatest impact on health—the environments in which we live, work, and play and our behaviors (in part affected by those environments)—are outside of health care.[4,5] According to the best available estimates, environmental conditions, social circumstances, and behavioral choices that could be addressed through prevention have by far the greatest influence in determining

FIGURE 1. Discrepancy between health determinants and spending

$2.3 TRILLION
Prevention, 4%

Environments & Behaviors 70%

Medical Services 96%

Genetics 20%

Access to Care, 10%

Factors Influencing Health[6]

National Health Expenditures[7]
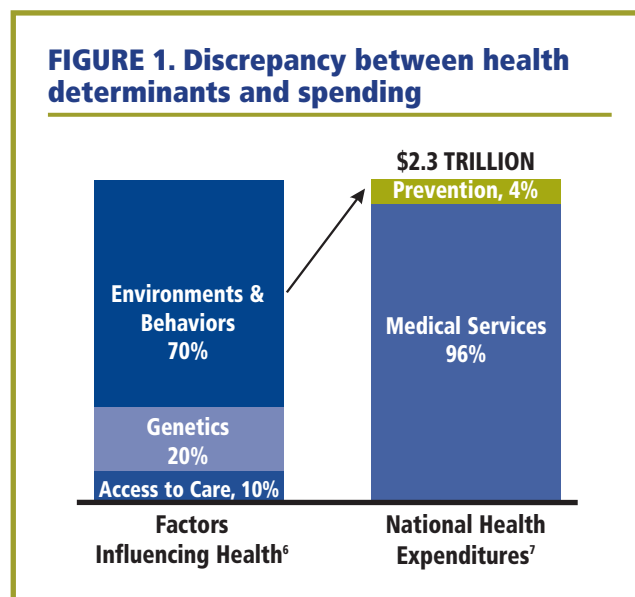
health (see Figure 1).[8] As primary health contacts and authorities, medical professionals and institutions have significant opportunities to play a far greater role in advancing the health of the populations they serve through community prevention efforts that address behaviors and environments.

Clinicians are typically trained and incentivized to engage only once a patient presents with symptoms. In general, the linkage between clinical service and the community is thought of in terms of how health services can be provided in the community (e.g., vaccinations in schools) and how to engage needed community services to advance patient treatment (e.g., transit to get someone to the health center.). Additionally, our health system separates people into discrete categories, according to whether they are healthy, at-risk, or already ill or injured. Compartmentalizing is useful at times, but it can prevent us from seeing that one's health status is dynamic, constantly responding to the interplay with treatment and the environment. A better approach categorizes people when that's helpful for triage or delivering medical services but also considers the entire population in order to focus environmental improvements that benefit all. For example, understanding the community conditions that produce and exacerbate Type II diabetes helps inform an effective treatment plan. Actualizing the treatment plan will depend not only on

"America's health care system is in crisis precisely because we systematically neglect wellness and prevention."

—Senator Tom Harkin

FIGURE 2. Primary prevention and populations

FIGURE 2. Primary prevention and populations

PRIMARY PREVENTION'S INFLUENCE

Risk management

Disease management

POPULATION WITHOUT RISK OR DISEASE → POPULATION AT RISK → POPULATION WITH DISEASE
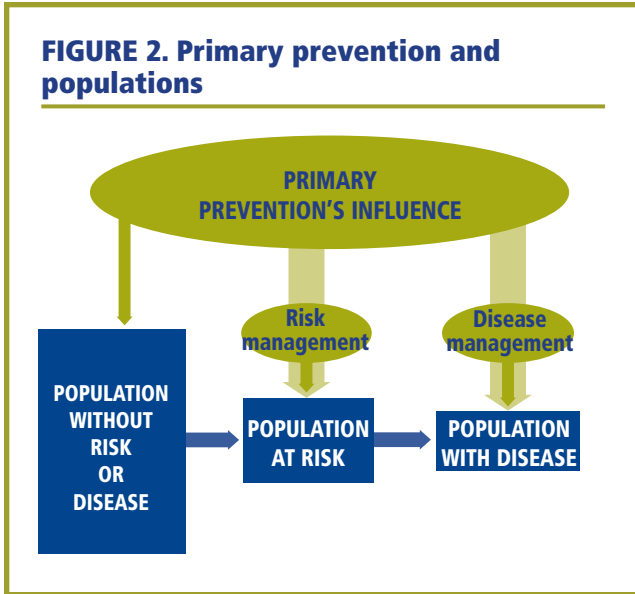
individual medication and behavioral recommendations but also on making neighborhood improvements that facilitate access to healthy foods and safe places for physical activity. These environmental changes are important for preventing diabetes, for delaying and reducing its onset and extent, and for minimizing its impact for those who are severely affected.

Prevention has a proven track record of saving lives. Since 1900, the average lifespan of people in the United States has increased by more than 30 years; 25 years of this gain are attributable to advances in public health, including tobacco policy, improved nutrition and sanitation, and safer workplaces.[9] Community prevention creates comprehensive changes that make health and safety the norm. Familiar examples include eliminating lead-based products; raising the minimum drinking age; and requiring use of seatbelts, car seats, and protective helmets.

Prevention also saves money. California's tobacco control program saved $86 billion in personal healthcare costs in its first 15 years, while the state spent only $1.8 billion on the program, a 50-to-1 return on investment.[10] Every dollar invested in increasing the use of child safety seats has been demonstrated to return over $40 in reduced health care and social costs.[11] Recent analysis shows that in the United States investing $10 per person per year in proven community initiatives to increase physical activity, improve nutrition, and prevent tobacco use could produce a 5-fold return in five years.[12] Starting in the fifth year, a $3 billion investment would result in a $16 billion net savings in annual healthcare costs. Investments in communities at

highest risk of disease would likely result in even greater savings and would help reduce health inequities. Prevention also lowers indirect costs such as workers' compensation claims and lost productivity.[13-15] In addition, it reduces the demand for medical treatment, enabling the system to operate more efficiently.

People intuitively understand the value of prevention. Our health systems and institutions typically focus prevention efforts primarily on education and screenings. While these services are important, they have limited capacity to effect broad-based change on their own. Transforming health at the population level comes from shifting social norms and creating policies that anchor other efforts. Prevention Institute has developed a systematic methodology for applying quality prevention, called *Taking Two Steps to Prevention* (see Figure 3), that traces a pathway from the medical condition to the behaviors and exposures that led to it and then to the environmental conditions that are at the root of the behaviors and exposures. For example, a man has chest pains, and his doctor diagnoses severe heart disease. Treatment may be expensive and may come too late to prevent impaired quality of life. While developing an appropriate treatment plan, a CCHH clinician will also reflect on how the man developed heart disease in the first place. Perhaps he ate poorly and didn't exercise. Earlier intervention might have led to healthier choices. But is it just about choice? Maybe he works long hours in a stressful, sedentary job, where it is easiest to eat unhealthy, prepared foods at his desk. Perhaps his neighborhood environment isn't any better, lacking healthy food options and safe places to be active. The CCHH provider recognizes that significant, long-term health benefits could result from community-level interventions, so she helps to launch coordinated efforts that support the patient's need for healthy food and physical activity. These changes benefit her patient as well as patients with other health concerns with related risk

FIGURE 3. Taking two steps to prevention

HEALTH & SAFETY OUTCOMES → EXPOSURES & BEHAVIORS → ENVIRONMENT

factors, such as diabetes and depression. They also help protect the broader population from developing illness. They reduce or delay demand for costly medical services.

The *Two Steps to Prevention* framework offers a method to analyze what happens prior to the onset of illness and injury. This approach identifies the underlying factors that shape health and affect health equity to ensure that we are not only treating medical conditions but also reducing the likelihood they will occur in the first place. The first step to prevention is from disease or injury (e.g.,

> "No mass disorder afflicting mankind is ever brought under control or eliminated by attempts at treating the individual."
>
> —Dr. George Albee

Type II diabetes, asthma) to exposures and behaviors that increase the risk for poor health (e.g., inadequate diet, limited physical activity, exposure to polluted air). The second step is to the environment (i.e., root factors and community conditions such as lack of food outlets or polluting smokestacks) that shape behaviors and lead to unhealthy exposures. Prevention Institute collaborated with a national expert panel to develop THRIVE (Toolkit for Health and Resilience in Vulnerable Environments), an evidence-based framework connecting health outcomes to community conditions. The 13 factors (Table 1, p.7) can guide thinking within a clinical context and with partners about the second step to prevention: getting specific about what in the community environment is shaping health, safety, and equity.

Community health centers at the center of community health

Community health centers are a particularly important venue for the initial implementation of the community-centered health home for a number of reasons. First, CHCs are philosophically committed to improving the health of communities and as a result are likely to be more inclined to try out innovative approaches that align with that commitment. Second, CHCs are especially dedicated to providing care to the most vulnerable populations.[16] Third, CHCs are closely connected to communities and thus are able to tailor their care to the context and demographics of the neighborhoods in which they are located. Many are already performing the services of a traditional health home or have gone a step farther by linking indi-

viduals with non-health care services, such as SNAP, legal aid, or housing.[17,18] Last, in the past decade, CHCs, including community clinics, have seen their patient loads double.[19] Now, with the expanded coverage mandated by ACA, much of the burden for providing services to 40 million individuals will fall to them.[20] At the same time, CHCs are poised for expansion and innovation with $11 billion in ACA support for new construction, staff expansion and training, and updates to facilities and systems. By

CASE STUDY
St. John's Well Child and Family Center[21]

When clinicians noted a significant number of patients with conditions ranging from cockroaches in their ears to chronic lead poisoning, skin diseases, and insect and rodent bites, they inferred that many of the cases might be related to substandard housing conditions. The clinic incorporated into office visits a set of questions about patients' housing conditions and was able to collect not only standard health condition data (e.g., allergies, bites, severe rashes, gastrointestinal symptoms) but also housing condition information (e.g., presence of cockroaches, rats, or mice). St. John's clinic partnered with a local housing agency, a human rights organizing agency, and a tenant rights organization to form a collaborative to address substandard and slum housing in Los Angeles. The data that St. John's collected made them an asset in the collaborative and helped the collaborative to gain partners. The collaborative developed and pursued a strategic plan to improve housing conditions in the area. The plan included community engagement, research, medical care and case management, home assessments, health education, litigation, and advocacy. The collaborative passed local administrative policies and secured agreements from high level leadership at different government agencies (LA City Attorney's Office and LA Department of Public Health) that led to improved landlord compliance with standard housing requirements. The clinic now serves a surveillance role, reporting landlords that perpetuate substandard housing, and the community now has the infrastructure in place to ensure that landlords not in compliance are dealt the proper financial and legal consequences. Evaluation results show that residents' living conditions and health outcomes both improved as a result of the collaborative's efforts.

TABLE 1. THRIVE community health factors

PLACE

1. What's Sold & How It's Promoted is characterized by the availability and promotion of safe, healthy, affordable, culturally appropriate products and services (e.g. food, books and school supplies, sports equipment, arts and crafts supplies, and other recreational items) and the limited promotion and availability, or lack, of potentially harmful products and services (e.g. tobacco, firearms, alcohol, and other drugs).

2. Look, Feel & Safety is characterized by a well-maintained, appealing, clean, and culturally relevant visual and auditory environment; and actual and perceived safety.

3. Parks & Open Space is characterized by safe, clean, accessible parks; parks that appeal to interests and activities of all age groups; green space; outdoor space that is accessible to the community; natural/open space that is preserved through the planning process.

4. Getting Around is characterized by availability of safe, reliable, accessible, and affordable methods for moving people around. This includes public transit, walking, and biking.

5. Housing is characterized by the availability of safe and affordable housing to enable citizens from a wide range of economic levels and age groups to live within its boundaries.

6. Air, Water & Soil is characterized by safe and non-toxic water, soil, indoor and outdoor air, and building materials. Community design should help conserve resources, minimize waste, and promote a healthy environment.

7. Arts & Culture is characterized by a variety of opportunities within the community for cultural and creative expression and participation through the arts.

EQUITABLE OPPORTUNITY

8. Racial Justice is policies and organizational practices in the community that foster equitable opportunities and services for all. It is evident in positive relations between people of different races and ethnic backgrounds.

9. Jobs & Local Ownership is characterized by local ownership of assets, including homes and businesses, access to investment opportunities, job availability, and the ability to make a living wage.

10. Education is characterized by high quality and available education and literacy development for all ages.

PEOPLE

11. Social Networks & Trust is characterized by strong social ties among all people in the community – regardless of their role. These relationships are ideally built upon mutual obligations, opportunities to exchange information, and the ability to enforce standards and administer sanctions.
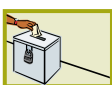
12. Participation and Willingness to Act for the Common Good is characterized by local leadership, involvement in community or social organizations, participation in the political process, and a willingness to intervene on behalf of the common good of the community.

13. Norms/*Costumbres* are characterized by community standards of behavior that suggest and define what the community sees as acceptable and unacceptable behavior.

TABLE 2. An evolving approach to health

THE COMMUNITY ENVIRONMENT

COMMUNITY-CENTERED HEALTH HOMES

Collect data on social, economic, and community conditions

Aggregate health and safety data

Systematically review health and safety trends

Identify priorities and strategies with community partners

HIGH-QUALITY MEDICAL SERVICES
(Patient-Centered Primary Care, Medical Home, Health Home)

Coordinated, comprehensive care among clinical team (e.g., MDs, NPs, PAs, RDs, pharmacists)

Ongoing relationship between patient and a personal physician

Clinical practices are informed by evidence-based medicine

Referrals to community and social support services

Integrated clinical prevention and health promotion efforts

Patients, families, and authorized representatives are empowered and supported

Culturally- and linguistically-appropriate care

Health information technology (HIT) supports the integration of care across the health care system

Increased access to care (e.g., expanded hours, transportation support, and electronic communication)

Coordinate activity with community partners

Act as community health advocates

Mobilize patient population

Strengthen partnerships with local health care organizations

Establish model organizational practices

focusing on a CCHH approach, health centers can reduce the need for their services and make service delivery more manageable as well as improve patient outcomes. The role that CHCs play as a hub for community health and the current investment in innovation through ACA means that CHCs are uniquely positioned to successfully implement the community-centered health home.

Elements of the community-centered health home

The skills needed to engage in community change efforts are closely aligned with the problem solving skills providers currently employ to address individual health needs. It is a matter of applying these skills to communities. Specifically with patients, practitioners follow a three-part process: collecting data (symptoms, vital signs, tests, etc.), diagnosing the problem, and undertaking a treatment plan. The CCHH would function in a parallel manner by developing capacity and expertise to follow a three-part process for addressing the health of the community, classified below as *inquiry, analysis, and action.*

For example, CCHH staff might treat several seniors injured in falls, ask how they fell, and realize they live in the same housing development (inquiry). In discussion with community partners, they discover most of the falls took place in a nearby park and that the pavement had been damaged by storms (analysis). In addition to treating the injuries, they could contact the parks department or public works, join the neighborhood association in sponsoring an event highlighting the situation, write a letter to a local paper, and/or collect data from other patients on injuries sustained in the park in order to have a more robust analysis of the health impacts of conditions there (action). *Inquiry, analysis, and action* take time, just as individual treatment takes time, but the extra effort will be compensated by the time saved from reducing patient load. In order to simplify the discussion below, partnerships are described as progressively expanding from within the institution for *inquiry* to community representatives for *analysis* to the patient population and other institutions for *action*. In practice, depending on the context, those demarcations will likely be less discrete (e.g., patient representatives may participate in analysis, community partners may provide information for inquiry, etc.).

CASE STUDY

Ho'oulu 'Aina: Kalihi Valley Nature Park, Kokua Kalihi Valley (KKV), a comprehensive community health center[22]

"While it is unique for a present-day health center to be the caretakers for a large parcel of land, Hawaiian and Pacific Island cultures recognize land as an integral part of community health." – Ho'oulu 'Aina website

Kalihi Valley is a densely populated, low-income community in Honolulu, Hawaii. The valley lacks sufficient sidewalks, bike lanes and public green space to support regular physical activity for its residents. Kokua Kalihi Valley Comprehensive Family Services (KKV), a community health center, obtained a 20 year lease on a 100 acre parcel in Kalihi Valley. In partnership with local organizations and agencies including the City of Honolulu, a local bike shop, leaders from a public housing development, and other community-based organizations, KKV is transforming the parcel of land into a nature park with hiking trails, walking and biking paths, community food production, and a cultural learning center. Eventually, the park will have up to 10 acres of community gardens, which will provide space for people to be physically active and grow healthy foods. The opportunities for safe physical activity and healthy food access that the park provides will support the health of those living in the KKV community.

Inquiry elements

Given constant contact with patients in the surrounding community, health centers and similar institutions are uniquely positioned to maintain a "finger on the pulse" of that community's health. In order to do this, they need to collect data that reflects community conditions, analyze existing data for community health implications, and capture clinician impressions and intuitions about underlying issues shaping prevalence of injuries and illnesses.

1. Collect data on social, economic, and community conditions

Health centers already collect data on a host of patient demographics. CCHHs should use data collection to bring community conditions into the conversation about patient care within the institution. First, a set of questions on community, social, and economic conditions should be incorporated into the clinic's intake process and that data

incorporated into health records (e.g., questions such as, "How long does it take you to travel to a full service grocery store?" or "Do you feel safe walking or playing in your neighborhood?").* There are a number of important issues that need to be considered as this is implemented including ensuring individual privacy; developing a consistent regional, state, and national approach so that information from multiple sites is comparable and analyzable in aggregate (see section on Metrics below); and that a balance is struck between using consistent questions and having the flexibility to modify the questions based on community health priorities. The latter may point toward a discrete menu of questions that is established at a national level and can be selected from based on local considerations.

Second, prompts should be developed for use during clinical visits. These prompts should be contingent on diagnosis and be designed to take a very limited amount of time. For example, a clinician might see an adolescent with a trauma (e.g., broken arm). Entering that diagnosis leads to prompts such as whether the injury is intentional or unintentional, whether unsafe neighborhood conditions were involved, and whether the patient is experiencing any symptoms of comorbidities (e.g., depression, anxiety).

By expanding the type of data collected from patients, CCHH staff would be positioned, in the Analysis phase, to monitor trends and emerging issues in the patient population over time and geography and to create opportunities to explore the comparative effectiveness of community-oriented solutions versus clinical interventions. With momentum building for the adoption of electronic health records and new resources available, health centers can use this opportunity to strengthen existing systems to fully capture a patient's, and eventually the community's, health profile.

2. Aggregate symptom and diagnosis prevalence data

In addition to implementing new types of data collection, clinicians already collect a significant amount of data on health outcomes and patient symptoms. That information is potentially extremely important to analyze closely for trends and patterns. In order to do that during the

Analysis elements described below, steps should be taken to aggregate and share patient health data at regular intervals. This could take the form of a monthly report that lists the most prevalent diagnoses from patient visits and flags any significant changes (either in prevalence of a given condition or in the relative prevalence compared with other diagnoses).

Analysis elements

Once health and safety information is collected, health centers can play a key role in helping to explore trends in patient health and safety and to link those trends with factors in the community in order to identify underlying problems and possible solutions. Essentially, the CCHH staff would analyze the data that the institution collects and then connect with community partners and collectively take *Two Steps to Prevention* (from health and safety outcomes to exposures/behaviors to the community environment). For example, if evidence from the CCHH and/or community partners shows increasing childhood obesity rates, the corresponding analysis might point to a dearth of accessible fresh foods or safe places to play. There is existing research, resources, and tools, such as THRIVE (see Table 1, p. 9), that can support health centers in conducting analysis. Universities and public health departments could also be ideal partners both in supporting initial data analysis and also monitoring and capturing successes. These partners can also help aggregate data across regions and support longitudinal studies, comparative effectiveness research, and use of geographic mapping.

It is also critically important to be cognizant of existing community information and leadership, and complement—rather than compete with—community prevention efforts. Analysis should not happen in a vacuum, but rather as part of broader community efforts. The role of the CCHH, of course, will vary based on the visibility of community partners. In communities where advocacy networks, policy champions, and community prevention capacity are strong, the community health center may play a supportive, partnership, and facilitator role. In areas where leadership or community coalitions are lacking, the institution might need to play a more active role in community change. For example, the community health center might initiate and facilitate a local coalition if none

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HEALTH & SAFETY OUTCOMES

EXPOSURES & BEHAVIORS

ENVIRONMENT

DIABETES

NUTRITION & PHYSICAL ACTIVITY

- **Parks and open space** (e.g., park is unused due to disrepair and safety concerns)
- **What's sold/how it's promoted** (e.g., advertising of high-calorie foods to children)
- **Norms/*Costumbres*** (e.g., standard large portion sizes)

ASTHMA

TOXINS

- **Getting around** (e.g., crowded roadway next to a school)
- **Air, water, and soil** (e.g., polluting industry)
- **Housing** (e.g., widespread mold in housing development)

Addressing issues in the community environment will have an effect on multiple health and safety outcomes. For example, increasing access to safe parks can affect rates of diabetes, hypertension, depression, and osteoporosis.

exists or organize its patients to address specific health threats in the community.

3. Systematically review health and safety trends

The quantitative data gathered through the intake and clinician prompts can provide vital insight into the major community health concerns in the area. The quantitative data should be supplemented by qualitative information drawn from clinician intuition and insight. In order to accomplish this, a venue should be established for review and discussion of the information gathered through the Inquiry elements describe above. This could happen as part of an existing problem-solving staff meeting, grand rounds, or as a separate discussion. The goal of this review would be to identify underlying, community-level factors that may be shaping health and safety outcomes (see Figure 4 for examples). These factors may come directly from the data collected (e.g., a large number of patients report that they don't feel safe walking in their neighborhood) or from clinician insight (e.g., "one of my patients told me they feel stressed going to school because of bullying. I wonder if that is a widespread factor in the mental health issues we're seeing").

4. Identify priorities and strategies with community partners

Working with partners outside the medical sector, through meaningful, ongoing relationships that go beyond resource referrals will be central to the CCHH's ability to participate in community-level change. The CCHH will bring a tremendous amount of valuable community health data (described above). Other partners will bring important information about community perspectives, conditions, and priorities. This will likely require meeting at regular intervals and communication and work in smaller groups between meetings. It is critical that there be a venue for sharing and discussion in order to identify potential actions to improve community health and safety. For example, based on reviewing health data and priorities, and applying the two steps analysis, the CCHH and partners may identify the need for a safe place for physical activity in a community. Then they can work together to figure out strategies to address the issue given the realities of their community (e.g., joint-use agreements, rehabilitating an existing park, forming neighborhood walking clubs). Such community partnerships will typically extend beyond the analysis phase and play a key role in the Action phase.

Action elements

Given the credibility of medical professionals, clinical staff and health institutions can play critical roles in advancing broader systems change. This can happen in a number of ways, including engaging in or supporting targeted advocacy efforts and developing model organizational practices. Actions should build on the evidence and partnerships that are developed in the Analysis phase.

5. Coordinate activity with community partners

Effective community change requires coordinated, comprehensive strategy, which in turn requires the capacity and engagement of multiple partners: some partners may have expertise in communicating with the media, others may be able to mobilize a broad constituency, and another may have expertise in terms of the details of crafting policy language. Building on the example of an identified need for a safe place for physical activity, the partners might identify a school facility that has recreational space but is largely closed after school hours. A subset of partners (e.g., the CCHH, Parks and Recreation Department, a youth service non-profit, and a faith-based well-

> If I'm a doctor and I have a new technology that works and I don't use it, what do you think will happen to me? I'll no longer be a doctor. Not putting in a traffic circle is doubling the chance of injury at that intersection. It can be viewed as a form of transportation malpractice not to implement known safety improvements.
>
> —Rajiv Bhatia, MD, Director, Occupational & Environmental Health, San Francisco Department of Public Health[23]

ness program) could come together to work out and implement a plan to establish a joint-use agreement with the school and to have a sustainable approach to maintenance, operations, programming, and costs (including liability). Partnerships with organizations outside of health are vital given that many of the decisions that have the greatest impact on health are made in other sectors, such as transportation, housing, and agriculture. Such partnerships can be mutually beneficial as identified health impacts can be very useful in arguing for or against a given policy or decision.

6. Advocate for community health

Clinicians can leverage their credibility on health issues and their direct experience with the health of community members to act as extremely effective advocates for health and equity through change in community environments. They can support community-identified advocacy goals by providing "expert" opinion in the form of testimony at hearings, interviews with the media, or talking directly with policymakers. There is a proud and effective history of such work—from physician-led campaigns resulting in car seat laws and thus reduced injuries to advocacy in support of tobacco control strategies and thus reduced lung cancer rates. As with the other steps in the Analysis and Action phases, this activity will be most effective when coordinated with partners and existing efforts. In particular, trusted allies can minimize the work and logistics involved in advocacy by creating opportunities for clinicians to engage.

Beaufort-Jasper-Hampton Comprehensive Health Services, Inc.[24]

Beaufort-Jasper-Hampton Comprehensive Health Services (BJHCHS) provides comprehensive medical and dental services in Ridgeland, South Carolina. Beginning in the 1970s, the clinic noted at least five to seven pediatric cases of soil-transmitted helminthes (ascaris, hookworm, and whip worm) each week, and attributed this pattern to poor water sanitation in and around the children's homes. Clinic staff knew that the best way to treat and prevent helminthes, and other diseases caused by poor water sanitation, was to first improve home sanitation. So the clinic sought grants to install septic systems and, in partnership with local community organizations, led the installation of septic systems and portable bathrooms in people's homes. Physicians ordered wheelchair ramps for those patients that needed them, and the environmental team associated with the project built the ramps. At its peak, the program installed 100-200 septic systems each year. The clinic, which now partners with the United Way, currently constructs between 20-25 septic units each year. The clinic's role in the community has expanded beyond alleviating unsafe water conditions to include rodent and parasite reduction and addressing other environmental conditions. Today, the clinic does not see any cases of soil transmitted helminthes disease in its patients.

7. Mobilize patient populations

Patients who enter the CCHH are directly affected by community conditions. The CCHH has a natural role in encouraging civic engagement and mobilizing the patient population in changing those conditions. Engagement activities can range from providing voter registration at the health center to connecting patients to advocacy efforts that relate to their health concerns to identifying spokespeople who have authentic voices on issues to bringing together and training groups of patients to take action on a priority issue. CCHHs should identify or hire staff responsible for community engagement and incorporating community members' perspectives into institutional decision making and community prevention efforts. Promotoras and community health workers associated with the CCHH can play a strong role in mobiliz-

ing the patient population. Engaging patients—and their families—in community change is an important strategy: family-led campaigns, such as changes in DUI laws, have made significant improvements to health and safety. Engaging patients in advocacy also leads to patient empowerment and indirect health improvements. As Makani Themba-Nixon, Executive Director of the Praxis Project, writes, "The act of organizing a community to engage in [a] policy initiative can increase social networks and reduce isolation and alienation, which can be as effective in reducing problems as the policy itself."[25]

8. Strengthen partnerships with local health care organizations

Partnerships between the health care facilities in a community are a valuable step in the move toward an emphasis on community-wide health improvement goals. By working together, different health care facilities are able to develop shared responsibility for the entire community beyond the individual patients that they serve. Community change efforts will inevitably affect the patient populations of multiple institutions. Many local and regional consortiums of community clinics already exist and can be utilized for this purpose. In other cases, these consortiums may need to be convened. These relationships can support numerous activities of the CCHH: sharing data to gain a more complete picture of health issues and trends in the region; setting shared priorities; sharing promising practices and challenges; bringing key (non-health care) partners to the table; and advocating with one voice for mutual interests. Forming these consortiums would facilitate and incentivize the adoption of the same health information technology with the same questions, the same health goals, and the same capacity building trainings across health care institutions. If such a large portion of the infrastructure components of the CCHH are consistent among health centers in a region, there will be a stronger regional movement for community health.

9. Establish model organizational practices

In many communities, health institutions are the most visible authorities on health. Given that position, institutions have a responsibility to ensure that their policies and practices promote health and safety. By enacting model policies, CCHHs can influence other community institutions and help set community norms. Examples of model policies include:

- Creating policies that promote equity: eliminate institutional discrimination, ensure cultural competency of CCHH staff, and ensure workforce diversity.
- Ensuring healthy foods and beverages are available and promoted in cafeterias, vending machines, coffee carts, and other concessions.
- Encouraging physical activity through building design (e.g., open, inviting stairways), meeting practices (e.g., walking meetings), and incentives for employees to travel to work by active means.
- Establishing procurement policies for geographic preference of locally and regionally grown healthy foods.
- Implementing policies and practices in CCHH facilities to support initiation and continuation of breastfeeding (e.g., Baby-Friendly Hospitals).

Health centers can also implement clinical practices that signal their engagement with broader community health issues. One example is the implementation of "green prescriptions." Green prescriptions have typically been used to "prescribe" non-pharmaceutical interventions such as physical activity and eating fruits and vegetables. The concept has been extended in some innovative sites to include clinicians recommending actions for community change that support individual behavior change (e.g., an instruction to walk more would be complemented by a recommendation to the city to repair sidewalks or add lighting and ensure neighborhoods are safer for walking).

Capacities needed for effective implementation

Successful implementation of the elements described above will, in part, depend on having certain capacities in place. In order to fully engage in the process of inquiry, analysis, and action, health centers and their partners should invest in strengthening certain internal capacities and resources. Some of these components may already be in place, but would benefit from a more targeted focus on community prevention and community change.

1. Staff training and continuing education

In order to achieve the goal of a CCHH, staff will need a firm understanding of how factors outside of the clinical setting shape health, as well as information and tools that enable them to play an active role in addressing those factors. One promising strategy for achieving this is through a training process that might first include a *community prevention readiness assessment*. This exercise

would include an analysis of health center activity, current capacities, and needs of staff. Based on the assessment findings, training units can be delivered on such topics as "understanding community prevention," "community prevention strategy development for health centers," "engaging in collaborative and inter-sectoral partnerships," and "clinicians as community health advocates." Trainings should draw on existing research, promising practices, case studies, and existing resources.

Clinics may want to explore existing requirements for ongoing professional development (such as continuing medical education) as an avenue for incorporating community prevention into continuing education. Incentivizing participation in trainings on community health and prevention—alongside existing courses on clinical pre-

vention—elevates issues that focus on the social determinants of health and skills such as community engagement and advocacy.

2. A dedicated and diverse team

Because community prevention is based on a multi-sector vision and approach to health, health centers would benefit from diverse staffing that takes into account the right mix of staff capacities and skills for that community. This would include a coordinated team of staff, both clinical and non-clinical (e.g., physicians, nurses, physician's assistants, social workers, promotoras, community health workers), who communicate seamlessly and have a clear understanding of each other's roles and objectives. For example, in addition to clinical duties, some staff would be responsible for tasks such as patient engagement, community prevention advocacy, participation in community partnerships/coalitions, and internal strategic planning to maintain an emphasis on community prevention in the clinic.

Moreover, staff will need to be equipped to understand the patient population and community (in terms of culture, language, history, and other demographics) and be able to respond to a wide variety of health and safety challenges. For example, an aging population has different needs than a population with a large percentage of children under five. Health conditions related to inadequate housing require a different set of clinical and community responses than conditions related to unsafe streets. In some cases, in order to improve health, legal strategies will be necessary; in others it may require awareness of local policy or the latest clinical preventive service recommendations or transportation guidelines.

Last, the CCHH would ideally establish a dedicated, paid position to manage the implementation of the CCHH and link the clinical and community components of the clinic's activities. The "CCHH manager" will be instrumental in transitioning the clinic to a CCHH and maintaining the vision over time. Support from executive leaders, boards of directors, and advisory boards will also be critical in implementing necessary systems and operational changes.

3. Innovative Leadership

A fully functioning CCHH may require a shift in the activities, culture, norms, and values within the institution as it currently exists. As with any shift in thinking or oper-

ations, effective and innovative leadership is needed to implement and sustain these changes over time. These changes might create challenges for staff (new roles and skills will be required), clients (a new relationship), and stakeholders (such as funders and partners). This change will only be possible if leadership is in place that is able to communicate direction clearly and engagingly, predict challenges, and create the sorts of systems and processes necessary to incrementally create change. This leadership will need to come from executive staff as well as boards of directors who have the skills and experience necessary to provide ongoing guidance and direction for the CCHH. These leaders will benefit from networks of executives across health homes to foster shared learning (aligned with the networks discussed below).

Overarching systems change recommendations

Community health centers are part of an integrated, complex health care system. Virtually every facet of their operation is influenced by external factors. To incentivize and support change within health institutions, regulatory, funding, and training mechanisms can all be used. In this section, five key areas for innovation at a systems level are discussed. In each case, the issues raised are extremely complex, and the dialogue is far from comprehensive; the intent is to identify the venues for change and to lay out directions for additional exploration and strategy development.

Structure health care payment systems to support CCHHs

Physicians, nurses, and other clinical providers are by definition concerned with the health of their clients, but current reimbursement systems limit the tools that providers have to protect and improve health.[27,28] Widespread adoption and promulgation of the CCHH model will require resources and incentives aligned with community health activity. Various options need to be explored. One option is to expand current reimbursements to support CCHH activities such as coordinating with public health departments and local leaders or to create incentives based on health and safety outcomes. In theory, capitation payment systems could create a focus on keeping patients healthy (and thus, lower costs), but have

been critiqued for the potential to incentivize systematic denial of care. Therefore, other models under consideration would tie payments to achieving specific health and safety outcomes. If incentives were tied to health and safety outcomes it would intrinsically elevate the role and importance of prevention and would motivate all health providers to think in terms of the most effective, and cost-effective, ways to maintain health.

There are a number of challenges. For example, insurers likely see only a fraction of the population as their responsibility and only for the relatively short period of time that the average individual stays with a health plan. As a result, "bundling" investment in community prevention from multiple sources will probably be necessary. Additionally, all communities do not start from an equal baseline in terms of the factors that shape health, so resources will need to be allocated based on need in order to ensure equitable outcomes.

Leverage current opportunities for government, philanthropy, and community benefits to support CCHHs

To date, a number of clinics that have established the infrastructure and capacity to engage in community-level change have been supported by private foundations and community benefits programs. Philanthropy has the opportunity to support implementation of CCHH's and elevate learnings and promising practices as models. Funders can also encourage other grantees to engage substantively with the CCHH in their communities. Further, due to their unique understanding of community assets and needs, funders can play an important role in facilitating effective implementation.

The Affordable Care Act includes funding streams that are aligned with principles of the CCHH and could be leveraged to spur implementation. The Center for Medicare and Medicaid Innovation reflects these concepts in its mission to improve quality of care, care coordination, and community health and will be issuing proposals to support these outcomes. At the same time, Community Transformation Grant (CTG) funds will be awarded to communities to improve environments to support healthy eating, active living, safety, and reduced tobacco use. These funding streams could be enhanced by aligning health center funding with other community initiatives, such as CTG. In addition to linking efforts across Health and Human Services, there are important oppor-

> I got a glimpse of how unusual the (Special Care Center in Atlantic City) clinic is when I sat in on the staff meeting it holds each morning to review the medical issues of the patients on the appointment books. There was, for starters, the very existence of the meeting. I had never seen this kind of daily huddle at a doctor's office, with clinicians popping open their laptops and pulling up their patient lists together. Then there was the particular mixture of people who squeezed around the conference table. As in many primary-care offices, the staff had two physicians and two nurse practitioners. But a full-time social worker and the front-desk receptionist joined in for the patient review, too. And, outnumbering them all, were eight full-time "health coaches."
>
> —Atul Gawande,
> *The New Yorker,* January 2011

tunities to link with other federal agencies (such as transportation, agriculture, and housing) and initiatives devoted to improving community conditions such as Sustainable Communities, Healthy Food Financing, Choice Neighborhoods, and Promise Neighborhoods. Targeting funds to CHC's that are prepared to work with community partners to leverage one or more of these resources could help achieve reductions in health care costs while improving health outcomes.

Establish consistent metrics for evaluation and continuous quality improvement

In order to build the evidence base and to support the sort of funding changes discussed above, evaluation metrics are needed that assess clinics' success at both building capacity and engaging in community-level prevention. Creating a standard set of metrics to measure CCHHs will enable clear evaluation, sharing of successful methods,

comparative effectiveness of clinical and non-clinical responses, and will also serve to further guide implementation by defining concrete goals. Additionally, metrics should be designed with sensitivity to the distinct conditions and challenges present in each community so that health equity is a fundamental consideration. The National Committee for Quality Assurance has undertaken a similar process to define the metrics for a patient-centered medical home by inviting the input of key stakeholders in defining the initial set of metrics.[29] A soon-to-be-released study from the Institute of Medicine ("For the Public's Health: The Role of Measurement in Action and Accountability") makes the case for consistent measurement.

Standardizing metrics along with the questions and information entered into the electronic health records would ensure that health centers can compare data and that the data could be used by other institutions, such as health departments and universities, for research. A national convening of informed clinical and community prevention stakeholders would be instrumental in fine-tuning the practice and implementation of electronic health records to effectively collect expanded information.

Strengthen and utilize networks

As the approaches presented in this paper are implemented, taking advantage of opportunities to share learnings and collectively address challenges will be critical. Individual health centers will develop innovative approaches depending on their capacity and the specific needs of their respective communities, and sharing these experiences is central to the refinement and advancement of the CCHH concept. In addition to sharing promising approaches, collective discussion and problem solving around shared challenges and capacity-building training should be emphasized. Existing associations and forums that bring institutions and/or providers together can be utilized for this peer networking and problem solving purpose. In some cases, new learning networks may be necessary. Additionally, networks and associations can strategize and advocate for changes to local, state, and federal policy that would support the successful function of CCHHs. Examples of the sorts of issues that networks might weigh in on include changes to reimbursement systems, updates to the Federally Qualified Health Center guidelines, and design of Health Information Exchanges. Generating professional and political leverage will be critical to broad implementation of CCHHs.

Build a Cadre of Health Professionals Prepared to Work in CCHHs

Professional training programs for clinicians, such as medical school and nursing school programs, should be augmented to adequately prepare future health professionals to support community prevention efforts. Community prevention elements should be incorporated into curriculum (e.g., understanding the relationship between health outcomes and community conditions, the role of the clinician as effective health advocate) and residency programs. A number of models exist both for classroom and hands-on learning.[30] What is needed is a commitment to develop and implement the most effective approaches.

The training curriculum recognizes that health centers across the country have differing needs and capacities, and are located in diverse communities. Resource or technical assistance providers should be established to provide directed training and consultation that are responsive to the particular needs and issues of the community that the CCHH serves. Specialized training that targets and builds the capacity of health center leadership and boards of directors will likely be necessary. This sort of training could be delivered on a regional basis as a building block for a network of executives.

Professional societies and other national organizations with community prevention expertise have a role to play in preparing clinicians. In order to incentivize future health professionals to become more engaged in community prevention, programs such as the National Health Service Corps could be expanded to include a track for clinicians placed in positions with an explicit focus on addressing community conditions in underserved communities.

Conclusion

Health care has been largely a private matter between patients and clinicians, taking place inside the walls of an exam room. Many clinicians know that by the time a patient reaches their office, health has already been irrevocably compromised by factors that they are ill-equipped to address. The nation's health institutions are left to contend with a growing burden of complex, but preventable, illness and injury. The evidence argues for a new approach to health care: one that integrates quality health care services with strategies to support people in living healthier lives. This shift necessitates engaging in efforts to reshape

communities. The Institute of Medicine summarized the situation in a 2000 report on health promotion: "It is unreasonable to expect people to change their behavior when so many forces in the social, cultural, and physical environment conspire against such change."[31]

The concept of the community-centered health home builds on years of work and innovative thinking, including pioneering work on community-oriented primary care. This paper is intended to catalyze discussion and to express ideas under development. Currently, there are groundbreaking and effective practices linking quality health care services with actions focused on community environments, but they are largely isolated initiatives. There is an opportunity to refine and systematically advance the community-centered health home model to reach across the country to the communities most in need. Revamping health care along these lines is imperative and could dramatically reduce demand for health care while extending the length and quality of life nationwide.

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