International Public Healthcare Startups: The Future of Medicine

Katherine Batman

Abstract:

Health should not be the absence of disease but the presence of wellness. However, sick care of the diseased state is the focus of modern allopathic medicine. Half of the United States' healthcare budget is spent on five percent of the population. Medical and pharmaceutical companies see the advantage of focusing on tertiary illnesses, or illnesses that perpetuate disease. It is socially and morally good to treat even tertiary illnesses, but earlier preventive steps could be taken to minimize expensive tertiary care treatment. Currently, creating products that treat disease states is profitable, while maintaining wellness through primary care is not. That is where the government and insurance companies have the opportunity to incentivize primary-health and wellness operations. For example, a health insurance company may incentivize a free health examination with a financial rebate. Insurance companies reduce gym membership rates if the member attends with enough frequency. Additionally, the government may tax consumables that hinder health such as tobacco products and items with a high sugar content. Even with eighteen percent of U.S. GDP spent on healthcare and with insurer incentives, primary care is not sufficient in the U.S. and in many international locations, and the focus on tertiary care has been catastrophic for the economies[1]. Therefore, it is worth examining country-wide and international strategies for increasing preventive care.

Validating the behavior change model

Small Community Health Programs (CHP) were piloted in the 1960s and 1970s in Latin America and after many CHP failures in the 1980s and 1990s, successful international models have emerged. Therefore, now is an optimal time for CHP research and existing CHPs to be studied and adapted for best practices. Research methodologies from Columbia University's best practices for CHPs were analyzed. Recommendations included long-term commitment, a unified core team, connected partners, a Community Health Worker (CHW) who promotes care at the individual and household levels, robust motivation and trainings, and strategic deployment of the program based on resources and needs.

To make a successful CHP, the concepts of social and behavioral changes must be understood and executed. The University of California, Berkeley, researched these concepts through a review of Community-Based Participatory Research, and the points were distilled as the following[2]. UC Berkeley developed community-based participatory research (CBPR), which identifies a social or behavioral concern and integrates the input of all stakeholders to improve the community.

The CBPR is defined by the Kellogg Foundation's Community Health Scholars Program as "a collaborative process that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities."

Case Study #5 in UC Berkeley's Community-Based Participatory Research is reviewed here to give an example of the study's community social and behavior change. This study focuses on community health and nutrition through "addressing food insecurity in San Francisco's Bayview Hunterpoint." After identifying high obesity rates as a health behavioral risk, various stakeholders united to address the concern. The Communities for a Better Environment group determined that there is limited and uncertain access to nutritionally safe and adequate foods. This group partnered with the nonprofit organization Literacy for Environmental Justice (LEJ), and health educators taught youth to think critically about the nutrition, lack of access to healthy foods, and solutions or incentives that would support

accessibility. The youth controlled the next steps in behavioral change through surveying the community on nutritional needs and desires as well as inventorying store shelves, where they found a deficit of healthy foods in grocery stores. Because it was often more profitable for shops to shelve unhealthy food, a "Good Neighbor" policy was enacted that provides incentives to stores which stock healthy food. Even though a behavioral concern was identified and different community bodies collaborated to minimize obesity, the project is still struggling to make nutritional behavior changes. Eating healthy food is not yet a habit for the community, and an optimal price point must be reached for the farmers, shops, and customers. Patience for implementing strategies is needed for community change.

Thirteen recommendations from the UC Berkeley Community Based Participatory Research exist for supporting a community in behavioral research and policy change, summarized as the following:

1. Build leadership and base of support for research and action by being genuinely community-driven.
2. Use a mix of research methods: stories and statistics.
3. Produce high-quality research that can stand up to careful scrutiny, but make results easily accessible and highlight their policy relevance.
4. Use approaches and processes that reflect the local community culture and ways of doing things (even if it slows down the process).
5. Remember that research includes not only the partnership's original investigation but also subsequent study of the policy considerations involved.
6. Ensure that partners understand that advocacy is different from "lobbying."
7. Decide on a policy goal and identify the relevant policy targets and change strategies, but always have at least one "Plan B" and be open to compromise.
8. Build strong, strategic linkages with organizational allies and other stakeholders.
9. Through trainings, web-based tools, and other resources, increase partners' understanding of policymaking and, as appropriate, legal processes and issues.
10. Offer solutions, not just complaints, to policy makers and decision makers.

11. Plan for sustainability by seeking new funding streams, including those that actively support and encourage community-partnered research and action at the policy level, directed at promoting health equity.
12. Take advantage of the university's or health department's media office.
13. Recognize that policy change takes time, and commitment through the process is critical.

Summary of CHWs in Global Health: Scale and Scalability[3]

Columbia University and John Hopkins University outlined the desired Scale and Scalability model for Community Health Programs. The first of six factors in this system is a strong connection to PHC. Second, the CHWs and supervision must have a long-term commitment to the program. Third, the CHWs promote care for the individual, family, and community. Fourth, the CHWs should be motivated, trained, and supervised. Fifth, the program should develop strategically – otherwise, problems of quality and management, poor supervision, and stock-outs of supplies and equipment will occur. Finally, there must be standardization of existing CHW and medical systems.

The Economic and Social Benefits of a CHP

Community Health Programs (CHPs) are the greatest hope for lowering the cost of healthcare. In this research investigation, two U.S. CHPs and two Indian CHPs were assessed for medical scope, business model, and supporting resources. In the conclusion, the best-practice CHP model is distilled and has potential profitability.

With a macroscopic view of health, the international causes of morbidity and mortality are shifting from infectious disease and maternal-and-child illnesses to illnesses of stressful and migrating lifestyles. However, the scope of health on the microscopic level still must be assessed per individual, since health differs between people and between communities. Therefore, CHPs meet the healthcare needs at the microscopic level, and in aggregate support the temporally fluid macroscopic healthcare system.

India has developed as more industrious since independence in 1949. Although much of the country is still traditional and rural, there has been a surge of people migrating to the cities and toward corporate jobs, rather than traditional artisan and agricultural work.

The urban population has grown from 17% to 31% between 1951-2011. There has been a governmental and individual movement towards an era similar to the industrialization and mass-manufacturing or systems period of the U.S., beginning around 1900. How does this affect health? With an increase in sedentary lives and stress levels, it is expected that the trend in lifestyle illnesses such as heart disease, diabetes, and mental health illnesses would increase. With longer life expectancies, there is also a higher chance that people die from lifestyle and longevity-related illnesses, including cancers and the previously mentioned lifestyle illnesses.

The three major populations are rural, migrants, and urban. Per total population, the Indian urban population has approximately doubled since independence. The following is a summary of various populations, illnesses, and/or factors that affect the demographic's health[4]. In rural communities, low income, low social status, and low education impact health services Migrants' health is impacted by greater stress levels so this population is more likely to develop cardiovascular diseases and diabetes than natives. they also are more likely to develop mental health related conditions such as stress, depression, and anxiety. Migrants are likely to develop unhealthy substance use, under-nourishing diet changes, and unhealthy sexual practices. Many of the migrant-related health conditions exist because there is a lack of social support. Finally, urban health is more often characterized by communicable disease, since people are in closer proximity, which affects hygiene, sanitation, and air quality.

Scope of CHP Field Research

Four CHPs were researched and analyzed for effectiveness. The sites included a governmental, rural, Indian CHP; a grassroots, semi-urban, Indian CHP; a grassroots, urban, U.S. CHP; and a grassroots, rural, U.S. CHP. With administration and CHWs, phone and email interviews were conducted with the U.S. organizations and in-person conversations during the Indian CHP field visits. The dialogue focused on CHP leadership, mission, and scope; program and CHW development; and technological, financial, and personnel. Results emphasized the importance of a general framework and adequate resources, while making the CHPs deeply individualized to the community by examining health and socioeconomic needs and supporting behavioral and health change. All CHPs desire to make healthcare available, accessible, acceptable, affordable, and appropriate. Healthcare goals are attainable through CHWs, who are trained to be the connection between the community.

and health services by providing door-to-door health screenings and education. CHPs are regionally unique, depending on specific community challenges, including local health concerns and community dynamics.

The connections between each health facilitator is outlined below. At the ground level, the CHWs are able to visit homes to educate and monitor health. Community Health Workers are managed by a senior CHW, who can relate to the other CHWs because she is already a member of the community and is an experienced CHW. Her seniority also allows for understanding of the program's protocols. Within a village, the CHP would influence the stationary village clinic and the mobile CHW team. Additionally, there is the technology system that receives information from the ground level and reports the information to the health coordinator, who takes the summary and shares it with the community. Finally, the health coordinator facilitates all of these interactions, and collaborates with the CHW manager.

Case Studies #1[5] and #2[6]: ASHA Program: Urban poor, semi-urban, and rural program in India

Environment: Program Background: P.K. Halli, Karnataka

Long-term commitment from all health workers can be witnessed by Sister Mary's dedication to the P.K. Halli program, which is supported by the study from the Mount Sinai Journal of Medicine and the UC Berkeley community behavioral change research. Twenty-five years ago, Sister Mary Matthews saw a healthcare deficit in P.K. Halli, India. With her medical background and passion for social work, Sister Mary started health and education programs. Originally, no qualified health workers or programs existed in the Bellary Taluk, and basic health care was necessary for miners and maternal-and-child health.

The CHW program has benefitted this community by providing health awareness and illness prevention for maternal-and-child health. Today, Sister Mary connects qualified women to the ASHA program, visits Sub-Centers (SCs) and immunization sites, and advocates for grant funding. This region uses a top¬-down, governmental health structure to fulfill the community's health needs. This includes monitoring and education by the ASHA workers, diagnoses and medicine administered by the SC and Public Health Center (PHC), and more complex diagnoses and surgery provided by the hospital. Additionally, an emergency vehicle is available for deliveries, and public transportation is available for less-

for less-urgent health needs. The government health systems work together. For example, walk-in immunization clinics are offered at least one Thursday per month and hosted by two ASHA workers, one SC nurse and one Anganwadi worker. During one visit, Sister Mary visited the immunization clinic and noticed a malnourished 3-month-old infant. Sister Mary learned that the child was not taking his mother's milk and had diarrhea, so she directed the health workers to refer the infant to the local free clinic. In addition to the free clinic for emergency situations, the community also has a baby clinic that replaces the original dependence on home deliveries. Sister Mary and the ASHA program have the goal to develop health, specifically maternal-and-child health, in rural communities. First, women should be empowered through information, education, training, and culture. Sister Mary desires to support resources with resources by supporting women to deliver health, and therefore support human rights and human dignity. The home is the first center of education, and the mother is the first teacher. To succeed, you must place great importance on female education.

The program has improved the health of the 6,000-member taluk population. However, there is much room for improvement because Sister Mary estimates that fifty percent of the population still does not follow the CHW advice. Patience and continuous effort are needed to change mindsets and lifestyles. The ASHA program and the integrated governmental health scheme is a good foundation because it brings maternal/child health, basic health, education, and awareness to unreached people. Sister Mary has developed a very well operated system that aligns with the studies from UC Berkeley, Columbia University, and Johns Hopkins University. First, a shared concern should be identified. Next, it is important to understand how research findings could be used to address the problem on a broader level while identifying potential targets and policy change approaches and working with allies (including policy makers) to move forward.

Environment: Program Background: Challakere, Karnataka

The integration of PHCs and CHW program at Challakere is supported by the successful program outline of the Mount Sinai Journal of Medicine. The Doddaullarithi planning unit is top ranked in the state of Karnataka. It is one of seven SCs in the Challakere Taluk, located in Chitradurga. The planning unit reaches forty villages, or a population 50,000, and approximately fifty to sixty cases are seen per day. Until the doctor came on site six months ago, the Challakere

PHC was run by the nurses and ASHA workers who were accredited by the state of Karnataka. The doctor was posted at this location by the state government based on need and skillset. The doctor, nursing staff, and ASHA workers work from 9 a.m. to 4:30 p.m., and ASHA workers are on the field in the morning and report to the PHC in the afternoon. Similar to other PHCs, the hierarchy of health work exists, where ASHA workers address primary health care and monitoring, the PHC handles general illness, and more complex problems are addressed at the local hospital. Cases that this center reviews includes fevers, common colds, RTIs, UTIs, diarrhea, and pregnancy cases. More complex cases are sent to the trauma center in Challakere by ambulance. General procedures exist for emergencies and reporting. For example, during the emergency of a cholera outbreak, a team of doctors and supporting specialists test the groundwater for cleanliness, and areas for community public health education are updated. These measurements are compared to the notes of the previous year. Once health issues are identified, they are controlled, including covering open containers of water and discarding stagnant water into the garden. The general procedures of reports start with the monthly PHC report built on ASHA statistics. The Taluk doctor sends this information to the district. This information is distilled and sent to the central government, and an annual report is submitted. When outbreaks occur, information is submitted more frequently. Specific health areas for this PHC include tuberculosis, HIV, and malaria. ASHA workers have a symptoms sheet that they record. If a patient is suspected to have an illness, he is sent to the PHC for diagnosis and a treatment plan. The ASHA worker then has follow-ups with the patient.

Becoming an ASHA Worker

In order to become an ASHA worker, a woman should have completed an eighth standard education and should be literate[7]. It is recommended that the woman be married with two children to show sufficient understanding of how to raise a child, and and be unable to bear additional children. Additionally, it is recommended that she be invested in her community and be passionate about health. The aims of ASHA work are to monitor health and give education for maternal-and-child care. To meet this aim, the ideal ratio of the ASHA workers to the population is 1:1,000, a ratio supported by the WHO. Within the 1,000-person population, there will be an estimated 25 pregnant women at any given time, meaning that there will be approximately two child deliveries per month. The population of eligible couples or a married couple where the woman is between the ages of 18 and 45 is approximately 160 couples per population.

After a referral to the ASHA program from a healthcare provider, the woman begins her 21-day, 12-hours-per-day training with forty to sixty other women. The woman is primarily trained in maternal-and-child health, antenatal care/ postnatal care (ANC/PNC), family planning, and related secondary health topics. The focuses of additional trainings are ASHA responsibilities, lifestyle suggestions, and awareness of health and hygiene. After the initial 21-¬day training, a field expert facilitates need-based trainings. Training updates may include infant health, blood smears, tuberculosis control, and information about malnutrition, kidneys, and cancer. During follow-up trainings, a PHC doctor may reemphasize past health topics or teach newly discovered health information. The ASHA worker can provide education on maternal-and-child and family health. The role of an ASHA worker is to mediate between the PHC and the community through door-¬to-¬door education and monitoring for maternal¬-and-child health and associated health topics. The frequency of visits and topics of discussion depend on the stage of maternal¬-and-child health. An ASHA worker would meet with a newly wedded couple to suggest planning a family of one or two children and would supply contraception. If a woman becomes pregnant, the ASHA worker would make a few visits per month to give nutrition recommendations, estimate the delivery date, assist with travel during delivery, and assess the woman's health. Forty-one days after delivery, the ASHA worker carefully monitors the woman's and child's measurements. Until the child is five years of age, the ASHA worker partners with the mother and child, educates the family about hand washing, water purification, ANC/PNC, vaccinations, and symptoms of communicable diseases and how they are spread. When the child is three to six years old, health care is given to the Anganwadi worker. After the child is six years old, he is enrolled into first standard, and the school system will be responsible for monitoring his health.

Resources: Finances, Technology, and Materials

The income for an ASHA worker is based on commission. Her payment is delivered from the PHC or from the government, which is based on the monthly report submitted to the PHC. Because India has a statistical average of two pregnancies and two influenza cases per month, the ASHA worker is only paid for a maximum of two of each of these types of cases. For example, if there is one delivery and two cases of influenza, the ASHA worker will be paid for these three medical cases. If there are four deliveries and three cases of influenza, the ASHA worker may collect money for two deliveries and two cases of influenza. Additionally, if more than two of each case is present, the PHC may investigate to see the reason for these trends. To support her efforts, the ASHA worker uses various materials, technologies, and devices. The ASHA book acts as a journal of shorthand notes of her daily log. This book can be later referenced for outbreaks and specific patient information. To make this data more viable for reporting and policy change, the government has partnered with CommCare, a mobile data management application designed to collect and report community heath information. Textbooks are given for general information on public health. The scale holds the baby in a nylon mesh and uses a hook and spring system, measuring with an initial five kilograms and increments of 100 grams. Frequent height and weight measurements overtime will allow the ASHA to judge if nutritional or medical intervention is needed. The ASHA worker treats fevers with paracetamol. Each ASHA worker has a free SIM card and phone to contact the PHC worker in case of emergency.

Case Study #3: MAYA Health[8]: Urban poor and rural program in Karnataka, India

Environment: Program Background

MAYA is an NGO based in Karnataka, India. For 25 years, MAYA has intervened in systemic issues, built models, and finally scaled each social program. This process has engaged rural people to become entrepreneurs in MAYA Organic and has supported children and their labor rights through Labournet. The MAYA aims to create an empowered and equitable society that systematically addresses livelihood, education, and health. Health is the newest systemic issue that MAYA wished to address. Two years ago, MAYA Health was created, with a goal to support health proactively, through CHWs. Most of India's current health system is reactive, because people are not seen by health care workers until they are sick. Rural and urban poor communities are most affected by illness, catalyzing the cycle of unemployment, lack of education, and poverty.

The MAYA Health model uses a bottom up approach to health. In order to get preliminary understanding of the customer base, the MAYA Health program first assigns one woman, a Health Navigator (HN), to a community of 2,000 people, a population that is double the recommended amount by the WHO. These HNs take a baseline survey of the community to understand the knowledge, practices, attitudes, and coverage of services in the community regarding health and well-being. From this survey of a sample population, primary health

concerns and contributing factors are identified. In conjunction with the survey, MAYA Health would seek an existing business or NGO that understands the local people, culture, and language (that has a presence within the community). Through this organization, the local PHC, and MAYA Health screening, women who meet CHW criteria would be selected. Groups of fifteen to twenty women are an HN enterprise. This group is trained for the following year regarding the community's primary lifestyle concerns. During the training, the women go out into the community to monitor health and give suggestions. After the one-year period, HN training is complete and the HN members continue to support the community's health. Currently, the program is piloted in Channapatna, a semi-urban community. In this region, MAYA Organic is the identified existing NGO working in this community. The MAYA Health HN director, Rashmi, has worked with both MAYA Organic and now MAYA Health. Within the communities, women were selected to be the HNs. The original group of HNs now works with Rashmi and volunteer experts to learn more about health and entrepreneurial skills. The second group of HNs is in the 6¬-month phase of field work and revision. After this one-year period, each HN is expected to make a viable income based on the clients and community with whom she had registered and followed up. Need-base training and periodic monitoring is provided by the local implementing organization and remotely by MAYA Health. Contrary to the recommendation by the Mount Sinai Journal of Medicine, MAYA Health hopes to develop the program rapidly, with 1,000,000 people reached in the next five years.

Becoming a Health Navigator

Health Navigators are supported in four major areas: awareness, delivery, mentoring, and monitoring. HNs go through six months of health education, goal-setting training, and financial management. The remainder of the year is spent in developing skills and working with the community. In order for a woman to become a health navigator, it is recommended that she has a minimum education of 7th standard, is married, is eager to learn about health, and plans to stay in the village.

Training and Work

A group of fifteen to twenty selected women are considered an HN enterprise, and currently two groups are supported by the implementing organization, MAYA Organic. This is similar to the WHO's recommendation of thirty CHWs per manager. During the following year,

this group is taught preventive health topics, with a focus on their community's awareness and primary lifestyle concerns. The women work as a team and are taught as a group and as individuals. They are trained to be health entrepreneurs, where they set group and individual goals related to finance, community education, and qualitative and quantitative goals of community members registered with the program. The six-month training period allows the HNs to learn how to interact with their communities and their health under the guidance of MAYA Health. After the one-year period, HN training is complete and the HN members continue to support the community's health. HNs encourage each individual to take responsibility for diet, lifestyle, hygiene, and sanitation. HNs connect the community to the PHC and also promote community participation in maintaining or improving health.

HNs work to ensure the following services for the clients:
- Tracking health parameters with community health records.
- Developing patient diet and exercise plans.
- Providing counseling on diet, lifestyle, and stress management.
- Ensuring compliance of treatment from doctors.
- Referral and linkages to other existing health service providers.
- Formation of community groups to enhance collective actions and motivations.

Resources: Finances, Technology, and Materials

During the first year of training, each HN will receive a stipend of 3,000 rupees per month. This income provides stability while the HN builds her reputation and client base within the community. Additional commission can be received when a client signs up for the MAYA Health registration and follow-up for products and services that meet the client's needs. During the one-year training period, after month three, MAYA will slowly start reducing the stipend amount to meet with the revenue required for the HNs to sustain. Currently, primary data collection and compilation is done manually, which is tedious and time consuming and also poses the challenge of data discrepancy. MAYA will be integrating technology to make this activity time efficient and also add on features for an interactive health education session and other tools to aid HNs. The HN uses a blood-pressure cuff, glucometer, and other monitoring technologies to support her work. Currently, information is hand-written in books. This data storage system does not meet the program needs, because MAYA

Health wishes to use individual and community data to allow clients to set health goals based on up-¬to¬-date, personalized health indicators. This application and feedback system are still progress, because the goal of the data is to produce high-quality research that directs the allocation of health resources. The timeline is not what MAYA Health intended, but it is supported by the UC Berkeley study for implementing social and behavioral change. Because the program focuses on the primary health concerns of a community, diabetes and hypertension are the two areas of health for which MAYA Health has developed products and services. Height, waist, hip, and weight measurements are taken to support the initial doctor's referral and diagnosis. With medical instruments provided by MAYA, the HN tests blood sugar and blood pressure for diabetes and hypertension risks, respectively. Depending on primary health concerns of future communities, MAYA Health may develop services for eye care, respiratory illnesses, and other common illnesses, requiring an increase in the essential technologies used by an HN.

Case Study #4: City Health Works[9]: Urban CHW program in New York City, U.S.

Environment: Program Background

The City Health Works group was founded in 2013 to combat chronic health issues through understanding a community's needs and building trusted, long-term relationships with clients9. City Health Works claims that at-risk communities struggle for three reasons[10]. First, interactions may not be fruitful. A patient may not identify symptoms or they can't communicate with clinicians, because they can't speak English. Second, the health system pays for volume; it does not value patient understanding of living healthfully. Finally, clinicians are often detached from the day-to-day life of patients, especially patients who have chronic illnesses. City Health Works believes that healthcare committed at the individual level helps avoid costly visits to the emergency room and supports individual responsibility for health management. The goals of this group include leading behavior change, disease prevention, and disease management through creating the Health Coach jobs in low ¬income neighborhoods. The City Health Works' mission is to "create healthier, stronger neighborhoods while reducing healthcare spending with health coaching and coordination with healthcare providers." The City Health Works program combats this concern through individualized tools, support, and education for home life and doctor's visits. The

program focuses on preventive health through realistic goal-setting for all areas of health (including areas of social, medical, and psychological health). Through the local workforce of Health Coaches, the patients have more accessible and affordable care. Because of this interaction, clinicians have insight into the home and life of a patient and can more efficiently and effectively diagnose and treat the patient.

Becoming a Health Coach

A Health Coach is a person of any gender who lives in and is invested in the community. Health coaches are required to have earned a minimum of a GED, and the interview process assesses natural empathic, listening, and motivational skills. Interpersonal skills are critical because the Health Coach should connect with and motivate the community to achieve healthier lives. Finally, the Health Coaches are often bi¬lingual to meet the multilingual needs of this specific community. Health Coaches decide their occupation, because allows them to support their neighbors. This role also allows the Health Coaches to gain knowledge about chronic illness prevention as well as health and wellness.

Training and Work

Coaches are trained and supervised to evaluate health holistically by the Director of Health Coaching and Health Coach Supervisor. Through physician input, the Health Coaches are able to learn about motivational coaching, coping strategies, and health education. This insight allows the Health Coaches to recognize health issues in their patient interactions. As necessary, the Health Coaches are trained to connect clients with local health services. During the initial month of interacting with a Health Coach, the client's clinical, emotional, and social needs will be reviewed. Additionally, personal challenges and health concerns will be discussed. In the following five months, the Health Coach will motivate and educate the community. Education takes place regarding eating habits, medication management, stress coping skills, and financial management. Frequent communication is critical and happens electronically, during face-to-face meetings, and during home visits. In the second half of the first year, communication is further increased to external health contacts, who introduce the individual to appropriate health services like clinicians and social workers. This awareness allows a client to understand available resources and health concerns before an illness is out of control. Finally, in the following years, the Health Coach introduces a client to a variety of ways

to live a healthy lifestyle, including walking clubs, local events, recipes, and resources. Even after the in-person sessions are completed, a Health Coach will continue to check in and provide support.

Resources: Finances, Technology, and Materials

This business model is currently supported by a mixture of grant and foundation support, and service contracts with hospitals will improve healthcare delivery while reducing costs. According to Elsa Haag, the Operations Analyst at City Health Works, the payment model is evolving quickly. Payment models for the Health Coaches have been guided by local hospitals. The City Health Works supportive technology is centered around software that allows clinics and Health Coaches to collect data and make well-informed decisions. Since Health Coaches are not clinicians, they don't carry medical devices with them. Instead, the Coaches connect clients to clinicians who measure blood glucose and blood pressure.

Case Study #5: Healthy Northland[11]: Rural CHW program in Minnesota, U.S.

Environment: Program Background

Supported by the state health commissioner, Dr. Edward Ehlinger, Minnesota's Statewide Health Improvement Program (SHIP), promotes health by integrating it into everyday life. Examples of promoting health include creating safe places to walk, allowing access to healthy foods, integrating health in work, and supporting breastfeeding in public. For the last two years, Healthy Northland has developed SHIP methodologies in semi-urban and rural regions of northern Minnesota. Louise Anderson is the director of the Carlton/Cook/ Lake St. Louis district. Healthy Northland promotes five areas of a healthier lifestyle: active living, healthy eating, clinical care, tobacco-free living, and healthy communities. Relating well to the community is prioritized. To do this successfully, Healthy Northland has introduced groups of eight to ten paid, part-time community consultants who take time out of their work schedule to give input on proposed community programs. One instance of understanding the needs of the community can be highlighted in SHIP when staff decided that a low-income mobile-home park was in need of sidewalks for exercise and community interactions. However, when staff went door-to-door in the community to speak about the idea, they found that the community did not want sidewalks. Instead, they said a playground would be best for

supporting the community's interactions and exercise. SHIP supported the playground's construction and met the community's request. Many of the communities that struggle with health are Native Americans and people of color. Disparities occur in education completion and salaries, making support in these communities crucial for community stability and individual well-¬being. Healthy Northland provides support and behavioral change by putting the community at the center. Health statistics of that region will be explained, and staff will ask the community if the data reflects them. Next, the capacity of current and potential programs are reviewed for accessibility, affordability, and adequacy. It is an evolving process centered around the community's needs.

Becoming a CHW

CHWs are selected and developed on a case by case assignment. First, completion of a high school education is required. The health worker's background is very important. In the interview process, a CHW applicant is asked whether she grew up in a community of poverty, whether she lives there today, and whether she is a person of color. The CHW should have cultural humility, the ability to listen and learn, and the drive to impact their community. Deb Hernandez's story is a specific example of the recruitment process. Because Healthy Northland found that it is easier for a community of Native Americans to relate to someone of their same ethnicity, the first CHWs were Native Americans. For example, Healthy Northland recruited and enrolled two Native American individuals, and Deb Hernandez was able to work long-term with the program. She is now working at the health center in Duluth, specializing on the tobacco cessation grant.

Training and Work

Currently, Minnesota is the only state to offer a CHW curriculum, and the standardized fourteen-credit certification program was developed by colleges in the state. In the Healthy Northland program, CHWs are trained with this program and supported by statewide and national health programs (such as the Mayo Clinic requirements) so they are equipped to connect community members to resources to improve quality of life and health for all people. A CHW's goal is to connect communities with health and social-service systems. Engaging with and educating the community is critical to ensure that people understand their health and resources. This engagement goes both ways, because the health and social services systems should be informed of community needs and perspectives. Chronically ill patients and people experiencing

Overall, work covers the following areas:
- Gather lifestyle and survey assessments
- Increase client self-efficacy to achieve wellness
- Educate clients on maintaining wellness and managing chronic conditions
- Identify individual and community needs
- Seek appropriate professional develoment opportunities
- Document all activities as detailed by direct supervisors

Resources: Finances, Technology, and Materials

The Healthy Northland program relies on state funding and grants. Grant proposals often support very specific projects and require detailed objectives. For example, the CDC awarded the Community Wellness Grant to the seven-county program in Minnesota. This requires an emphasis on healthy eating and exercise to lessen diabetes, strokes, and hypertension. Additionally, SHIP awarded a one-¬time endowment to the Healthy Northland program. To gain financial support, evidence of reduced healthcare costs should be present. Often, a hospital will lose ten to fifteen percent of its funding for readmitting patients within a certain timeframe. Healthy Northland is partnering the CHWs with clinics and hospitals to support patients with chronic diseases or those who are at risk for readmittance. This information is conveyed to the Minnesota Legislature. Funds generated by the hospital do not cover the cost of CHWs, so it is critical to build good evidence that their work saves money in the healthcare system. After demonstrating that the program is successful, they can apply for further grants. Unfortunately, there are administrative transitions currently, and grant funds are running out. Finally, external resources help the community with screening and awareness. The American Lung Administration led hypertension assessments. Immunizations, and family mental health services, pediatrics, and primary health services are integrated with the local support. Social groups are also present to promote health - for example, the Community Action Duluth brings advocacy and outreach to the families with respect to housing, food, work, and education completion. There is an integrated network that supports collaborative health and learning.

Conclusions

After spending time with MAYA Health and after reexamining the Mt. Sinai and Berkeley recommendations, the following criteria were consistent among successful CHPs:

1. Observe the health needs of a specific community.
2. Train CHWs to meet needs: bring health awareness and health/hygiene/sanitation education.
3. The CHWs connect the community and the local health personnel and facilities.
4. Make healthcare accessible, affordable, adequate, acceptable, and available.

Current financial and political structures in the healthcare systems in India and the U.S. do not inherently support all citizens. Therefore, starting a series of CHPs would help socially connect people to primary healthcare. To start a CHP in the U.S., the program would likely be grant-funded, based on research, feasibility, and need. Grant providers' specific agendas could support or inhibit health initiatives. For example, a company that solely manufactures heart devices may require the CHP to emphasize blood pressure testing and ECG monitoring, whether or not heart and vascular related illnesses are the leading health concern in that community. In comparison, Indian healthcare startups often begin with a passionate team and a changing scope of work. These programs are funded by acquaintances or by large companies that legally donate two percent of their profit to social development. This can be a benefit or concern for goal-setting, commitment, and time constraints. For example, it may take extended time to restructure types of services a program provides, and the stakeholders and consumers may not trust the company because it lacks consistency and clarity.

India is known as the "Graveyard of Healthcare Pilot Projects." After the assessment of the four different CHP systems and by working in an Indian healthcare start-up, this claim has proven accurate. For a start-up to be successful, the group must have vision, effective people, and financial resources. Because the ASHA workers and the Healthy Northland are sponsored by the government, these systems are likely to succeed. MAYA Health has a moderate amount of support in these three categories with a grand vision and is slowly gaining logistical understanding of the company. Finally, City Health Works seems to be taking a reasonable approach in all three categories maintaining its reach within the New York City community.

To be successful, a Community Health Program should have long-¬term commitment by all members of the core team and partnerships. Its objectives should be concentrated and strategic, addressing the holistic health of the individual and community. The best practice is to

to have health driven by lifestyle and preventive care so sickness is minimized.

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