As a Community, We CAN: How Collaboration in East Hawai‘i Led to Community-Wide Initiatives Focused on Reducing Avoidable Emergency Department Visits and Inpatient Admissions

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Abstract

East Hawai‘i and its local hospital face unsustainable cost and health care utilization trends. The medical and social service organizations in this region, which includes the city of Hilo and its surrounding area on Hawai‘i Island, previously worked in silos regarding coordination of patient care. To mitigate these factors, community initiatives have been implemented to address the needs of high-cost, high-need (HCHN) patients. Can community initiatives that better coordinate medical and social services to directly address social determinants of health improve quality of care and reduce utilization of emergency department (ED) and inpatient (IP) resources?

Respected community leaders and diverse stakeholders in East Hawai‘i have organized a community to improve health while lowering costs, influence legislative policy, and work collaboratively with the largest health plan in Hawai‘i and the local hospital to change health care delivery.

A population of patients with high cost, utilization, and disease burden was identified. A model of care was developed with 2 centers of excellence, providing care coordination across medical and social services. Community health workers (CHWs) were added to help patients navigate the system, comply with treatment plans, and request exception funding. A community forum for medical and social services has been established and an online referral system improves efficiency and accountability. Finally, a community quality assurance (QA) committee is being put into place to drive systemic improvements.

The community approach adopted in East Hawai‘i holds great promise to realize structural changes to healthcare. While not yet fully implemented, anecdotal data suggest that this program is reducing ED and IP utilization and effectively addressing social determinants of health.

Highlights

- *Healthcare transformation can be accomplished through local multi-sector collaboration and community leadership*
- *Community health workers provide high-touch support to high-cost, high-need patients*
- *Community QA Committee creates systemic improvement through case reviews*
- *Exception funding helps meet critical needs that are not covered by medical benefits or social services*
- *An online inventory and referral system support access to resources and accountability.*

List of Abbreviations

CAN = Community Action Network
CCIT = Community Care Improvement Team
CHW = community health worker
C-PCMH = Complex Patient Centered Medical Home
ED = Emergency Department
HCHN = High-cost, high-need
HMC = Hilo Medical Center
RHIC = Regional Health Improvement Collaborative
QA = Quality Assurance

Background: Bringing the Community Together

Based on current projections, within a decade the Hilo Medical Center (HMC) Emergency Department (ED) in East Hawai‘i will not have enough rooms and space to adequately treat patients. Currently, patients make 49,000 visits to the Hilo Medical Center ED annually; from 2012 to 2016, the hospital ED treated almost 133,000 patients. The ED has seen an increase of about 900 patients per year on average, rising from 24,855 patients in 2012 to 28,445 patients in 2016. This represents an annual increase of about 3.5%. If these trends continue, they could reach the current full capacity limit of 65,000 ED visits annually by 2027. Additionally, analysis shows that 29% of patients treated at HMC's ED have conditions that are nonemergency in nature and could be handled by the patient's primary care doctor. The hospital's inpatient capacity will also be overwhelmed in less than a decade.

Community First

Community First is a non-profit organization formed in 2014 in East Hawai‘i, dedicated to transforming healthcare and personal accountability for health. The organization views the unsustainable Hilo Medical Center patient visit trends as an opportunity for local action. Community First is helping to shape efforts in East Hawai‘i with 3 key tenets:

> **Only together:** There is no way to transform healthcare and achieve a sustainable system without coming together.
>
> **Make the invisible, visible:** Harmony can only come from truth, so we must make the invisible, visible. Truth is the basis of the trust needed for collaboration and transformation.
>
> **Try, and don't expect to get it right the first time:** We need to act, and we will need to make adjustments as we move forward, but we will make these adjustments collaboratively and in the best interests of the community.

These principles guide the community initiatives in East Hawai‘i as they address the adaptive challenge of transforming healthcare. The concept of adaptive challenges comes from the work of Ron Heifetz at Harvard Business School and holds that all stakeholders must resolve baggage from the past, learn new ways of communicating, discuss their fears of loss in changing, and work together to find solutions to their problems. Addressing the adaptive challenge is essential to the community approach.

The East Hawai'i community has spent years building relationships between health care stakeholders.

Regional Health Improvement Collaborative

To foster relationships and develop trust, Community First created the East Hawai'i Regional Health Improvement Collaborative (RHIC). The RHIC included the board chairs and/or chief executive officers (CEOs) from the major healthcare providers in the community including Hilo Medical Center (HMC); Bay Clinic, a federally-qualified health center (FQHC); Hawai'i Medical Service Association (HMSA), the largest health plan in the community; East Hawai'i Independent Physicians Association (IPA), the largest physician association in the region; and Hawai'i Care Choices, a palliative care and hospice organization.

Currently the major focus of the RHIC is to improve care for HCHN patients struggling with unmet economic and social needs that affect their health, such as tenuous living situations, food insecurity, inconsistent employment, and lack of social support. It is estimated that these social determinants of health account for 80% to 90% of health outcomes for a population.

Community Action Network

It was clear that working with social service providers was critical to address social determinants of health, particularly with HCHN patients, and the RHIC recommended convening a steering committee to address gaps in the social safety net and care coordination across the continuum of medical and social services. This committee, identified as the Community Action Network (CAN), currently includes 25 medical and social service providers. Leadership by well-respected community leaders was critical to get participation from all members. Navvis, a population health company, facilitates monthly meetings and organizes task forces. Trust, respect, inclusion, participation, alignment, and communication are essential components of how the CAN operates as both a network of resources and a steering committee.

Figure 1 shows the structure of relationships between Community First, the RHIC, and the CAN.

Two Centers of Excellence: Bay Clinic and the Complex Patient Centered Medical Home

CAN developed a model of care for HCHN patients which was endorsed by Community First and the RHIC. It was agreed that each patient should have a medical home which would be responsible for care coordination across the continuum of medical and social services. It was acknowledged that HCHN patients could benefit from a healthcare "center of excellence" where more attention and expertise could be provided to care for the complexity of their needs. Two centers of excellence were designated: Bay Clinic and the Complex Patient Centered Medical Home (C-PCMH) at HMC, located at the Hawai'i Island Family Health Center, near the HMC ED.

Bay Clinic

As an FQHC, Bay Clinic has a payment model to cover ancillary services and was organized to operate as a center of excellence with not only medical providers but also social workers and CHWs.

C-PCMH, a Partnership between HMC and HMSA

To create a center of excellence for HCHN patients outside of Bay Clinic, a partnership between Hilo Medical Center and HMSA was formed. HMSA, the largest health plan in Hawai'i with 70%of the market in East Hawaii, and HMC designed a payment model with monthly fees for care coordination and increased fees for visits to cover the enhanced delivery structure for the C-PCMH. The model incentivizes providers to use a team approach to treat HCHN patients. Identified patients are enrolled in the C-PCMH for 6 months, with a 3-month extension provided as needed. Through this type of coordinated and focused effort, HCHN patients get access to timely and relevant resources that help prevent future avoidable ED visits and/or IP admissions.[4-6]

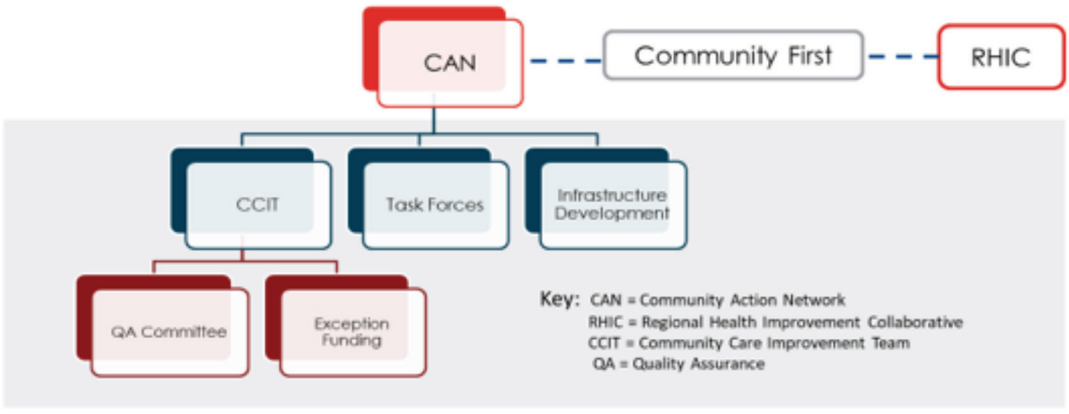

Figure 1. CAN Organization Structure

The American Academy of Family Physicians (AAFP) states that physicians must have awareness of obstacles that patients confront when following treatment plans.[7] According to a 2017 survey conducted by the AAFP, 83% of family physicians agreed that they should address their patients' social determinants of health, including factors such as housing, food, and transportation.[8] Despite this and the availability of validated screening tools, the vast majority of family physicians found this task too time consuming to conduct routinely, and most said their clinics are not properly staffed to address these non-medical needs.

The C-PCMH recognizes that social determinants of health impact the medical costs and overall health of patients, and costs can be reduced by connecting patients to community resources. The C-PCMH provides coordinated and intensive managed care for patients with complex needs who meet eligibility criteria. The aim is to care for these patients through a period of complex medical and social needs, and then return the care of those patients to their primary care physicians.

Target Patient Selection for Enrollment

To create a list of prioritized HCHN patients in East Hawai'i for possible C-PCMH enrollment, Navvis performed a detailed analysis of all HMSA QUEST members in East Hawai'i. The detailed analysis identified patients with the following criteria:

- 2+ hospital IP admissions in previous 12 months
- 3+ ED visits in previous 12 months
- 3+ chronic diseases

Additionally, other HMSA QUEST members that could be enrolled into the C-PCMH include:

- Patients with multiple unmet social determinants of health
- Medically- or socially-complex patients referred from ED
- Medically- or socially-complex patients referred by current primary care provider
- Patients that are high utilizers of the 911 Ambulance / Emergency Medical Services System

The Community Health Worker

CHWs are becoming important members of primary care teams.[9,10] A recent randomized-control trial demonstrated that ambulatory patients who worked with a CHW to receive tailored support for chronic disease control spent significantly fewer days in the hospital over a 9-month period when compared to patients who had no additional support.[11] This was due to a combination of shorter average length of stay as well as lower odds of repeat admissions. Participants who worked with a CHW were also more likely to report the highest quality of care.

The first CHW at HMC was hired in 2018 as part of the C-PCMH team, which also includes a physician, a nurse practitioner, a behavioral health provider, and a pharmacist. The CHW plays a crucial role, developing an ongoing relationship with the patient. By meeting with patients face-to-face in their homes and demonstrating they are empowered to help, CHWs are often able to establish trusted relationships with their patients.

For the C-PCMH program, the CHW utilizes a standardized comprehensive screening tool to assess social determinants of health needs, addressing 5 core domains that community services help with: housing instability, food insecurity, transportation problems, utility payments, and interpersonal safety.[12] The CHW then connects patients to available community resources to help mitigate needs. The CHW helps enrolled patients navigate the complex and often confusing maze of forms and eligibility requirements to get access to community services. In addition to their patient responsibilities, the CHW represents the C-PCMH multi-disciplinary primary care team at CAN meetings.

Exception Funding

Not all critical needs of HCHN patients are covered by available medical and social services, and some needs cannot be responded to quickly enough given required administrative procedures. Starting in the second quarter of 2019, a total of $85,000 of exception funding will be available from HMSA and a state grant, administered by the CAN. The CAN established a limit of $1000 per patient to help meet critical non-medical needs when there is an opportunity to improve health outcomes and lower medical expense. Examples that may merit exception funding include a patient needing a refrigerator to keep medication cool or a generator for medical equipment; a patient needing a ride to pick up medication from the pharmacy; or a patient needing transitional housing. Requests for exception funding should apply to domains such as housing, transportation, food, utility needs, among other social determinants – with an expectation that by meeting a specific need, a patient will avoid unnecessary medical costs.

Network of Social Services and Referral Management

The CAN identified a lack of understanding of the resources available in the community and procedures to access them. An online resource directory was needed where each organization could manage and post its own critical information, such as eligibility forms, key contact information, and services available. This online directory was created using a free social media platform for non-profit service organizations. More than 100 people from organizations who are members of the CAN currently use this platform to share information about eligibility, services and programs. During the Kilauea volcano eruption in 2018, this tool became even more helpful, as CAN allowed all eruption service programs to use and update the situation in real time.

The CAN identified transportation and behavioral health as major challenges. CAN members volunteered to be part of the Transportation and Behavioral Health Task Forces. The Transportation Task Force created a transportation process grid and a separate resource directory specifically addressing healthcare-related transportation needs. This has been utilized across several CAN-member organizations such as the Legal Aid Society and Hawai'i County Office of Aging. The Behavioral Health Task Force is working on a Behavioral Health Patient Navigation Tool to understand the organizations available to assist patients with certain conditions.

To create efficiency and accountability, a pilot version of online referral system is currently being implemented between the C-PCMH, the Big Island Substance Abuse Council (BISAC), a substance use disorder treatment provider, Hawai'i County Office of Aging, HOPE Services for the Homeless, and Hui Malama Ola Na Oiwi, the Hawaiian health system for Hawai'i Island. The referral system uses a technology platform called Coreo, provided by Navvis, and funded by HMSA. This platform will eventually connect most medical and social service providers in East Hawai'i.

Community Quality Assurance (QA) Committee

CAN members discuss cases that illustrate gaps in the system, but because these discussions can only be done on a de-identified basis, the ability to identify improvements was limited. A Community QA Committee was formed to enable the sharing of protected health information (PHI) during case reviews for the purpose of improving systemic issues. The challenge was twofold: to create a legal structure for the exchange of PHI among covered and non-covered entities as defined by HIPAA; and to protect discussions under laws regulating QA committees. To allow the exchange of PHI, an organized health care arrangement (OHCA) is being formed. An OHCA is a legal construct and arrangement between covered entities, such as health plans and providers, in which they execute a memorandum of agreement with each other and inform patients of their participation in the OHCA for the purpose of quality improvement in the notice of privacy practices given to patients. Providers who treat patients with substance use disorders must obtain individual patient consents. Non-covered social service entities sign a business associate agreement with the OHCA and inform patients of their participation in their notice of privacy practices. At the end of December 2018, 5 covered entities and 6 non-covered entities identified by the CAN have given their preliminary agreement, 5 are still reviewing, and 1 entity is unable to participate.

To address the challenge of protecting the discussions of a Community QA Committee, Community First mounted a campaign in the 2018 state legislative session to harmonize the definition of a QA committee in 2 different parts of Hawai'i law. Despite opposition from the trial lawyers, Senate Bill 2487 to harmonize the QA definitions was passed unanimously by both House and Senate and was signed by the Governor.[13] This bill protects the discussions of a QA committee composed of representatives of independent entities. The bill's passage is an illustration of the power of a community working together.

Measuring Outcomes

Measuring data and sharing it in a transparent fashion among all stakeholders is a critical next step in this effort. Plans are currently underway to review the rates of avoidable IP and ED admissions for patients of Bay Clinic, HMC, and local primary care physicians. Additionally, quarterly C-PCMH program progress reviews began in January 2019, with bi-monthly meetings of the Community QA Committee to begin in the second quarter of 2019. These foundational elements will need to be in place and operational before this effort can evolve into a sustainable financial model.

Discussion

The current medical system in East Hawai'i is health plan-centric, with medical and social service providers contracting with or requesting services from 6 different health plans on behalf of their clients. The system must be transformed into one that is community-centric, community-governed, and health plan-enabled. Health plans, which have far greater organizational capacity than local providers in East Hawai'i, must develop management and information systems which enable intelligent initiatives at the community level.

In East Hawai'i, Community First, the RHIC and the CAN have demonstrated how a community can organize itself, create accountability for better health at lower costs, influence policy legislatively, and work collaboratively with the largest health plan and the regional hospital to change payment models and delivery systems. Significant infrastructure has been put in place to support this community-led approach, and clinical outcomes and cost savings with HCHN patients in East Hawai'i will be measured over the next few years.

The next major initiative is to collaborate with additional health plans, creating a social accountable care organization (ACO).[14,15]

Practical Implications

Organizing a local community may be an effective approach to transform health and healthcare across a population. The legal and financial complexity of organizing independent medical and social service providers along with health plans is a formidable effort. In East Hawai'i, there was a foundation for collaboration due to the involvement of respected and engaged community leaders and broad involvement of medical and social service organizations. Because there is consensus and alignment around monitoring performance and focusing on improvement, co-creation and design of solutions and approaches that could not be achieved by any single stakeholder alone can begin in earnest. The foundations for an accountable and learning health community have been laid in East Hawai'i.

Conflict of Interest

None of the authors identify any conflict of interest.

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References

1. Hansel, J. "Nonemergencies put strain on hospital ER", Hawaii Tribune-Herald. November 6, 2017, available at https://www.hawaiitribune-herald.com/2017/11/06/hawaii-news/nonemergencies-put-strain-on-hospital-er/.
2. Heifetz R, Linsky M. *Leadership on the Line*. Boston: Harvard Business Review, 2002:13-15.
3. Hood CM, Gennuso KP, Swain GR, Catlin BB. Relationships between determinant factors and health outcomes. *American Journal of Preventive Medicine*. 50(2):129-135.
4. Enard KR, Ganelin DM. Reducing preventable emergency department utilization and costs by using community health workers as patient navigators. *Journal of Healthcare Management*. 2013 Nov-Dec;58(6):412-27; discussion 428.
5. Gunderson JM, et al. Community Health Workers as an Extension of Care Coordination in Primary Care. *Journal of Ambulatory Care Management*. 2018Oct;41(4): 33–340.
6. Johnson D, et al. Community Health Workers and Medicaid Managed Care in New Mexico. *Journal of Community Health*. 2012Jun;37(3):563–571.
7. American Academy of Family Physicians. Social Determinants of Health: Family Physicians' Role. https://www.aafp.org/dam/AAFP/documents/patient_care/everyone_project/sdoh-survey-results.pdf. (last accessed January 11, 2019).
8. American Academy of Family Physicians. Social Determinants of Health Policy. 2013. https://www.aafp.org/about/policies/all/social-determinants.html. (last accessed January 11, 2019).
9. US Dep. Labor Bur. Labor Stat. 2013. Standard Occupational Classification: 21–1094 Community Health Worker. http://www.bls.gov/soc/2010/soc211094.htm (last accessed November 22, 2018).
10. Perry HB, Zulliger R, Rogers MM. Community Health Workers in Low-, Middle-, and High-Income Countries. *Ann Rev Public Health*. 2014;35:399-421.
11. Kangovi S, Mitra N, Norton L, et al. Effect of Community Health Worker Support on Clinical Outcomes of Low- Income Patients Across Primary Care Facilities. JAMA Intern Med. Published on line Oct 22, 2018. doi:10.1001/jamainternmed.2018.4630.
12. Centers for Medicare and Medicaid Services "Accountable Health Communities Health-Related Social Needs Screening Tool", available at https://innovation.cms.gov/Files/worksheets/ahcm-screeningtool.pdf (last accessed January 11, 2019).
13. LegiScan. Hawaii Senate Bill 2487. 2018. https://legiscan.com/HI/bill/SB2487/2018 (last accessed January 11, 2019).
14. Maxwell J, et al. "*The First Social ACO: Lessons from Commonwealth Care Alliance*", White Paper – February 2016, published by the Robert Wood Johnson Foundation.
15. Romm I, Ajayi T. Weaving Whole-Person Health Throughout an Accountable Care 12. Framework: The Social ACO. Health Affairs Blog, January 25, 2017. https://www.healthaffairs.org/do/10.1377/hblog20170125.058419/full/ (last accessed January 11, 2019).