CASE STUDY COMPENDIUM

Advisory Board

Community Health Worker Programs: A Case Study Compendium

Six models to guide program development

PUBLISHED BY

Population Health Advisor

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Executive summary and table of contents

Care management models built to address only clinical risk fall short of fully addressing the nonclinical needs of many patients, particularly those with several social risk factors. Typical models center around a team of nurse care managers who coordinate care for patients with chronic illnesses. But as providers recognize that social needs often compound clinical acuity, it becomes clearer that traditional members of the care team aren't equipped to address them. Evidence suggests that community health workers (CHWs), which are non-clinical, non-licensed workers sourced from the community, can successfully partner with patients to fill many social gaps in care. When executed strategically, CHW programs can result in a substantial financial ROI.

Community health workers specialize in developing strong relationships with at-risk patients to address social needs and drive self-management. While all programs aim to address social needs, the focus on chronic disease self-management support ranges from minimal to central to the role. Outside of these two common goals, programs differ widely in who they target, how staff is deployed, and how the program is integrated into the health care infrastructure. This research report compares six best-in-class community health worker care team models across key components of programming, including scope of role, target population, and hiring model.

This compendium is part of a series. Request additional resources to optimize program development:

- **The Case for Implementing a Community Health Worker Program:** Download a customizable ready-to-use slide deck to make the case for investing in a CHW program
- **Implement a Community Health Worker Program Toolkit**: Use this toolkit for step-by-step guidance on how to develop the right program for your organization
- **Community Health Worker ROI Estimator:** Use this tool to quantify the return on investment of based on cost savings tied to total cost of care reductions

Advisors to our work

The Population Health Advisor team is grateful to organizations that shared their insights, analysis, and time with us. We would like to recognize the following organizations for being particularly generous with their time and expertise.

With sincere appreciation

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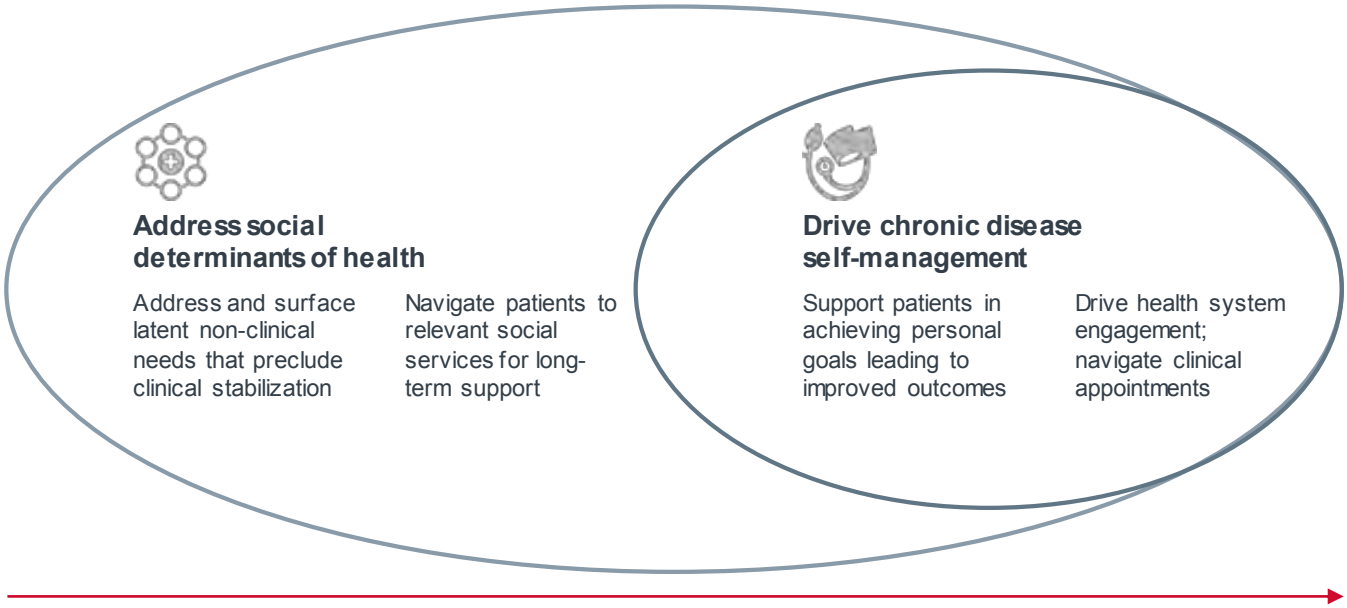
Community health workers: An introduction

What is a community health worker?

Program design varies based on primary goal of patient management

Primary goals of community health worker programs often two-fold

As defined by the CEO of City Health Works, Manmeet Kaur, a "'community health worker' is an umbrella term that means one thing: a non-clinical person hired from the community that they serve." For populations with unmet social needs, CHWs are a lower cost alternative to RN care managers to support at-risk patients. CHWs specialize in developing strong relationships with patients. All programs use CHWs to address patient's social determinants of health, and few broaden the scope the CHW role to drive chronic disease self-management. Most programs then base key performance indicators on the scope of the CHW role.



No two programs are alike, as organizations base programming on system strategy and resource availability. Program design varies across patient inclusion criteria, care team deployment, and the timeframe for patient management. However, CHW programs also share similarities beyond the common goals, including:

- **Care team integration:** Some organizations may integrate CHWs into the care team to increase care management capabilities by offloading social support. However, many organizations decide to keep CHWs independent to protect the integrity of the role and ensure they're working top-of-license.
- **Target population:** Organizations often start with a narrow target population likely to benefit most from support (e.g., high-risk Medicaid patients) to perfect operations and exhibit a positive ROI to leadership. With buy-in, program scope often grows to at-risk subpopulations (e.g., undocumented immigrants).
- **Funding strategy:** Most programs launch with grant or pilot funding. Once they demonstrate ROI, program leaders make the case for internal investment to ensure long-term sustainability.

Source: Population Health Advisor interviews and analysis.

An overview of community health worker programs

	GOAL: ADDRESS SOCIAL NEEDS	GOAL: AID SELF-MANAGEMENT	TARGET POPULATION	PANEL SIZE PER CHW	PROGRAM OUTCOMES
Kalispell Regional Medical Center *1 FTE*	✔	✖	Patients with 3+ inpatient visits over 6 months	65 patients per year	Reduced inpatient visits by 57%, observation visits by 30%, and ED visits by 31%
Mercy Health System *3 FTEs*	✔	✖	High-risk patients with high rates of acute utilization	25-30 patients per week	Social support from CHW and SW[1] reduced ED visits by 31%, hospitalizations by 32%, and avoided $170K in costs
New York-Presbyterian Hospital *49 FTEs*	✔	✔	Patients with 2+ chronic conditions, 2+ ED visits, and multiple social needs	35 active patients at once	*Adult program*: 62% of patients improved A1C, 82% didn't readmit *Pediatric program*: reduced inpatient visits 76%, ED visits by 68%
University of Pennsylvania Health System *50 FTEs*	✔	✔	Under- or uninsured patients living in high-risk service area zip codes	15-30 active patients at once	Measured 2:1 ROI through reduced utilization; improved access, and quality
University of New Mexico Health System *51 FTEs*	✔	✔	Patients of all acuities, Medicaid beneficiaries, returning citizens, undocumented immigrants, children at risk for abuse	25-30 active patients at once	Measured 4:1 ROI, 83% fewer admissions
Mount Sinai Health System *6 FTEs shared across provider organizations in Harlem*	✖	✔	*PC² program:* Patients with uncontrolled conditions[3] *CHF program:* Inpatients with uncontrolled CHF	30 active patients at once	City Health Works diabetes-specific programs led to a $600 average PMPM drop by 10 weeks and 1.6 average A1C reduction at 1 year

1) Social worker.
2) Primary care.
3) Conditions include CHF, diabetes, asthma, hypertension, and depression.

Source: Population Health Advisor interviews and analysis.

An overview of community health worker programs (cont.)

	REFERRAL STRATEGY	PROGRAM LENGTH	CARE SETTING	HIRING MODEL	PROGRAM FUNDING
Kalispell Regional Medical Center	Inpatient care teams refers patient to dyad prior to discharge	30-90 days post-discharge	Meets patients during admission, offers home visits, attend PCP appointments	Internally hired and trained; deployed in a dyad with a RN	$250K grant from Robert Wood Johnson Foundation across three sites
Mercy Health System	Centralized RN offering telephonic transition support refer highest-risk patients to triad	Six weeks post-discharge	Makes home visits, performs assessments, and connects with community resources	Internally hired and trained; deployed in a triad with a RN and a LSW	Incorporate initially into hospital operations budget, then transition to ACO budget
New York-Presbyterian Hospital	Inpatient and outpatient care teams refer patients via EMR; CBO staff outreach proactively	Six months	Meets patients during admission, patient visits occur in homes and community-based organizations	Sub-contracted from community partners, internally trained; CHWs a separate, standalone program	Incorporated majority of program funding into operational budget after successful pilots
University of Pennsylvania Health System	Web-based platform uses algorithm to identify target patients	Two weeks post-discharge, four weeks post-discharge, or six months	Meets patients during admission or in the primary care clinic; patient visits occur in the home or community	Internally hired and trained; CHWs a separate, standalone program	Pilot funds used to prove ROI, then integrated into internal budgets (population health, community benefit)
University of New Mexico Health System	Predictive modelling identifies target patients (e.g., high utilizers)	One to six months	Offers support in the community, primary care, and the ED	Internally hired and trained; CHWs a separate, standalone program	Launched pilot with partner MCO[2] funding; now integrated into permanent budget
Mount Sinai Health System	Care team reviews EMR risk reports (e.g., zip code, diagnoses) to determine outreach	Three months of active health coaching, nine months of maintenance	Meets patients in the primary care setting after care team referral or in the inpatient setting to plan for discharge	Externally hired and trained through a community partnership; CHWs a separate, standalone program	DSRIP funded contract with community partner which funds a per-patient rate for CHW services

Source: Population Health Advisor interviews and analysis.

Case study compendium

Extend care management capacity with dyad model

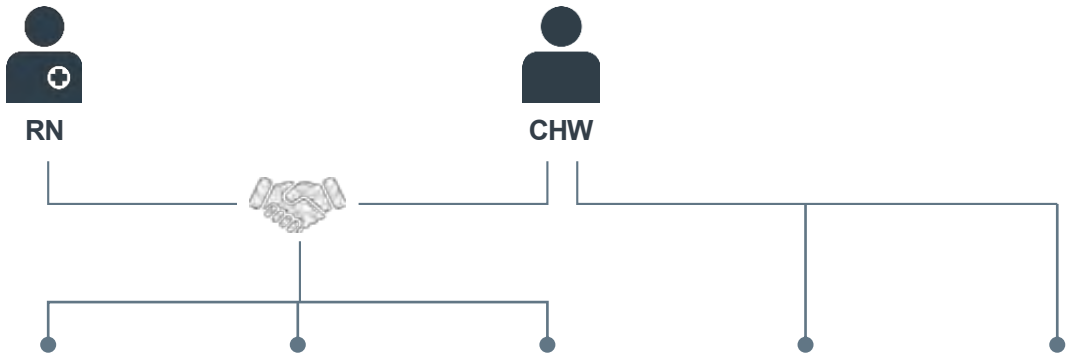
Kalispell pairs CHWs with RNs to assist with social support and home visits

CASE EXAMPLE

Kalispell Regional Medical Center
138-bed rural hospital • Kalispell, MT

Kalispell Regional Medical Center employs a CHW in a dyad with an RN navigator. The team, called the Complex Care Team, provides 30 to 90-day post-discharge support for rural, at-risk patients with clinical and psychosocial needs. The CHW increases the RN's capacity by using weekly check-ins and home visits to assess and meet patients' clinical needs. During home visits, the CHW uses an iPad for a tele-visit with the RN to limit RN travel time to remote locations. The Complex Care Team has reduced inpatient visits by 57%, observation visits by 30%, and ED visits by 31%[1].

Complex Care dyad relies on CHW to extend RN reach across rural service area



Location	**Hospital**	**Patient's home**	**PCP office**	**Telephone**	**Patient's home**
Role	• RN and CHW meet patient during admission to enroll and build rapport	• Both attend the initial home visit to perform clinical and social needs assessments • Team debriefs and creates care plans with defined next steps	• RN attends first PCP visit one-to-two weeks post-discharge • CHW may attend additional appointments for social and emotional support	• CHW touches base with patient weekly to check on progress and cement patient education	• CHW performs additional home visits as needed to address patient's non-clinical needs • CHW facilitates tele-visit with RN over an iPad to assess clinical status

58%
Reduced inpatient admissions[1]

30%
Reduced observation hospital visits[1]

31%
Reduced emergency department visits[1]

1) Data measured six months after intervention start date.

Source: Kalispell Regional Medical Center, Kalispell, MN; Population Health Advisor interviews and analysis.

Enhance wrap-around transition support with CHWs

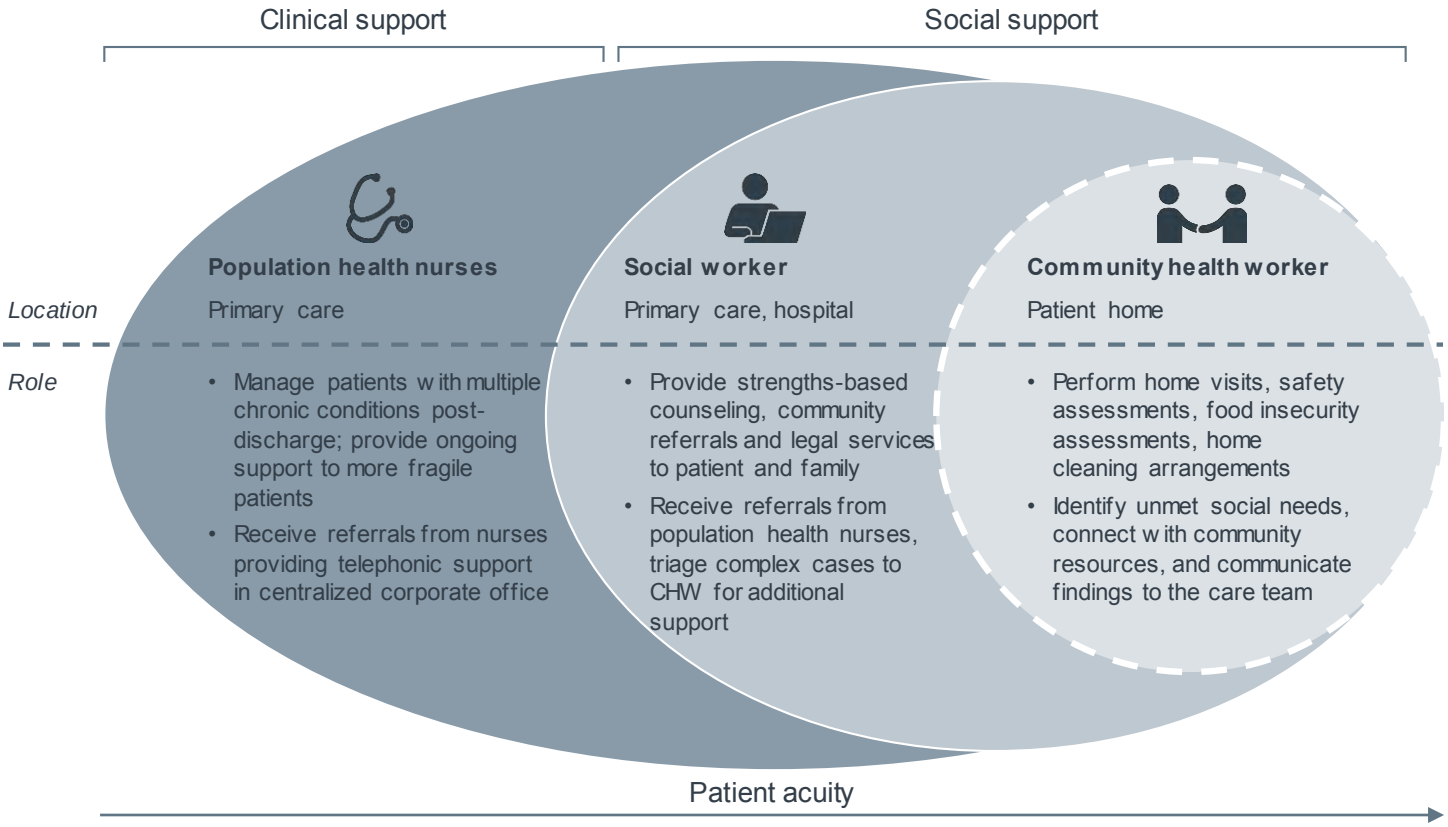
Mercy patients receive customizable social support from integrated CHW

CASE EXAMPLE

Mercy Health System
Three-hospital health system, a member of Trinity Health • Southeastern PA

Mercy Health System employs CHWs as part of a triad care transition team. The other two care team members include a population health nurse and a social worker. The most clinically complex patients receive support from the entire triad. Nurses provide clinical support for recently discharged high-risk patients, while the social worker and CHW provide personalized psychosocial support. The majority of CHW care occurs in the home. CHWs take on 25-30 patients at once for between one-to-six weeks depending on acuity. The resulting care delivered by the triad resulted in more streamlined care transitions, warm handoffs, improved quality of live, a 31% reduction in ED use, a 32% reduction in inpatient use, and $170K in estimated cost avoidance[1].

Mercy Health System's CHWs offer in-depth social support for most complex patients in transition



31%
Reduced emergency department visits[1]

32%
Reduced inpatient utilization[1]

$170K
Estimated cost avoidance[1]

1) Data measured over eight months in a longitudinal analysis.

Source: Mercy Health System, Southeastern PA; Population Health Advisor interviews and analysis.

Create community feedback loops using CBO-sourced staff

NewYork-Presbyterian cements community partnerships, streamlines CHW role

CASE EXAMPLE

NewYork-Presbyterian Hospital
Nonprofit university hospital affiliated with Columbia and Cornell • New York, NY

NewYork-Presbyterian (NYP) subcontracts staff from community-based organizations[1] (CBOs) to offer CHW services to rising-risk adult and pediatric patients[2]. CHWs are co-trained and co-managed by the hospital and CBOs, but are-primarily based in the CBOs. Subcontracted CHWs have experience working with target patients, knowledge of the social determinants of health, and the ability to easily communicate and coordinate across settings. The adult program improved A1C levels for 62% of patients and 82% did not readmit in 30 days[3]. The pediatric program decreased hospitalizations by 76% and ED visits by 68%[4].

Provider-CBO partnership deploys CHWs to support patients across settings

NewYork-Presbyterian's role

Funding

The hospital pays for CHW salaries, benefits, office space, and stipends for day-to-day activities[5]

Infrastructure

- Program leaders set CHWs up with badges under their contractor status to enable face-to-face meetings with patients at different locations across the health system
- A dedicated program director manages CHWs and supports providers in meeting patients clinical needs

Community-based organization's (CBOs) role

Staffing

14 CBOs that each meet different social needs[6] (food insecurity, domestic violence, legal services, education support) recommend and recruit community-sourced staff to work as NewYork-Presbyterian CHWs

Community relations feedback loop

CHWs provide feedback into community priorities to help NewYork-Presbyterian's CHW committee plan and modify service offerings

Community health workers' role

In the health system

- Meet patients in the inpatient setting when admitted
- Reinforce disease management tips in outpatient clinics
- Participate in weekly team huddles across settings

In the CBOs

- Identify patients proactively in community
- Connect patients to social services via warm handoff
- Support navigation to other clinical services

Impact of adult CHW program[3]

62% Patients improved A1C levels

82% Patients did not readmit in 30 days

Impact of pediatric CHW program[4]

76% Decreased hospitalizations

68% Decreased ED visits

1) NewYork Presbyterian's CHW committee performs an in-depth quantitative and qualitative data analysis to select partner CBOs that address the community's primary social needs.
2) 2+ chronic conditions and social needs.
3) Data reflect cumulative impact from January 2012 to June 2018.
4) Data reflect cumulative impact from September 2006 to June 2018.
5) For example, smart phone, tablet, and transportation.
6) Food insecurity, domestic violence, legal services, and education support.

Source: NewYork-Presbyterian Hospital, New York, NY; Population Health Advisor interviews and analysis.

Base patient management timeframe on patient acuity

University of Pennsylvania uses three evidence-based models to tailor support

CASE EXAMPLE

University of Pennsylvania Health System
Six-hospital health system • Philadelphia, PA

The University of Pennsylvania Health System (UPHS) employs CHWs across the inpatient and ambulatory care setting under an independent management structure. The evidence-based program, IMPaCT, uses an internal algorithm that includes insurance status and zip code to identify target patients. IMPaCT has three separate workflows that map to patient acuity: short-term transition support, long-term transition support, and chronic disease management support. Overall, the IMPaCT program resulted in a 2:1 ROI, with a 28% decrease in hospitalizations[1], 30% decrease in multiple readmissions[2], a 12% increase in primary care access[2], and a 13% increase in HCAHPS[3] communication scores[2].

Acuity level dictates patient enrollment in one of three standalone CHW programs

Short-term transition

Supports patients with 1-2 ED visits in the last 6 months; 2 weeks duration

Long-term transition

Supports patients with 3+ ED visits in the last 6 months; 3 months duration

Chronic disease management

Supports patients with 2+ chronic conditions in ambulatory setting; 6 months duration

Standardized identification, outreach, and support processes extend across programs

Risk algorithm informs CHW outreach

- HOMEBASE, an automated workflow management tool integrated into UPHS's EMR, identifies eligible patients in real time, across inpatient and outpatient settings
- Risk algorithm includes insurance coverage, patient ZIP code, past health care utilization, and chronic conditions

Intake assessment centers around patient goals

- CHW leads 60- to 90-minute conversation with patient during hospital stay or primary care visit
- CHW uses patient engagement tactics (e.g., motivational interviewing) to build patient rapport and uncover sensitive psychosocial needs
- CHW and patient collaboratively set care plan goals
- CHW tracks concrete steps to achieve goals in HOMEBASE

CHW engages patient in ongoing support

- CHW taps into collective knowledge of IMPaCT team to connect patient to relevant social and community services
- CHW has relationship with patient's care team and communicates clinical concerns
- CHW connects with patient in person and telephonically throughout the duration of the program to ensure their needs are met on an ongoing basis

Impact of effective community health worker care

2:1	30%	12%	13%	28%
ROI of Penn's CHW program	Decrease in multiple readmissions[2]	Increase in primary care access[2]	Increase in HCAHPS communication scores[2]	Decrease in hospitalizations[1]

1) P-value of .11. Data measured after six months of CHW support.
2) Intervention lasted a minimum of two weeks or until the patient was connected with a PCP post-discharge.
3) Hospital Consumer Assessment of Healthcare Providers and Systems.

Source: Kangovi S, et al., "Community Health Worker Support for Disadvantaged Patients with Multiple Chronic Diseases: A Randomized Clinical Trial," *American Journal of Public Health*, 107, no. 10 (2017):1660-1667; Kangovi S, et al., "Patient-Centered Community Health Worker Intervention to Improve Post-Hospital Outcomes: A Randomized Clinical Trial" *JAMA Internal Medicine*, 174, no. 4 (2014): 535-543; Kangovi S, et al., "The Use of Participatory Action Research to Design a Patient-Centered Community Health Worker Care Transitions Intervention," *Healthcare*, 2, no. 2 (2014): 136-144; University of Pennsylvania Health System, Philadelphia, PA; Population Health Advisor interviews and analysis.

Target initial programs to subpopulations under financial risk

UNM Health System achieved long term expanded funding with targeted pilot

CASE EXAMPLE

University of New Mexico Health System
Three-hospital academic health center • Albuquerque, NM

University of New Mexico Health System (UNM) deploys CHWs to establish trusting relationships with disengaged, high-risk patients attributed to a local managed care organization (MCO). After a successful pilot, UNM obtained stable, long term funding from internal stakeholders and from additional MCOs to expand programming. While UNM continues to serve the highest-risk, they've expanded support to vulnerable subpopulations (e.g., undocumented immigrants, children). UNM Health's efforts resulted in a 4:1 ROI with 83% fewer inpatient admissions[2,3].

CHWs show promising ROI with highest-risk Medicaid patients

Impetus

Local MCOs[1] needed help identifying their high-risk members, provided funding to UNM to hire, train, and deploy CHWs

Training

6 months of didactic training (e.g., health coaching, service coordination) paired with 6 months of field work

Services

Address social needs: offer interpretation services, connect with social services, communicate with cultural humility

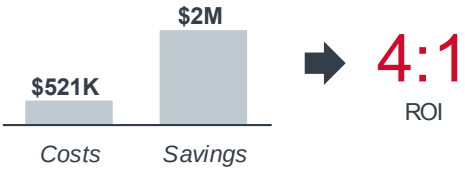
Support disease self-management: reinforce basic disease education, address health literacy, navigate to clinical care

Coordination

MCOs contact CHWs if patients miss a clinical service; CHW engages the patient to address potential access barriers and works with providers to reschedule the appointment

Results

Program costs vs. savings



Few er inpatient admissions[2,3]

Proven program success allows flexibility to focus on narrowed subgroups

	Patients exiting the justice system	Undocumented immigrants	Children at-risk for abuse	Lower-risk patients
Impetus	Other institutions (e.g., city government) were concerned about high rates of recidivism	High rates of undocumented immigrants unable or afraid to access care	High rates of child abuse in the hospital's service area	Half of all UNM patients have at least one psychosocial risk factor
Solution	Collaborated to create a center to welcome returning citizens after their release and connect them to services	Launched dedicated clinics run by CHWs to drive trust and access	Placed CHWs in EDs to screen all families and identify early warning signs	Decided to target lower acuity community members to move intervention even further upstream

1) Managed Care Organization.
2) Control group not managed by CHWs had 53% fewer inpatient admissions.
3) Data measured 12 months after the start of the six month intervention.

Source: Source: Johnson, D. et al, "Community Health Workers and Medicaid Managed Care in New Mexico," *Journal of Community Health*, June 2012; UNM Health System, Albuquerque, NM; Population Health Advisor interviews and analysis.

Dedicate CHW support to fill internal management gaps

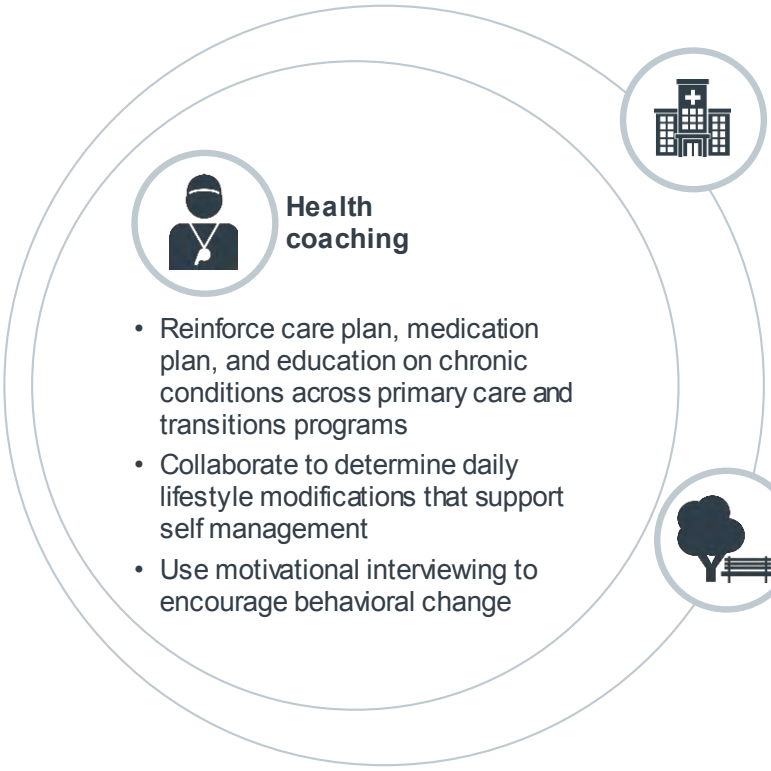
Mount Sinai outsources CHWs to save resources necessary for program launch

CASE EXAMPLE

Mount Sinai Health System
Seven-hospital academic health system • New York, NY

Mount Sinai Health System contracts with a health coaching organization, City Health Works, to operate two CHW programs: a primary care-based program targeted to patients with unmanaged chronic conditions[1] and a care transitions program for patients with CHF. Mount Sinai pays City Health Works to manage patients with externally hired, trained, and clinician-supervised CHWs. The CHWs serve primarily as a health coach to support patients with condition self-management and drive regular use of primary care. CHWs supplement existing care management teams who already cover social needs and care navigation (e.g., support behavioral change in the home). City Health Works diabetes-specific programs have lead to a $600 average PMPM drop across 10 weeks, a 1.6 average A1C reduction at one year, and high patient satisfaction, as 90% note they would refer a friend[2].

Partner-operated CHWs provide health coaching to supplement care management services



Health coaching

- Reinforce care plan, medication plan, and education on chronic conditions across primary care and transitions programs
- Collaborate to determine daily lifestyle modifications that support self management
- Use motivational interviewing to encourage behavioral change

Health system navigation

- Communicate with care management (or dedicated CHF teams) to offer updates on patient progress and alert clinicians in case of urgent medical needs
- Assist in primary care or specialty appointment scheduling
- Attend visits to help advocate for patient needs & teach patients how to prepare for medical appointments

Community resource navigation

- Identify social determinants of health patients are dealing with that interfere with care plan adherence
- Refer patients to ambulatory-based social workers to address social needs and connect to community resources

Ancillary CHW goals

Outcomes from diabetes-specific City Health Works programs[2]

$600	1.6	90%
Average PMPM drop by 10 weeks	Average A1C reduction at 1 year	Participants would recommend program to a friend

1) Conditions include CHF, diabetes, asthma, hypertension, and depression.
2) Data measured after three months of intensive coaching and nine months of maintenance.

Source: Burton R et al., "What Do Patients with Diabetes Think of Health Coaching?," The Urban Institute; Mount Sinai Health System, New York, NY; Population Health Advisor interviews and analysis.

The best practices are the ones that work for **you.**SM

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