



CHWs & THE TRIPLE AIM

Michigan Community Health Worker Alliance (MiCHWA)

INTRODUCTION

Community Health Workers* (CHWs) are an integral part of the health and human service delivery system. As frontline public health workers, CHWs strengthen the connections between vulnerable populations and healthcare and human service systems. CHWs deliver culturally competent services and interventions, demonstrate and assist at-risk or disadvantaged populations with managing chronic conditions and developing healthier lifestyles, improve maternal and child health, increase rates of preventative screenings, and improve access to and use of social services through outreach, enrollment and patient education.

OVERVIEW

CHWs can be used in a variety of settings to improve all three aspects of the Institute for Healthcare Improvement's Triple Aim - improving the patient experience, improving the health of the population and reducing the per capita cost of healthcare. Programs utilizing CHWs had many successes, including:

- » Reduced asthma symptoms and reduced urgent health resource utilization caused by asthma (**ROI: \$5.58 per dollar**)¹
- » Reduced ED visits, hospitalizations, days of limited physical activity, patient missed school days and parent missed work days related to pediatric asthma (**ROI: \$2.04 per dollar**)²
- » Decreased blood pressure, LDL cholesterol and HbA1c levels³
- » Reduced ED visits and admittance as well as reduced hospital admissions related to diabetes (**Savings of \$2,245 per patient per year**)⁴
- » Reduced depressive symptoms among postpartum women⁵
- » Increased patient awareness and knowledge of cervical cancer⁶
- » Increased primary and specialty care use while reducing urgent care and inpatient visits (**ROI: \$2.28/dollar spent**)⁷

CHWS AND THE TRIPLE AIM

The Triple Aim, designed by the Institute for Healthcare Improvement (IHI), offers a framework to describe an approach to optimizing health system performance.⁸ The three parts of the Triple Aim include:

1. Improving the patient experience
2. Improving health of population
3. Reducing the per capita cost of health care

Together, these three components provide a framework for measuring health care value. CHWs are well prepared to assist with each of the Triple Aim objectives.

IN FOCUS: IMPROVING THE PATIENT EXPERIENCE

The IHI measures patient experience in two ways:

1. Standard questions from patient surveys:
 - a. “How’s your health” questions
 - b. “Likelihood to recommend” questions
2. Sets of measures based on key dimensions of patient experience (e.g., safe, effective, timely, efficient, equitable, and patient-centered)

Although patient experience is a difficult to measure and oftentimes not reported, CHWs contribute to a more positive overall patient experience in a variety of ways. Based on the CHW roles endorsed by MiCHWA⁹, CHWs are well equipped to improve patient experience through their work in the following roles:

SYSTEM NAVIGATION

CHWs assist patients in navigating the oftentimes confusing health care system. CHWs enhance patient experience through translating and interpreting health information, promoting and coaching in health literacy, addressing basic needs like food and shelter, and coordinating referrals and follow-ups.

HOME-BASED SUPPORT

Home-based support allows patients to get care in their home or community, eliminating transportation barriers to care. CHWs assist with home-based support by engaging family members in care, performing home visits and assessments, promoting health literacy for their patients, offering supportive counseling, coaching on problem solving, implementing care action plans, and promoting treatment adherence among their patients.

CASE MANAGEMENT & CARE COORDINATION

CHWs can enhance patient experience through case management and care coordination. Tasks related to case management and care coordination include: engaging family members in health care, assessing patients individual strengths and needs, addressing basic needs like food and shelter, assisting patients with the creation of goals and action plans, and providing feedback to medical providers.

HEALTH PROMOTION & COACHING

CHWs work with patients to help them gain knowledge, skills, tools, and confidence to become active participants in their care to help them reach their self-identified health goals. Specifically, CHWs assist with translating and interpreting health information, coaching in health promotion and prevention, problem solving, modeling behavioral change, and leading support groups.

CASE EXAMPLE

The University of Pennsylvania’s Individualized Management for Patient Centered Target (IMPACT) model utilizes CHWs to assist with patient navigation in the health care system and address health barriers such as housing instability and food insecurity.¹⁰ The results from a randomized control trial of IMPACT demonstrated that patients who worked with CHWs for two weeks during their hospital admission were 52% more likely to obtain post hospital care within two weeks of hospital discharge, reported 12.6% higher-quality discharge communication, and demonstrated greater improvements in mental health. This CHW intervention emphasizes the impact CHWs can have on patient experience.



IN FOCUS: POPULATION HEALTH

The IHI measures population health in three ways:

1. Health outcomes (e.g., mortality, health and functional statuses, healthy life expectancy)
2. Disease burden (e.g., incidences and/or prevalence of major chronic conditions)
3. Behavioral and physiological factors (e.g., smoking, alcohol, physical activity, diet, blood pressure, BMI, cholesterol, and blood glucose)

CHWs are integral to positive population health outcomes. CHWs have assisted with enhancing health outcomes, decreasing disease burden, and creating positive behavioral and physiological change. Specific examples by disease include:

DISEASE, PROGRAM, LOCATION	CHW ROLE	POPULATION HEALTH OUTCOMES
Asthma ¹¹ 2012 Sinai Urban Health Institute Chicago, IL	Trained CHWs from target communities provided individualized asthma education during 3-4 home visits over 6 months; also served as liaison between families and the medical system for 70 children.	Improved asthma control. Symptom frequency was reduced to a level that was both clinically and statistically significant. Increase in asthma-related knowledge, decreased exposures to asthma triggers, improved medical management.
Cancer ⁶ 2008 Messenger for Health on Apsáalooke Reservation project Montana	CHWs provided cervical cancer education and general health education directly to women and indirectly to men 83 women on the Apsáalooke Reservation.	Results reveal cervical cancer knowledge gains, gains in participants' comfort discussing cancer issues, and gains in awareness of cervical cancer and the Messengers program.
Diabetes ¹² 2011 REACH Project Detroit, MI	CHWs provided intervention 136 African American and Latino adult participants with 11 two-hour group diabetes education classes, two personal home visits, and one personal clinic visit. CHWs also contacted the intervention participants every two weeks via phone. Control group participants were only contacted once a month to ask if they needed to update their personal information.	Participants in the intervention group had a significant decrease in their HbA1c level in comparison to women in the control group (7.8% versus 8.5%, p<.01). Participants in the intervention group also significantly improved their adherence to blood glucose testing as well as their LDL cholesterol levels. Rates of physical activity also improved significantly for both the intervention and control groups.

Bottom Line: CHWs can improve **diabetes** related outcomes in African American and Latino populations through consistent phone conversations, education classes, home visits, and clinic visits.



DISEASE, PROGRAM, LOCATION	CHW ROLE	POPULATION HEALTH OUTCOMES
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Heart Disease¹³
2011
Patient-Physician
Partnership Study
Baltimore, MD

Trained CHWs administered patient hypertension intervention based on pre-visit coaching model to 279 hypertensive patients.

Among patients with uncontrolled hypertension at baseline, non-significant reductions in systolic blood pressure were observed among patients in all intervention groups—the patient+physician intensive (−13.2 mmHg), physician intensive/patient minimal (−10.6 mmHg), and the patient intensive/physician minimal (−16.8 mmHg), compared to the patient+physician minimal group (−2.0 mmHg).

Bottom Line: Trained CHWs can assist with lowering **high blood** pressure among adults with uncontrolled hypertension.

HIV¹⁴
2010
Detroit, MI

CHWs led motivational interviewing sessions, HIV education, and helped create change plan. Also did outreach and community mobilization, health promotion and health coaching, and systems navigation.

Intervention group had more HIV counseling and testing following the field outreach than participants who only received traditional HIV education (49% vs. 20%, respectively). Individuals in intervention group were also more likely to return later to receive their test results (98% vs. 72%).

Bottom Line: CHW led motivational interviewing, **HIV** education, and change plans can help increase screening rates for HIV.

Maternal and Child Health¹⁵
2012
Michigan
Healthy Start
Michigan

CHWs conducted home visits, direct outreach and client recruitment, case management, health education, screening and referrals for maternal depression, and inter-conceptual continuity of care. CHWs also helped link participants with services.

Healthy Start program may be reducing barriers and improving outcomes. Home visits and case management by CHWs and registered nurses help to engage and educate clients, increase self-efficacy, and address non-medical life stressors.

Bottom Line: CHWs working in maternal and child health can help engage and educate patients, increase, self-efficacy, and address non-medical life stressors for new mothers.

Mental Health and Depression⁵
2012
Healthy Mothers on the Move
Detroit, MI

Spanish speaking CHWs provided a 14-week, 14-session education and home-visit intervention to 275 pregnant Latinas. During the sessions CHWs provided the Latinas with social support in addition to knowledge and skills about exercise, healthy eating, and goal setting.

Latinas in the Healthy MOMs Healthy Lifestyle Intervention experienced a significant decline in depressive symptoms from baseline to postpartum follow-up.

Bottom Line: Spanish speaking CHWs working can help reduce **depressive symptoms** among pregnant Latinas.



IN FOCUS: PER CAPITA COST

The IHI measures per capita cost in two ways:

1. Total cost per member of the population per month:
 - Total costs per member per month/number of people in population
 - Break down of cost by type of service (inpatient, outpatient, pharmacy, ancillary) per month/number of people in population
2. Hospital and emergency department utilization:
 - Total number of hospital admissions and emergency department visits per month/number of people in population (rate per 1,000)

It is well documented that integrating CHWs into care teams help to lower total costs as well as hospital and emergency department utilization. CHWs are well-equipped to assist with lowering per capita costs and reducing emergency department utilization rates.

1. EXAMPLES OF CHW IMPACT ON TOTAL COST PER MEMBER OF THE POPULATION PER MONTH

HEALTH ISSUE	OUTCOMES	COST MEASURES & SAVINGS
The Arkansas Community Connector Program • 2011 • Monroe, Lee, and Phillips Counties, AR¹⁶		
Outreach and enrollment in community-based long term care services	<ul style="list-style-type: none"> • Statistically significant negative effect on growth in Medicaid spending over 3 year period • Average growth in Medicaid spending was 23.8% lower for program participants 	<ul style="list-style-type: none"> • Cost Measures: Annual measures for use of Medicaid services and spending for inpatient and outpatient medical services, nursing home services, home and community-based services • Cost Savings: \$3.515 million estimated savings in Medicaid expenditure for 919 program participants in 3 years. \$2.619 million in net savings. ROI: \$2.92 per dollar invested in program
Denver Health Community Voices • 2006 • Denver, CO⁷		
Outreach and enrollment	<ul style="list-style-type: none"> • Increase in primary & specialty care visits • Decreased urgent care, inpatient & outpatient behavioral health visits 	<ul style="list-style-type: none"> • Cost Measures: Charge data for utilization, charges, reimbursements, and payor sources for services utilized by CHW clients. Cost-to-charge ratio of 62% applied to final ROI calculation • Cost Savings: Monthly uncompensated costs reduced by \$14,244. Program costs were \$6,299 per month. ROI: \$2.28 per dollar. \$95,941 saved annually
Sinai Pediatric Asthma Intervention-2 • 2012 • Chicago, IL¹		
Asthma management	<ul style="list-style-type: none"> • 35% reduction in asthma symptoms • Decreased asthma-related triggers • 75% reduction in urgent health resource utilization • Increased enrollment in medical management 	<ul style="list-style-type: none"> • Cost Measures: Cost savings analysis • Cost Savings: \$2,561.60 per participant. ROI: \$5.58 per dollar spent on intervention



2. EXAMPLES OF CHW IMPACT ON HOSPITAL & EMERGENCY DEPARTMENT UTILIZATION RATES:

HEALTH ISSUE	OUTCOMES	COST MEASURES & SAVINGS
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Community Outreach and Cardiovascular Health • 2013 • Baltimore, MD³

Cardiovascular health management

Nurse Practitioner/CHW managed group had significantly greater decreased changes from baseline to 1 year follow up in: blood pressure, LDL cholesterol, and HbA1c levels compared to the enhanced usual care group

- **Cost Measures:** Cost-effectiveness evaluation calculated from provider costs and savings in drug costs from improved outcomes
- **Cost Savings:** Cost-effectiveness for 1-year intervention: **\$157** for every 1% drop in systolic BP. **\$190** for every 1% drop in diastolic BP. **\$149** per 1% drop in HbA1c. **\$40** per 1% drop in LDL-C

Community Health Workers and Medicaid Managed Care in New Mexico • 2012 • New Mexico¹⁷

- ED visit diversion
- Outreach and enrollment

Decrease in utilization and payments in: ED, inpatient service, non-narcotic and narcotic prescriptions, outpatient primary care services, and outpatient specialty care services by patients

- **Cost Measures:** The difference in cost from 6-months before to 6-months after CHW intervention was calculated for: (1) ED utilization and payment, (2) inpatient utilization and payment, (3) prescription counts and payment, (4) narcotic counts and payments, (5) PCP visits and payment, (6) Specialist (non-PCP) visits and payment
- **Cost Savings:** The total cost differential post-intervention compared to pre-intervention: **\$2,044,465**

CHW Outreach Program for African American Medicaid Patients • 2003 • Baltimore, MD⁴

ED visit diversion related to diabetes management

- 38% reduction in ED visits
- 53% reduction in ED admissions
- 30% reduction in total hospital admissions

- **Cost Measures:** Medicaid reimbursement for charges incurred for both inpatient and outpatient services, excluding outpatient prescriptions
- **Cost Savings:** Average savings of **\$2,245** per patient per year, a total savings of **\$262,080** for **117** patients

Boston Children's Hospital Community Asthma Initiative • 2013 • Boston, MA²

ED visit diversion related to asthma management

Significant reductions in: ED visits, hospitalization, days of limited physical activity, patient missed school days, and parent missed work days

- **Cost Measures:** Unadjusted ROI from intervention was computed as the ratio of the present value of unadjusted cost savings and the present value of program costs among patients
- **Cost Savings:** Unadjusted ROI **\$2.04 per dollar** over the 3 years of the intervention

Healthy Homes Project • 2005 • King County, Seattle¹⁸

Asthma management

- Significant increase in caregiver quality of life
- Decrease in symptom days
- 17% decline in urgent health services use

- **Cost Measures:** The potential savings in urgent medical care costs were estimated as the product of the number of units of urgent care services multiplied by the unit cost of each service
- **Cost Savings:** Savings in urgent care cost for a 2-month period totaled **\$57-\$80 per child**



CONCLUSION

CHWs add value to any organization, as they address all three crucial aspects of the Triple Aim. CHWs are uniquely situated to address specific community needs and have demonstrated positive result in improving patient experience, improving health of populations, and reducing per capita costs of health care. CHWs are a crucial component of the health and human service system and offer new value to both patients and patient care teams.

DEFINITION

*Community Health Worker is a term that encompasses a health professional as defined by the American Public Health Association:

A Community Health Worker (CHW) is a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the CHW to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.

A CHW also builds individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy.

In Michigan, CHWs go by many titles including, but not limited to, promotore(a) de salud, peer support specialist, recovery coach, community-based doula, outreach specialist, community neighborhood navigator, family health advocate, maternal child outreach worker, peer navigator, and community advocate.

BACKGROUND: MICHWA

The Michigan Community Health Worker Alliance (MiCHWA) is a statewide coalition that unites CHWs and stakeholders from across Michigan. MiCHWA targets systems-level issues that restrict CHW programs from thriving and impacting Michigan's communities most in need. These barriers include a lack of defined educational standards, a limited understanding of the CHW role among health and human service systems and a lack of financial reimbursement for CHW contributions to patient health. MiCHWA's mission is: *To promote and sustain the integration of Community Health Workers into Michigan's health and human service systems through coordinated changes in policy and workforce development.* For more information, please visit www.michwa.org or contact info@michwa.org.

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