THE MILBANK QUARTERLY
A MULTIDISCIPLINARY JOURNAL OF POPULATION HEALTH AND HEALTH POLICY

Original Research

Scaling an Evidence-Based Community Health Worker Program With Fidelity: Results and Lessons Learned

MOLLY KNOWLES [*,†] ADITI VASAN,[‡] ZIWEI PAN,[§] JUDITH A. LONG,[*,§,‖] and SHREYA KANGOVI[*,#]

[*]*Division of General Internal Medicine, University of Pennsylvania Perelman School of MedicineUniversity of Pennsylvania;* [†]*Penn Center for Community Health Workers, University of Pennsylvania Health System;* [‡]*Division of General Pediatrics, University of Pennsylvania Perelman School of MedicineUniversity of Pennsylvania;* [§]*Leonard Davis Institute of Health EconomicsUniversity of Pennsylvania;* [‖]*Center for Health Equity Research and Promotion, Corporal Michael J. Crescenz Department of Veterans Affairs Medical Center;* [#]*IMPaCT Care*

Policy Points:

- Effectively implemented community health worker (CHW) programs improve patient health outcomes and quality of care, reduce health care costs, and are a key strategy for addressing social and structural drivers of health.
- As policymakers consider funding mechanisms for CHW programs, it is crucial to tie funding to evidence-based best practices while also allowing for innovation and context-specific adaptations.

Context: Community health worker (CHW) programs represent a key strategy for addressing social and structural drivers of health and have the potential to improve patient health outcomes and enhance quality of care while reducing health care costs. However, challenges such as high staff turnover, lack of program infrastructure, and inadequate CHW support and supervision can hinder implementation and sustainment of effective CHW programs. Furthermore, few CHW programs have been successfully scaled across multiple organizations and communities. Individualized Management for Person-Centered Targets (IMPaCT) is an evidence-based CHW model designed to address these challenges by standardizing processes for CHW hiring, training, support, and supervision while still allowing for context-specific

The Milbank Quarterly, Vol. 00, No. 0, 2025 (pp. 1-15)

adaptation and tailoring. In this dissemination and implementation project, we evaluated implementation of IMPaCT across five geographically and structurally distinct sites serving diverse and varied patient populations.

Methods: Model fidelity was assessed across seven best practice domains via structured virtual observations with CHWs, supervisors, and program directors at each implementation site. Acute care use was evaluated using difference-in-differences regression modeling for patients enrolled in IMPaCT compared with a propensity score-matched control group. All implementation sites examined total hospital days per patient, and several sites chose to incorporate additional measures of acute care use such as the number of hospitalizations and emergency department visits.

Findings: We found that core program components were implemented consistently across sites, and three of five sites were able to both sustain implementation over a three-year period and demonstrate significant reductions in acute care use, consistent with previous randomized controlled trials of this program.

Conclusions: Health systems may be able to address social drivers of health and improve population health for patients who are low-income and patients of color by implementing evidence-based CHW programs with fidelity.

Keywords: community health workers, social drivers of health, implementation science.

Community health workers (CHWs) are frontline public health workers who are trusted members of the communities they serve.[1] CHWs provide a critical link between marginalized communities and health care and public health services, improving access to care, cultural and linguistic competence of care, and health outcomes.[2] CHWs can perform various functions and roles, including care coordination and system navigation support, coaching and social support, advocacy, and individual and community capacity building.[3]

Evidence shows that CHW programs can improve population health,[4–7] enhance patients' experience of care,[4,8,9] reduce health care costs,[10–15] and promote health equity.[16–18] However, many CHW programs face challenges that hinder their long-term sustainability and effectiveness. Implementation science studies[19–21] have identified five key challenges to implementing and sustaining effective CHW programs: high staff turnover, lack of standardized program infrastructure, fragmented and disease-specific approaches to services provided by CHWs, lack of effective clinical integration, and insufficient evaluation. Few evidence-based CHW models have been scaled effectively across settings and patient populations, and fewer have been assessed for fidelity and effectiveness after being scaled.

The Individualized Management for Person-Centered Targets (IMPaCT) model is a standardized theory- and evidence-based CHW intervention. In three prior randomized controlled trials conducted in Philadelphia, IMPaCT was shown to improve health outcomes, increase quality of care, and reduce hospitalizations, while

demonstrating a $2.47 to one return on investment.[4,8–10] The IMPaCT model has since been implemented by approximately 70 organizations across 20 states including health systems, public health departments, and community-based organizations. However, implementation fidelity and effectiveness have not been assessed across this wider network. In this project, we aimed to evaluate the implementation of IMPaCT at five diverse health care institutions assessing (1) implementation outcomes including intervention fidelity, sustainment, and expansion, and (2) effects on acute care use.

Study Data and Methods

Intervention

The IMPaCT model was designed to address known implementation challenges through theory-based hiring strategies, standardized program infrastructure including detailed supervision and safety protocols, clinical integration strategies, collaborative organizational change management tools, performance assessment, and adaptability across diseases, settings, and populations.[22,23] To implement the intervention, CHWs use a semistructured interview guide to understand patients' life histories, priorities, and factors affecting their health and collaborate with patients to create individualized goals and action plans. CHWs subsequently provide patients with personalized support focused on executing those action plans via weekly telephone and/or in-person contacts and monthly home visits.

Implementation

Implementation sites included one large urban public hospital system, two large integrated health systems, one system of federally qualified health centers (FQHCs), and one integrated payer-provider system (Table 1). Although all IMPaCT sites predominantly serve people who were low-income, priority patient populations across these five sites differed by race, ethnicity, urbanicity, and primary language. Each site was encouraged to adapt the intervention to serve a priority population selected based on their health systems' needs. For example, sites A and B used health care use patterns to identify their focus population, prioritizing patients with multiple emergency department (ED) visits within their health system. Site C identified patients based on a risk algorithm, and sites D and E identified eligible patients based on their chronic health conditions.

The IMPaCT implementation bundle included the following elements: constituent-engaged planning and adaptation, guidance on CHW recruitment and hiring, training for CHWs and their supervisors, workflow manuals and tools for CHWs and supervisors, ongoing technical assistance, fidelity monitoring and feedback, and continuing education.

Table 1. Implementation Site Information

Site	Region, Institution Type	Launch	Intervention Duration (Mo)	Initial Team Size	Priority Population/Intervention Eligibility Criteria
A	Northeast, public hospital system	August 2019	3	6 CHWs, 1 supervisor, 1 director	Patients with multiple ED/inpatient visits who were admitted to 1 health system hospital.
B	South, integrated health system	November 2019	3	4 CHWs, 1 supervisor/director	Patients who were publicly insured with ≥2 ED visits at a single site within the health system.
C	West, integrated payer-provider network	December 2019	3	9 CHWs, 1 supervisor, 1 director	Patients seen at 2 primary care practices within their integrated health system and identified through a risk algorithm; Black, Hispanic/Latine, and American Indian patients prioritized.
D	Northeast, integrated health system	July 2020	6	7 CHWs, 3 supervisors, 1 director	Patients with chronic health conditions and/or high-risk pregnancy seen at primary care sites or in the ED.
E	West, FQHCs	March 2020	6	9 CHWs, 1 supervisor, 1 director	Patients with poorly controlled diabetes and other chronic conditions who spoke Spanish as a primary language.

CHWs, community health workers; ED, emergency department; FQHCs, federally qualified health centers.

In the planning phase, the IMPaCT implementation team, including the chief operating officer, assistant director of training and development, and experienced IMPaCT CHWs, met with constituents from each site—including health system leaders and any current CHWs and supervisors—to develop a strategic plan for an optimized CHW program, including identifying desired outcomes, assessing feasibility, and supporting readiness planning. The team then adapted intervention materials based on local needs and preferences including intervention duration, patient population, setting (inpatient/ED/outpatient), and modality (e.g., telephonic/remote, in-person, or hybrid). Core components, such as protocols for patient goal setting and clinical integration, were preserved across sites, while site-specific tailoring promoted uptake and efficacy in new settings.

In the preimplementation phase, the IMPaCT team supported sites in deploying community-based recruitment strategies to hire CHWs. The two most important qualities for a CHW—shared life experience with the individuals served and being a "natural helper" —often cannot be communicated via a resume, and many organizations struggle with hiring and retaining CHWs because they do not intentionally assess or recruit for these qualities. The IMPaCT team worked with sites to identify strong candidates, including collaboration with human resources, job description templates, recommendations for advertisements to reach nontraditional candidates, and structured guides on conducting interviews, including scenario-based questions and efficient assessments of interpersonal skills. All CHWs hired during this study were full-time employees.

Once hired, CHWs completed a two-week IMPaCT training with a mix of discussion, didactic presentation, and scenario-based role-play practice. Following training, CHW trainees completed an assessment with a "standardized patient," a professional actor trained to play the part of a client struggling with unmet social and behavioral needs. Each site had multiple CHW supervisors, typically with masters-level social work training, and one program director. CHW supervisors and program directors received training in providing appropriate oversight and structured ongoing performance assessment. All CHWs, supervisors, and directors received standardized practice manuals tailored to each site.

Program launch was staggered across sites, beginning in August of 2019 with site A and finishing with site D in July of 2020 (see Table 1). The implementation team provided ongoing technical assistance postlaunch, including regular meetings in which they analyzed performance reports, suggested program refinements, and made recommendations to address performance issues. The implementation team also convened quarterly cross-site continuing education sessions for CHWs and program leadership that reinforced core competencies and supported skill building in emerging topics in patient care and public health. These sessions also allowed CHWs and program leaders across multiple sites to discuss common challenges and brainstorm solutions collaboratively.

Each site adapted the intervention to serve their priority populations (e.g., patients with diabetes, patients with frequent ED use) and clinical settings (e.g., primary care practices, EDs). Since this dissemination and implementation study began in 2019, several sites implemented the IMPaCT intervention during the COVID-19 pandemic, which required additional context-specific model adaptations. The implementation team conducted regular meetings with all partner sites in the first months of the pandemic to understand their shifting needs and priorities and subsequently developed adapted protocols and trainings for virtual operations, including workflows for CHWs to conduct COVID-19 prevention messaging and contact tracing. The team also engaged in a rapid-cycle redesign to help partners make site-specific adaptations while retaining core components of the IMPaCT model. For instance, one site followed standard IMPaCT workflows for individual work with patients but also began collective organizing efforts (e.g., gathering safety supplies for a nearby food bank). The IMPaCT implementation team advised another site, which faced challenges with remote patient outreach, on using text messaging to connect patients with CHW support.

Evaluation

Fidelity, Sustainment, and Expansion. We developed a systematic process for measuring CHW intervention fidelity with input from experts in implementation science. At 12 months post-program launch, the IMPaCT implementation team conducted virtual observations of and interviews with CHWs, supervisors, and directors at each site. Because COVID-19 related restrictions hindered our ability to conduct direct observations on-site, we modified our fidelity assessment to be virtual. Observers scored interviews and observations in each of seven best practice domains corresponding to IMPaCT core components: patient-centered CHW workflows, hiring, supervision, safety, clinical integration, organizational change management, and performance management. For example, to assess patient-centered CHW workflows, the observer asked CHWs to describe their most recent patient enrollment using their encounter documentation as a guide. Assessment prompts included how CHWs used the semistructured patient assessment, patient-centered goals, and action steps. To assess the supervision domain, observers sat in on meetings between supervisors and CHWs and reviewed supervisors' use, interpretation, and communication of results from CHW performance reports that included metrics such as engagement rates and proportion of patient-centered goals resolved. Each best practice domain was scored on a seven-point scale (0-6). Individual observation scores were averaged to generate a program-level score for each domain, and domain scores were averaged to create a global fidelity score for each implementation site. We also assessed sustainment, defined as whether sites were able to continue implementation of the IMPaCT CHW

model throughout the study period (2019-2022), and expansion, defined as whether sites expanded use of the model to new geographic and/or clinical areas.

Health Care Use. To evaluate the effectiveness of the IMPaCT intervention, we examined acute care use for patients who received IMPaCT as compared with eligible patients who did not enroll, using difference-in-differences regression modeling to control for secular trends in use during our study period. Patients were identified based on predetermined eligibility criteria via manual chart review or automated reports of electronic health record data. Criteria for each site are identified in Table 1. Health care use data were abstracted from electronic health records at each implementation site. Sites assessed use over a six- or nine-month period pre and post enrollment for intervention patients and pre- and post-eligibility determination for control patients (Table 3). Three sites (A, B, D) used a propensity score-matched cohort design, and one site (C) used a randomized prospective design with continuous recruitment. Site E discontinued implementation during year one and therefore was unable to share health care use data with the study team. Among sites using the propensity score-matched cohort design, matching variables included age, gender, race, ethnicity, primary language, zip code poverty rate, Elixhauser comorbidity index, baseline number of hospitalizations, and baseline total hospital days, differing slightly across sites. In site C's prospective randomized design, patients who met eligibility criteria and indicated interest were randomly assigned to either receive the CHW intervention immediately or receive usual care and then be offered the intervention with a 12-month delay, using an allocation sequence in a two to one ratio. Patients assigned to the delayed intervention served as the control group for this site's health care use analysis. All sites examined total hospital days per patient, and several sites chose to incorporate additional measures of acute care use, such as the number of hospitalizations and ED visits. The University of Pennsylvania Institutional Review Board reviewed this study and determined that it was exempt from review under the revised common rule.

Study Results

Fidelity, Sustainment, and Expansion

Four of the five sites (A-D) achieved global fidelity scores greater than 4.0 (Table 2). Sites had the highest fidelity scores for patient-centered workflows with CHWs consistently implementing concepts from training. The four sites with global fidelity scores above 4.0 all sustained implementation beyond year one and expanded to new clinical and geographic areas. Site E health system leadership discontinued program funding during year one, and this site was therefore unable to sustain implementation. Site D sustained and expanded implementation through year three, at which point they experienced leadership changes and discontinued program implementation. The remaining three sites (A, B, C) sustained implementation at year three.

Table 2. Program Fidelity, Expansion, and Sustainment

	A. Public Hospital, Northeast	B. Integrated Health System, South	C. Payer-Provider, West	D. Integrated Health System, Northeast	E. FQHC, West
Fidelity observations	6 CHWs, 1 manager, 1 director	4 CHWs, 1 manager/director	8 CHWs, 2 managers, 1 director	10 CHWs, 2 managers, 2 directors	6 CHWs, 1 manager, 1 director
Global	4.1	4.4	4.6	4.3	3.7
Patient-centered CHW workflows	5.1	5.6	4.4	4.2	4.5
Hiring	4.3	3.0	5.0	4.9	N/A
Supervision	3.0	5.0	5.0	3.5	4.0
Safety	4.1	4.2	4.9	3.6	3.2
Clinical integration	4.2	4.4	4.9	5.3	3.3
Organizational change management	4.2	4.4	3.4	5.3	3.3
Performance management	4.8	4.3	4.0	4.1	3.4
Expansion areas	A substantially modified version of the intervention was implemented in adult primary care settings across the system	Patients who were uninsured, pregnant patients at 3 clinics and multiple hospitals	A third primary care practice and hospitalized patients in general medicine departments at 2 hospitals	Additional CHWs at original sites, new initiatives in school-based health and behavioral health	No expansion
Implementation status	Ongoing	Ongoing	Ongoing	Discontinued after Y3	Discontinued after Y1

CHW, community health worker; FQHC, federally qualified health center; Y, year.

Health Care Use

Baseline characteristics of intervention participants and matched or randomized control patients are included as a Supplement. For sites using propensity score matching, intervention and control patients were similar with respect to most baseline characteristics. At site C, which used prospective randomization, the patients assigned to immediately receive IMPaCT were younger, less likely to speak English as their primary language, more likely to be non-White, and had higher baseline rates of ED use.

Difference-in-differences estimates for the relative change in total hospital days, hospital admissions, and ED visits are presented in Table 3. Three sites demonstrated statistically significant reductions in acute care use. At site A, intervention patients had a significant decrease in ED use (−0.35 visits, 95% CI −0.67 to −0.03, $P = .034$) in the six months following enrollment in the IMPaCT intervention with no significant change in total hospital days (−0.96 days, 95% CI −2.71 to 0.79, $P = .282$) or hospitalizations (−0.13 admissions, 95% CI −0.30 to 0.05, $P = .150$).

At site B, intervention patients had significantly fewer hospitalizations (−0.33 admissions, 95% CI −0.59 to −0.07, $P = .012$) in the nine months following enrollment with no significant change in total hospital days (−1.35 days, 95% CI −3.08 to 0.38, $P = .126$).

At site C, intervention patients had a significant reduction in total hospital days (−1.03 days, 95% CI −1.92 to −0.13, $P = .024$) in the six months following enrollment with no significant change in ED use (−0.09 visits, 95% CI −0.40 to 0.20, $P = .587$).

At site D, intervention patients did not have statistically significant changes in either total hospital days (1.31 days, 95% CI −0.37 to 2.99, $P = .127$) or number of hospital admissions (0.111 admissions, 95% CI −0.07 to 0.29, $P = 0.230$) in the nine months following enrollment.

Discussion

We evaluated dissemination and implementation of the IMPaCT CHW model across five geographically and structurally distinct health system partners serving diverse and varied patient populations. We found that it was feasible to implement a standardized CHW program that both retained fidelity to the original model and demonstrated effectiveness in reducing acute care use across sites that differed substantially by region, care setting (ED, primary care, inpatient), and population served.

Our results provide a model for how health systems and organizations can evaluate the implementation and effectiveness of CHW programs as they are implemented in a growing number of health care settings. By conducting direct observations to evaluate program fidelity, we were able to assess whether each site was able to preserve

Table 3. Acute Care Use

Site	Sample Size (Patients)	Follow-Up Period (Mo)	Total Hospital Stay (D)	Hospitalizations (Admissions)	ED Use (Visits)
A	434 (217 intervention, 217 control)	6	−0.96 (95% CI, −2.71 to 0.79, P = .282)	−0.13 (95% CI, −0.30 to 0.05, P = .150)	−0.35 (95% CI, −0.67 to −0.03, P = .034)*
B	834 (417 intervention, 417 control)	9	−1.35 (95% CI, −3.08 to 0.38, P = .126)	−0.33 (95% CI, −0.59 to −0.07, P = .012)*	N/A
C	1,230 (820 intervention, 410 control)	6	−1.03 (95% CI, −1.92 to −0.13, P = .024)*	N/A	−0.09 (95% CI, −0.40 to 0.20, P = .587)
D	1,512 (378 intervention, 1,134 control)	9	1.31 (95% CI, −0.37 to 2.99, P = .127)	0.111 (95% CI, −0.07 to 0.29, P = .230)	N/A

ED, emergency department; N/A, not applicable.
*$P \leq .05$
All results are per patient over the included time period as measured in difference-in-differences regression models.

the patient-centered CHW workflows and approaches to hiring, supervision, safety, clinical integration, and organizational change management that are integral to the IMPaCT intervention. By evaluating expansion and continued implementation, we were able to assess whether and how health systems were able to maintain their commitment to this CHW intervention. Lastly, by conducting a rigorous evaluation examining the impact of the intervention on acute care use, we were able to demonstrate significant reductions in acute care use among intervention patients at three of our five sites. These findings are in line with our previous studies, showing that the IMPaCT intervention led to significant reductions in acute care use. Three sites both demonstrated high initial fidelity and maintained engagement with IMPaCT beyond year three. All three also saw significant reductions in acute care use, which likely helped build the business case for program sustainment.

Our results were especially notable given that program implementation at two of these three sites spanned the first year of COVID-19 pandemic, a time of acute challenges and financial difficulties both for communities and health systems nationwide. Reductions in acute care use were observed across sites with differing modalities for delivery of CHW services, including fully in-person, fully remote, and hybrid CHW support. We believe these sites were able to achieve implementation success through (1) initial fidelity to evidence-based practices for CHW hiring, training, supervision, and support, and (2) continued engagement with the intervention, including dynamically adapting and innovating specific services delivered by CHWs based on shifting institutional and patient needs.

Two major challenges to program implementation in this study were shifting institutional priorities and, relatedly, difficulty ensuring sustainable funding for the CHW workforce delivering the intervention. Changes in leadership and institutional priorities affected stability of the CHW programs at two of our partner sites. All five implementation sites faced unexpected uncertainty during the first year of the pandemic, which coincided with intervention implementation. Although some sites were able to effectively pivot their CHW program to address emerging needs in the context of the pandemic, other sites found this more challenging. In particular, as an FQHC, site E may have had fewer financial reserves as compared with other larger health systems, which may have made it more challenging for them to sustain their CHW program. Lack of sustainable funding continues to be a challenge for CHW programs across the country, and lapses in funding can result in both interruption of services for patients and lack of job stability for CHWs. Our findings highlight the need for sustainable approaches to funding services provided by CHWs, for example, through Medicare[24] and Medicaid[25] reimbursement, to allow organizations to retain and support these important members of the public health workforce and ensure that effective CHW interventions can reach all patients in need.

Limitations

This study had several limitations. Given the small number of observations conducted to evaluate fidelity at each site, we were unable to determine whether differences in fidelity across sites were statistically significant. In our health care use analysis, despite our use of propensity score matching to identify appropriate comparison patients at sites A, B, and D, and our difference-in-differences regression modeling to minimize the effect of secular trends in health care use during our study period, it is possible that our results were affected by unmeasured differences between intervention and control patients or by differing preexisting trends in health care use across intervention and control group patients. At site A, baseline ED use among control group patients was lower, which may have biased estimates of ED use reduction in the direction of a larger estimate of effect. Similarly, at site C, lower baseline levels of health care use among control patients may have biased results in the direction of a larger estimate of effect; however, a sensitivity analysis that adjusted for baseline use and other characteristics did not affect the directionality or significance of results. The follow-up period, in which we assessed fidelity and health care use, was also relatively short and varied across sites. Future implementation studies should consider assessing use and fidelity over longer and more consistent periods, including multiple assessments to determine whether fidelity and effectiveness are maintained over time. Incorporating program cost information into future implementation studies will also allow for assessments of cost effectiveness, building on a prior study indicating a $2.47 return for every dollar invested in this CHW model.[26]

Conclusion

We found that core components of the IMPaCT CHW intervention were implemented consistently across sites, and three of five sites were able to sustain implementation over a three-year period and demonstrate significant reductions in acute care use. Success was characterized by implementation fidelity and responding dynamically to shifting health system needs and priorities. Health systems may be able to address social drivers of health and improve population health for patients who have low income and patients of color by implementing evidence-based CHW programs with fidelity.

References

1. Support for community health workers to increase health access and to reduce health inequities. American Public Health Association. November 10, 2009. Accessed September 2, 2022. apha.org/policies-and-advocacy/

public-health-policy-statements/policy-database/2014/07/09/14/19/support-for-community-health-workers-to-increase-health-access-and-to-reduce-health-inequities

2. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public Health Rep*. 2014;129 Suppl 2(Suppl 2):19-31.
3. Rosenthal EL, Fox DJ, St. John JA, et al. The Community Health Worker Core Consensus (C3) project story: confirming the core roles and skills of community health workers. In: St. John JA, Mayfield-Johnson SL, Hernández-Gordon WD, eds. *Promoting the Health of the Community: Community Health Workers Describing Their Roles, Competencies, and Practice*. Springer Cham; 2021:11-35.
4. Kangovi S, Mitra N, Grande D, et al. Community health worker support for disadvantaged patients with multiple chronic diseases: A randomized clinical trial. *Am J Public Health*. 2017;107(10):1660-1667.
5. Kim K, Choi JS, Choi E, et al. Effects of community-based health worker interventions to improve chronic disease management and care among vulnerable populations: a systematic review. *Am J Public Health*. 2016;106(4):e3-e28.
6. Heart disease and stroke prevention: interventions engaging community health workers. The Community Preventive Services Task Force (CPSTF). Updated December 22, 2021. Accessed September 2, 2022. thecommunityguide.org/findings/heart-disease-stroke-prevention-interventions-engaging-community-health-workers
7. Diabetes management: interventions engaging community health workers. The Community Preventive Services Task Force (CPSTF). Updated December 22, 2021. Accessed September 2, 2022. thecommunityguide.org/findings/diabetes-management-interventions-engaging-community-health-workers
8. Kangovi S, Mitra N, Grande D, et al. Patient-centered community health worker intervention to improve posthospital outcomes: a randomized clinical trial. *JAMA Intern Med*. 2014;174(4):535-543.
9. 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: a randomized clinical trial. *JAMA Intern Med*. 2018;178(12):1635-1643.
10. Kangovi S, Mitra N, Grande D, Long JA, Asch DA. Evidence-based community health worker program addresses unmet social needs and generates positive return on investment. *Health Aff (Millwood)*. 2020;39(2):207-213.
11. Bhaumik U, Norris K, Charron G, et al. A cost analysis for a community-based case management intervention program for pediatric asthma. *J Asthma*. 2013;50(3):310-317.
12. Brown HS III, Wilson KJ, Pagán JA, et al. Cost-effectiveness analysis of a community health worker intervention for low-income Hispanic adults with diabetes. *Prev Chronic Dis*. 2012;9:E140.
13. Campbell JD, Brooks M, Hosokawa P, Robinson J, Song L, Krieger J. Community health worker home visits for Medicaid-enrolled children with asthma: effects on asthma outcomes and costs. *Am J Public Health*. 2015;105(11):2366-2372.

14. Felix HC, Mays GP, Stewart MK, Cottoms N, Olson M. The care span: Medicaid savings resulted when community health workers matched those with needs to home and community care. *Health Aff (Millwood)*. 2011;30(7):1366-1374.
15. Krieger JW, Takaro TK, Song L, Weaver M. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. *Am J Public Health*. 2005;95(4):652-659.
16. Institute of Medicine (US) Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, Smedley BD, Stith AY, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. National Academies Press (US); 2003.
17. Sabo S, Ingram M, Reinschmidt KM, et al. Predictors and a framework for fostering community advocacy as a community health worker core function to eliminate health disparities. *Am J Public Health*. 2013;103(7):e67-e73.
18. Pérez LM, Martinez J. Community health workers: social justice and policy advocates for community health and well-being. *Am J Public Health*. 2008;98(1):11-14.
19. Kangovi S, Grande D, Trinh-Shevrin C. From rhetoric to reality—community health workers in post-reform U.S. health care. *N Engl J Med*. 2015;372(24):2277-2279.
20. Berman PA, Gwatkin DR, Burger SE. Community-based health workers: head start or false start towards health for all? *Soc Sci Med*. 1987;25(5):443-459.
21. Perry H, Zulliger R. How effective are community health workers? An overview of current evidence with recommendations for strengthening community health worker programs to accelerate progress in achieving the health-related millennium development goals. Baltimore, Johns Hopkins Bloomberg School of Public Health. September 2012. Accessed September 2, 2022. chwcentral.org/wp-content/uploads/2013/07/How-effective-are-community-health-workers-Johns-Hopkins-University_0.pdf
22. Kangovi S, Grande D, Carter T, et al. The use of participatory action research to design a patient-centered community health worker care transitions intervention. *Healthc (Amst)*. 2014;2(2):136-144.
23. Kangovi S, Carter T, Charles D, et al. Toward a scalable, patient-centered community health worker model: adapting the IMPaCT intervention for use in the outpatient setting. *Popul Health Manag*. 2016;19(6):380-388.
24. Centers for Medicare & Medicaid Services. Medicare and Medicaid programs; CY 2024 payment policies under the physician fee schedule and other changes to part B payment and coverage policies; Medicare Shared Savings Program requirements; Medicare Advantage; Medicare and Medicaid provider and supplier enrollment policies; and basic health program. *Fed Regist*. November 16, 2023. Accessed January 2, 2024. federalregister.gov/d/2023-24184
25. Gyurina C, Victoriano L. Environmental scan on community health workers: a 50-state scan of Medicaid reimbursement approaches for the CHW workforce. UMass Chan Medical School. January 2024. Accessed

September 13, 2024. cthealth.org/publication/50-state-scan-of-medicaid-payment-for-community-health-workers/

26. Kangovi S, Mitra N, Grande D, Long JA, Asch DA. Evidence-based community health worker program addresses unmet social needs and generates positive return on investment. *Health Aff (Millwood)*. 2020;39(2):207-213.

Funding/Support: This study was funded through Dissemination and Implementation Award DI-2018C2-13000 from the Patient-Centered Outcomes Research Institute. The statements in this publication are solely the responsibility of the authors and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute, its board of governors, or its methodology committee.

Acknowledgments: The authors wish to thank Talia Daglieri for her support with data collection and her valuable feedback on an earlier version of this manuscript, Nandita Mitra for her guidance on analytic methods, Chang Xu and Erkuan Wang for their support with early phases of the analysis, and program leaders and evaluators at each implementation site for their support in collecting and analyzing health care use data.

Conflict of Interest Disclosures: Dr. Kangovi is the chief executive officer of IMPaCT Care. The other authors have no conflicts of interest to disclose.

Address correspondence to: Molly Knowles, University of Pennsylvania Perelman School of Medicine, University of Pennsylvania, Blockley Hall 1236, 423 Guardian Dr, Philadelphia, PA 19104 (email: molly.knowles@pennmedicine.upenn.edu).

Supplementary Material

Additional supporting information may be found in the online version of this article at http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1468-0009:

Table S1A. Site A: Baseline Demographic Characteristics of Intervention Patients and Propensity-Score Matched Control Patients
Table S1B. Site B: Baseline Demographic Characteristics of Intervention Patients and Propensity-Score Matched Control Patients
Table S1C. Site C: Baseline Demographic Characteristics of Intervention Patients and Patients Randomized to Usual Care
Table S1C. Site C: Baseline Demographic Characteristics of Intervention Patients and Patients Randomized to Usual Care