



8-2017

Community Health Worker Support For Disadvantaged Patients With Multiple Chronic Diseases: A Randomized Clinical Trial

Shreya Kangovi
University of Pennsylvania

Nandita Mitra
University of Pennsylvania

David Grande
University of Pennsylvania

Hairong Huo
University of Pennsylvania

Robyn A. Smith
University of Pennsylvania

See next page for additional authors

Follow this and additional works at: http://repository.upenn.edu/ldi_researchbriefs

 Part of the [Community Health Commons](#), [Health and Medical Administration Commons](#), [Health Economics Commons](#), [Health Policy Commons](#), and the [Health Services Research Commons](#)

Kangovi, Shreya; Mitra, Nandita; Grande, David; Huo, Hairong; Smith, Robyn A.; and Long, Judith A.. Community Health Worker Support For Disadvantaged Patients With Multiple Chronic Diseases: A Randomized Clinical Trial. LDI Research Briefs. 2017; No. 29.

<https://ldi.upenn.edu/brief/community-health-worker-support-disadvantaged-patients-multiple-chronic-diseases-randomized>

LDI Research Briefs are produced by LDI's policy team. For more information please contact Janet Weiner at weinerja@med.upenn.edu.

This paper is posted at ScholarlyCommons. http://repository.upenn.edu/ldi_researchbriefs/29
For more information, please contact repository@pobox.upenn.edu.

Community Health Worker Support For Disadvantaged Patients With Multiple Chronic Diseases: A Randomized Clinical Trial

Abstract

In a randomized trial, a community health worker intervention reduced hospitalization and improved outcomes in uninsured or publicly insured patients with multiple chronic conditions such as diabetes, obesity, and smoking. Community health workers can improve health and lower costs, and provide a scalable strategy to improve population health.

Keywords

community health worker, chronic disease, healthcare, RCT

Disciplines

Community Health | Health and Medical Administration | Health Economics | Health Policy | Health Services Research

Comments

LDI Research Briefs are produced by LDI's policy team. For more information please contact Janet Weiner at weinerja@med.upenn.edu.

License



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 License](https://creativecommons.org/licenses/by-nc/4.0/).

Author(s)

Shreya Kangovi, Nandita Mitra, David Grande, Hairong Huo, Robyn A. Smith, and Judith A. Long

Research BRIEF

Research to Improve the Nation's Health System

2017 . No. 8

COMMUNITY HEALTH WORKER SUPPORT FOR DISADVANTAGED PATIENTS WITH MULTIPLE CHRONIC DISEASES: A RANDOMIZED CLINICAL TRIAL

Shreya Kangovi, Nandita Mitra, David Grande, Hairong Huo, Robyn A. Smith, and Judith A. Long

American Journal of Public Health, Published online ahead of print August 2017

KEY FINDINGS

In a randomized trial, a community health worker intervention reduced hospitalization and improved outcomes in uninsured or publicly insured patients with multiple chronic conditions such as diabetes, obesity, and smoking. Community health workers can improve health and lower costs, and provide a scalable strategy to improve population health.

THE QUESTION

Nearly one in three people in the United States have multiple chronic conditions, accounting for more than 65% of all health care spending. Low-income and minority individuals are more likely to have multiple chronic conditions and worse health outcomes than their more advantaged counterparts.

Community health workers (CHWs) – trained laypeople who have a socioeconomic background similar to the patients they serve – have been shown to improve chronic disease outcomes. However, many prior CHW interventions have been disease-specific and have not evaluated whether CHWs can improve outcomes across multiple conditions.

In this study, more than 300 high-poverty patients with multiple chronic conditions set a disease management goal with their primary care provider. One group then worked with a CHW from the IMPaCT (Individualized

Management for Patient-Centered Targets) program for six months to meet their goal, while the other group (the control) had usual care. At the end of six months, did the support of a CHW improve chronic disease control, mental health, quality of care, and hospitalizations for patients?

THE FINDINGS

Compared to the control group, the CHW intervention combined with collaborative goal-setting led to modest improvements in managing diabetes (change in glycated hemoglobin of -0.4 vs 0.0), obesity (change in BMI of -0.3 vs. -0.1) and smoking (change in cigarettes per day of -5.5 vs. -1.3), but no significant change in hypertension. Although most patients improved somewhat, few patients in either the intervention or control group achieved their original goals (18% and 17%).

Patients receiving CHW support showed greater improvements in mental health, and reported higher quality of primary care that was comprehensive (49% vs. 40%) and supportive of disease self-management (63% vs. 38%). At

six months, 16% of intervention group patients had been hospitalized versus 17.8% of control group patients. This difference persisted and widened after one year, with 23% and 32% of patients in the intervention and control group having been hospitalized, respectively.

EXAMPLE OF A CHW-PATIENT ACTION PLAN

Patient Overview

Woman aged 65 years with obesity, asthma, and hypertension, whose chronic disease goal is to lose 11 lbs (from 201 lbs to 190 lbs). She has been blamed for the death of her brother ever since a childhood incident, which creates a lot of stress. She likes to use her hands and feels calmer after doing arts and crafts.

Action Plan

CHW introduced patient to local senior center and helped her enroll in pottery classes. Patient attended CHW-led peer-support group and presented her art and other activities of the senior center.

THE IMPLICATIONS

This study indicates that a standardized CHW intervention is effective in improving health outcomes, quality of care, and reducing hospitalizations for a high-risk, high-cost population. Further, because it is not disease-specific, it has broad applicability and scalability. A previous [clinical trial](#) showed that the IMPaCT intervention improved the quality of hospital discharge and post-hospital outcomes in a low-income population.

This study adds to the evidence that addressing socioeconomic barriers can improve health outcomes in high-risk populations. CHWs work with patients to address the root causes of their chronic disease; in doing so, they bridge clinical care with public health.

The authors explain that the flexibility of the CHWs' approach could contribute to the positive results across multiple domains:

Many interventions for high-risk patients rely on a 'screen and refer' case management approach to addressing unmet social needs. In this intervention, patients and community health workers developed tailored and creative action plans, most commonly focusing on health behavior change.

For health systems increasingly responsible for population health and readmissions, this CHW model offers a proven, low-cost way to address the social determinants of health. Patient-provider goal-setting can be worked into a single appointment without taking up additional time, and tools to structure the CHW program have been widely disseminated.

Recent health reform efforts have focused on changing Medicaid coverage to contain costs, but this study suggests that reforming how we deliver care may be the key to lowering costs and improving outcomes in low-income populations with multiple chronic diseases.

THE STUDY

This study was a randomized controlled trial of 302 patients attending one of two adult clinics of an academic medical center in Philadelphia from July 2013 to October 2015. Eligible patients had an upcoming clinic appointment, were uninsured or on public insurance, lived in a high-poverty region of Philadelphia, and were diagnosed with at least two of the following conditions: hypertension, diabetes, obesity, and tobacco dependence. The average age of the study cohort was 56 years; 95% were black, and 96% had a history of a traumatic event.

Study participants selected one condition to focus on during the study period and, along with their primary care provider, set a disease management goal during their primary care appointment. The process took about five minutes and fit into the workflow of a busy clinic appointment. Baseline measurements, including height, weight, blood pressure, and glycated hemoglobin (a measure of diabetes) were taken. Patients who chose to work on obesity, diabetes, and smoking had poorer baseline control, compared to those who chose to work on hypertension.

Patients randomly assigned to CHWs received six months of support tailored to individual patient goals and preferences. The CHWs communicated with patients at least once per week through telephone, texts, or visits. They also led a weekly patient support group intended to create social networks between patients. The control group received no further support, and continued on to usual care.

The primary outcome was average change in control of patients' selected chronic disease. Patient-reported quality of care, self-rated physical health, and all-cause hospitalizations were also evaluated.

The study team had previously created and tested this CHW intervention, known as IMPaCT. It is designed to be applied across multiple diseases, and to address socioeconomic and behavioral barriers. It was developed through collaboration between an academic health system and community groups.

Kangovi S., Mitra N., Grande D., Huo H., Smith R.A., and Long J.A. (2017), Community Health Worker Support for Disadvantaged Patients with Multiple Chronic Diseases: a Randomized Clinical Trial, *American Journal of Public Health*. doi:10.2105/AJPH.2017.303985

ABOUT LDI

Since 1967, the Leonard Davis Institute of Health Economics (LDI) has been the leading university institute dedicated to data-driven, policy-focused research that improves our nation's health and health care. Originally founded to bridge the gap between scholars in business (Wharton) and medicine at the University of Pennsylvania, LDI now connects all of Penn's schools and the Children's Hospital of Philadelphia through its more than 250 Senior Fellows.

LDI Research Briefs are produced by LDI's policy team. For more information please contact Janet Weiner at weinerja@mail.med.upenn.edu.



LEAD AUTHOR

DR. SHREYA KANGOVI

[Shreya Kangovi, MD, MSHP](#), is an internist, pediatrician and health policy researcher who studies patient perspectives on socioeconomic determinants of health and health care utilization, and the efficacy of community health workers in modifying these determinants. Dr. Kangovi led the community-engaged research working group that developed the community health worker intervention, and is the founding executive Director of the [Penn Center for Community Health Workers](#).