



August 2016 – SUPPORT Summary of a systematic review

Do community health workers improve the care of people with hypertension?

Community health workers (CHWs), carry out functions related to healthcare delivery, have no formal professional designation to deliver healthcare, but are trained as part of an intervention, and have a relationship with the community being served. They can be used to facilitate improvement in the management of chronic conditions like hypertension.

Key messages

In people with hypertension:

- CHWs probably improve behavioural changes (such as appointment keeping and adherence to medication), blood pressure control, and the 5-year mortality rate.
- CHWs may slightly improve healthcare utilization and health systems outcomes (such as reduced hospital admissions).
- All the included studies were conducted in a high-income country but mainly in poor communities.



Who is this summary for?

People deciding whether to use community health workers in the management of hypertension

! This summary includes:

- Key findings from research based on a systematic review
- Considerations about the relevance of this research for low-income countries

X Not included:

- Recommendations
- Additional evidence not included in the systematic review
- Detailed descriptions of interventions or their implementation

This summary is based on the following systematic review:

Brownstein JN, Chowdhury FM, Norris SL, et al. Effectiveness of community health workers in the care of people with hypertension. *Am J Prev Med* 2007; 32:435-47.

What is a systematic review?

A summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise the relevant research, and to collect and analyse data from the included studies

SUPPORT was an international project to support the use of policy relevant reviews and trials to inform decisions about maternal and child health in low- and middle-income countries, funded by the European Commission (FP6) and the Canadian Institutes of Health Research.

Glossary of terms used in this report:
www.supportsummaries.org/glossary-of-terms

Background references on this topic:
See back page

Background

Hypertension is a significant public health problem. Only about 30% of people who are diagnosed with hypertension have their blood pressure under control. In poor settings, overcoming barriers such as health beliefs and values, insufficient access to culturally sensitive care, lack of knowledge about hypertension, and an absence of self-management skills are key to effective hypertension control. In order to improve health outcomes in the community, the involvement of trained laypeople, known as community health workers (CHWs), can have an important role. CHWs can be used to facilitate access to care, promote continuity of care, facilitate the adoption of self-care skills, and enhance compliance with treatment regimens.

How this summary was prepared

After searching widely for systematic reviews that can help inform decisions about health systems, we have selected ones that provide information that is relevant to low-income countries. The methods used to assess the reliability of the review and to make judgements about its relevance are described here: www.supportsummaries.org/how-support-summaries-are-prepared/

Knowing what's not known is important

A reliable review might not find any studies from low-income countries or might not find any well-designed studies. Although that is disappointing, it is important to know what is not known as well as what is known.

A lack of evidence does not mean a lack of effects. It means the effects are uncertain. When there is a lack of evidence, consideration should be given to monitoring and evaluating the effects of the intervention, if it is used.

About the systematic review underlying this summary

Review objective: To examine the effectiveness of CHWs in supporting the care of people with hypertension

Types of	What the review authors searched for	What the review authors found
Study designs & Interventions	Any study design evaluating the effectiveness of CHWs in supporting the care of hypertensive people	8 randomized trials, 3 before-after studies, 1 non-randomized trial, 1 interrupted time-series study, and 1 survey. All studies but one focused exclusively on controlling hypertension. CHWs contacted recipients from weekly to yearly.
Participants	CHWs with no formal professional designation but trained to deliver healthcare to hypertensive people	The CHWs, predominantly women with different experience in community service and training, were recruited from the community, and resembled the participants in race/ethnicity and socioeconomic background.
Settings	Healthcare or community settings	All studies were conducted in the United States mainly focused on poor, urban African Americans.
Outcomes	At least one outcome among participants	Participant satisfaction, awareness, behaviour, physiologic measures, health outcomes, and healthcare system outcomes

Date of most recent search: May 2006

Limitations: This is a well-conducted systematic review with only minor limitations.

Brownstein JN, Chowdhury FM, Norris SL, et al. Effectiveness of community health workers in the care of people with hypertension. *Am J Prev Med* 2007; 32:435-47.

Summary of findings

Fourteen studies involving 61,366 participants (median of 180 participants per CHW) were included in this systematic review.

1) Health outcomes

Of the ten studies that examined the effects of CHWs on blood pressure control, nine reported positive improvements. One study reported mortality reductions and two showed improvements in other patient outcomes, such as changes in heart mass and cardiovascular risk.

- CHWs probably improve blood pressure control. The certainty of this evidence is moderate.
- CHWs probably improve the 5-year mortality rate. The certainty of this evidence is moderate.

About the certainty of the evidence (GRADE) *



High: This research provides a very good indication of the likely effect. The likelihood that the effect will be substantially different† is low.



Moderate: This research provides a good indication of the likely effect. The likelihood that the effect will be substantially different† is moderate.



Low: This research provides some indication of the likely effect. However, the likelihood that it will be substantially different† is high.



Very low: This research does not provide a reliable indication of the likely effect. The likelihood that the effect will be substantially different† is very high.

* This is sometimes referred to as 'quality of evidence' or 'confidence in the estimate'.

† Substantially different = a large enough difference that it might affect a decision

See last page for more information.

Effects of CHWs in supporting care of people with hypertension				
People	Hypertensive people, mainly poor urban African Americans			
Settings	Healthcare and/or community settings of the United States			
Intervention	CHWs			
Comparison	Usual care			
Outcomes	Impact	Number of participants (studies)	Certainty of the evidence (GRADE)	Comments
Blood pressure control	Improved from 4% to 46% over 6 to 24 months. One study found no important difference over 12 months	59,740 (9 studies)	⊕⊕⊕○ Moderate	
Mortality at 5 years	Reduction of 12.6% (control 30.2% vs. CHWs 17.6%)	400 (1 study)	⊕⊕⊕○ Moderate	Strong correlation among adherence to medication, keeping appointments, and blood pressure control
p: p-value GRADE: GRADE Working Group grades of evidence (see above and last page)				

2) Behavioral changes

Positive behavioral changes were noted in nine of the ten studies measuring such changes. Two studies that addressed patient satisfaction found that the competency of the CHWs and the social support they provided were very important to the participants.

→ CHWs probably improve behavioural changes such as appointment keeping and adherence to medication. The certainty of this evidence is moderate.

Effects of CHWs in supporting care of people with hypertension				
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Settings	Healthcare and/or community settings of the United States			
Intervention	CHWs			
Comparison	Usual care			
Outcomes	Impact	Number of participants (studies)	Certainty of the evidence (GRADE)	Comments
Appointment keeping	Improved from 19% to 39% in 5 studies, and no important difference in another study over 12 to 24 months	59,192 (6 studies)	⊕⊕⊕○ Moderate	
Adherence to medication	Improved from 8% to 26% over 12 months	1355 (5 studies)	⊕⊕⊕○ Moderate	
p: p-value GRADE: GRADE Working Group grades of evidence (see above and last page)				

3) Healthcare system outcomes

Four studies reported improvements in healthcare utilization and systems outcomes, including more appropriate use of the emergency department, reduced admissions to the hospital through the emergency room, cost savings, a larger proportion of participants having a physician or nurse for hypertension care, a higher number of appropriate follow-up visits, greater responsiveness of providers to patients' needs, and increased participation of CHWs in planning meetings.

→ CHWs may slightly improve healthcare utilization and systems outcomes. The certainty of this evidence is low.

Relevance of the review for low-income countries

→ Findings	▷ Interpretation*
APPLICABILITY	
<p>→ All studies were conducted in high-income countries but most of them were directed to poor and vulnerable populations.</p> <p>→ Generally high level of organisation and support provided by the health systems.</p>	<p>▷ Factors that should be considered about the applicability in low-income countries include:</p> <ul style="list-style-type: none">– The availability of routine data of recipients of the intervention– The financial and organisational resources to provide clinical and managerial support for CHWs– The supplies necessary for CHWs to deliver services– Additional services stimulated by widespread programme implementation <p>▷ The integration of CHWs into the primary healthcare team and the capacity of other health professionals to collaborate with them are also key factors of a successful CHW intervention.</p>
EQUITY	
<p>→ Overall, the included studies provided little data regarding differential effects of the interventions for disadvantaged populations.</p>	<p>▷ Many CHWs programmes aim to address inequity by extending services to underserved communities. Community involvement in programme decisions, such as selection of CHWs, may improve their acceptability and success.</p> <p>▷ Some interventions used systems (e.g. telephone, registers, and reminders) that might exclude the most disadvantaged, thus worsening inequities.</p>
ECONOMIC CONSIDERATIONS	
<p>→ There is little information regarding the cost-effectiveness of CHWs but one study reported cost savings.</p>	<p>▷ The cost of CHW programmes is likely to be highly variable and must be estimated based on specific local conditions outside research settings.</p> <p>▷ Before CHW programmes are scaled up, robust evidence is needed regarding the cost-effectiveness of the interventions delivered by CHWs.</p>
MONITORING & EVALUATION	
<p>→ None of the studies were conducted in a low-income country.</p> <p>→ There were considerable differences in numbers, and training of CHWs.</p>	<p>▷ If decision makers from low-income countries choose to implement CHW programmes for managing hypertension, they should ensure that these programmes include robust evaluation including health outcomes and cost-effectiveness.</p> <p>▷ The acceptability of CHW programmes by recipients and health professionals may need to be evaluated before such programmes are taken to scale.</p>

*Judgements made by the authors of this summary, not necessarily those of the review authors, based on the findings of the review and consultation with researchers and policymakers in low-income countries. For additional details about how these judgements were made see: www.supportsummaries.org/methods

Additional information

Related literature

These systematic reviews analysed different interventions provided by CHWs

van Ginneken N, Tharyan P, Lewin S, et al. Non-specialist health worker interventions for the care of mental, neurological and substance-abuse disorders in low- and middle-income countries. *Cochrane Database of Systematic Reviews* 2013, Issue 11. Art. No.: CD009149.

Lewin S, Munabi-Babigumira S, Glenton C, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database of Systematic Reviews* 2010, Issue 3. Art. No.: CD004015.

Gibbons MC, Tyus NC. Systematic review of U.S.-based randomized controlled trials using community health workers. *Progress in community health partnerships: research, education, and action*. 2007 Winter;1(4):371-81.

Foster G, Taylor SJ, Eldridge SE, Ramsay J, Griffiths CJ. Self-management education programmes by lay leaders for people with chronic conditions. *Cochrane database of systematic reviews*. 2007 (4):CD005108.

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Conflict of interest

None declared. For details, see: www.supportsummaries.org/coi

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This review should be cited as

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The summary should be cited as

Agustín Ciapponi. Do community health workers improve the care of people with hypertension? A SUPPORT Summary of a systematic review. August 2016. www.supportsummaries.org

About certainty of the evidence (GRADE)

The “certainty of the evidence” is an assessment of how good an indication the research provides of the likely effect; i.e. the likelihood that the effect will be substantially different from what the research found. By “substantially different” we mean a large enough difference that it might affect a decision. These judgements are made using the GRADE system, and are provided for each outcome. The judgements are based on the study design (randomised trials versus observational studies), factors that reduce the certainty (risk of bias, inconsistency, indirectness, imprecision, and publication bias) and factors that increase the certainty (a large effect, a dose response relationship, and plausible confounding). For each outcome, the certainty of the evidence is rated as high, moderate, low or very low using the definitions on page 3.

For more information about GRADE: www.supportsummaries.org/grade

SUPPORT collaborators:

The Cochrane Effective Practice and Organisation of Care Group (EPOC) is part of the [Cochrane Collaboration](http://www.cochrane.org). The Norwegian EPOC satellite supports the production of Cochrane reviews relevant to health systems in low- and middle-income countries. www.epocoslo.cochrane.org

The Evidence-Informed Policy Network (EVIPNet) is an initiative to promote the use of health research in policymaking in low- and middle-income countries. www.evipnet.org

The Alliance for Health Policy and Systems Research (HPSR) is an international collaboration that promotes the generation and use of health policy and systems research in low- and middle-income countries. www.who.int/alliance-hpsr

Norad, the Norwegian Agency for Development Cooperation, supports the Norwegian EPOC satellite and the production of SUPPORT Summaries. www.norad.no

The Effective Health Care Research Consortium is an international partnership that prepares Cochrane reviews relevant to low-income countries. www.evidence4health.org

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