Do community health worker interventions embedded in primary care improve chronic disease health outcomes in medically underserved patient populations?

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EVIDENCE-BASED ANSWER

Maybe. Community health workers (CHWs) may improve adherence to follow-up visits and patient perceived control of their disease but do not consistently reduce emergency department visits in patients with chronic diseases (SOR: **C**, mixed evidence from two systematic reviews of various studies and single randomized controlled trial [RCT]). CHWs can increase screening for breast cancer up to 33% and help management of cardiovascular disease (SOR: **C**, qualitative evidence from a systematic review of RCTs, cohorts, and case-control studies).

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A 2016 systematic review of 34 studies (N=33,309) examined the role of Community health worker (CHW) interventions on various health care services.[1] A subanalysis evaluated five randomized controlled trials (RCTs) (N=1,496) that specifically examined CHWs use in caring for patients with at least one chronic disease. One RCT of 542 black Americans with type-2 diabetes received education and follow up care services with a nurse care manager (1 visit/year) and CHW (3 visits/year) over two years. After 24 months, no significant reduction was observed in emergency department visits compared with those not enrolled (risk ratio [RR], 0.77; 95% CI, 0.59–1.00). A second RCT enrolled 200 recently released prisoners with a chronic condition or older than 50 years. The CHW attended all parole meetings and offered a transitional visit within two weeks post release over 12 months. After 12 months, a significant reduction was observed in ED visits compared with those not enrolled (incidence rate ratio [IRR], 0.49; 95% CI, 0.34–0.70). A third RCT examined the completion of follow-up visits in patients with hypertension. Adult participants (n=421) with elevated blood pressure and income at 200% or less of the poverty level had CHWs set up, remind, and follow-up on patient clinical appoints and reduce barriers to transportation and childcare services. The intervention group's rate for completion of follow-up visits was significantly greater than the usual care group's rate (mean difference [MD], 39%; $P<.001$). The other two RCTs (n=333) measured outcomes for medication adherence but did not find significant changes after CHW intervention.

A 2018 multicenter, two-armed, single-blind RCT (n=592) examined the effectiveness of implementing a CHW for patients with two or more chronic illnesses.[2] Patients were recruited from three primary care facilities and included uninsured patients or those with public health insurance living in high-poverty areas. Patients were included if diagnosed with two or more of the following chronic diseases: hypertension, diabetes, obesity, and tobacco dependence. Patients were randomized to receive either tailored support from a CHW (n=304) or usual care (n=288). The primary outcome measured was self-reported physical health on the SF-12v2 Health Survey Physical Component Summary with higher scores indicating a better health status (score range 0–100), and secondary outcomes included chronic disease control and hospitalization rates. No significant change was observed in self-reported physical health between the CHW and the control groups at six months (MD, 0.6 vs 2.3; $P=.06$) and at nine months (1.8 vs 1.6; $P=.89$). However, patients receiving CHW support did report via a survey that general improvement was witnessed in their own management of their chronic diseases compared with the usual care group (odds ratio [OR], 1.8; 95% CI, 1.4–2.4). No significant difference was found in average length of stay for hospitalizations in the CHW group compared with the usual care group.

A 2016 systematic review of 61 studies (N=196,879) examined the evidence of CHW interventions within vulnerable populations for cost-effectiveness and patient outcomes stratified by chronic and nonchronic conditions.[3] The included studies were not described in detail but did include mainly RCTs and cohorts, with a few cross-sectional studies. Studies were included if CHWs served a primary role in the intervention of managing a chronic condition that is related to primary care. Thirty studies focused on cancer screening and 26 on cardiovascular disease prevention. The majority of interventions had only one CHW worker (82%), with 18% partnered with a primary care professional. The CHW functioned primarily as an educator in 79% of the studies, with 59% focused on counseling to address barriers and reinforce positive behaviors. Interventions included health coaching, health education, home visits, service linkages, and patient advocacy. Because of qualitative summaries and differences among scoring measures, no meta-analysis was conducted. Improvements in

screening behaviors for patients with a CHW were seen in 70% of the studies focused on cancer, with increases in screenings observed between 6% and 33%. Sixteen studies (62%) found a positive change in cardiovascular risk reduction with CHW education directed toward elevated blood pressure or diabetic control. Only one study of the eight that measured cost-effectiveness found an overall cost reduction with implementing a CHW. EBP

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