Community Preventive Services Task Force

Cancer Screening: Interventions Engaging Community Health Workers – Breast Cancer

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Finding and Rationale Statement
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CPSTF Finding and Rationale Statement

Intervention Definition

Interventions that engage community health workers (CHWs) to increase breast cancer screening implement one or more interventions reviewed by the Community Preventive Services Task Force (CPSTF) to do the following:

- Increase demand for screening services using group education [www.thecommunityguide.org/findings/cancer-screening-group-education-clients-breast-cancer], one-on-one education [www.thecommunityguide.org/findings/cancer-screening-one-one-education-clients-breast-cancer], client reminders [www.thecommunityguide.org/findings/cancer-screening-client-reminders-breast-cancer], or small media [www.thecommunityguide.org/findings/cancer-screening-small-media-targeting-clients-breast-cancer]
- Improve access to screening services by reducing structural barriers [www.thecommunityguide.org/findings/cancer-screening-reducing-structural-barriers-clients-breast-cancer]

CHWs are trained frontline health workers who serve as a bridge between communities and healthcare systems. They are from, or have a close understanding of, the community served. They often receive on-the-job training and work without professional titles. Organizations may hire CHWs or recruit volunteers to act in this role. CHWs may work alone or as part of an intervention team that includes other healthcare professionals.

CPSTF Finding (April 2019)

The Community Preventive Services Task Force (CPSTF) recommends interventions that engage CHWs to increase breast cancer screening (by mammography) based on strong evidence of effectiveness. Studies included in the systematic review showed increases in breast cancer screening rates when CHWs delivered interventions independently or as part of an implementation team.

Interventions that engage CHWs to increase breast cancer screening are typically implemented in underserved communities to improve health and can enhance health equity.

Rationale

Basis of Finding

The CPSTF recommendation is based on evidence from a systematic review of 66 studies (search period database inception – July 2017). Included studies evaluated intervention effects on breast (36 studies), cervical (29 studies), or colorectal (17 studies) cancer screening use—services recommended by the U.S. Preventive Services Task Force (2016a [www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/breast-cancer-screening1], 2018 [www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cervical-cancer-screening2], 2016b [www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/colorectal-cancer-screening2], respectively).

The included studies examined interventions where CHWs worked alone or as part of a team. To better understand CHW effectiveness in increasing cancer screening use, the following stratifications were used:

- CHW alone – CHWs implemented everything independently
- CHW added – CHWs worked in a team, where the effect of adding a CHW could be isolated

- CHW in a team – CHWs worked in a team, but the effect of adding CHW could not be isolated; only the effect of the whole team could be determined

Compared with no intervention or usual care, interventions that engaged community health workers increased breast cancer screening whether CHWs worked alone or in a team.

- Overall: median increase of 12.7 percentage points (interquartile interval [IQI]: 5.7 to 24.0; 37 study arms)
- CHW alone: median increase of 15.0 percentage points (IQI: 5.7 to 24.2; 17 study arms)
- CHW added: median increase of 11.0 percentage points (IQI: 2.8 to 12.7; 7 study arms)
- CHW in a team: median increase of 13.7 percentage points (IQI: 8.6 to 28.5; 17 study arms)

The CPSTF has related findings for interventions engaging CHWs to increase appropriate screening for the following:

- Cervical cancer (recommended) [www.thecommunityguide.org/findings/cancer-screening-interventions-engaging-community-health-workers-cervical-cancer]
- Colorectal cancer (recommended) [www.thecommunityguide.org/findings/cancer-screening-interventions-engaging-community-health-workers-colorectal-cancer]

The remaining sections of the finding and rationale statement are based on analysis of all included studies across breast, cervical, or colorectal cancer screening. Economic findings are specific to colorectal cancer screening.

Stratified Analyses

Interventions that engage community health workers vary in the type and number of intervention components used, CHW roles, and study population characteristics. The review team conducted stratified analyses to understand the influence of these factors on cancer screening use.

Included studies used intervention components such as one-on-one education, group education, small media, and client reminders to increase community demand for screening services. Studies also improved community access to screening services by reducing administrative barriers, assisting with appointment scheduling, providing transportation, translation, or child care.

Interventions were designed to increase community demand, improve access to services, or both. Interventions that aimed to do both reported the largest increases in screening rates (median increase of 18.5 percentage points, IQI: 8.9 to 26.6; 24 study arms).

Interventions engaged CHWs to implement one to six intervention components. While increases in screening use were seen across interventions with different numbers of components, larger increases were seen when CHWs implemented more intervention components.

CHWs most commonly provided one-on-one or group education, either alone or in combination with other components. Interventions that provided group education produced larger increases in cancer screening use (15.0 percentage points, IQI: 8.9 to 25.0; 35 study arms) than ones that provided one-on-one education (9.8 percentage points, IQI: 5.0 to 20.2; 42 study arms). Among studies that aimed to increase access to screening services, larger increases were seen when

CHWs assisted with translation (30.2 percentage points, range: 18.2 to 58.9; 4 study arms) or addressed transportation barriers (26.8 percentage points, IQI: 17.9 to 58.6; 9 study arms).

Most studies provided information about baseline screening rates and were stratified to compare 0% vs. non-0% baseline or 0% to 50% vs. ≥50% baseline. Interventions were effective across all strata, though participants with baseline between 0% and 50% saw a greater increase (15.9 percentage points, IQI: 8.9 to 25.1; 22 study arms) than participants with ≥50% baseline (8.4 percentage points, IQI: 0.2 to 15.6; 20 study arms).

Applicability and Generalizability Considerations

Intervention Settings

The CPSTF finding is considered applicable to a range of settings within or outside the United States, including healthcare or community-based settings in urban or rural areas. Studies were conducted in the United States (61 studies), Canada (1 study), in both the United States and Canada (1 study), Europe (2 studies), and Australia (1 study).

Population Characteristics

Interventions were effective for age-appropriate populations that reported different baseline screening use. Interventions were effective across racial and ethnic groups examined, and many studies focused on one racial or ethnic group. Only two interventions were implemented among majority or 100% American Indian/Alaska Native populations.

Interventions were effective across population groups with different educational backgrounds, employment levels, insurance statuses, and income levels. Slightly higher effects were reported in studies that targeted mostly low income populations.

While interventions were effective whether or not participants had a regular source of care, larger increases were observed when all or most of the participants had an established source of care.

Intervention Characteristics

Findings should be applicable across intervention characteristics, independent of the number and type of intervention components used. Interventions were effective whether components were used to increase demand or both demand and access. Only two studies increased access to services alone and were effective in increasing cancer screening.

Interventions were effective when components were delivered remotely, face-to-face, or both, though greater effects were reported when CHWs used both methods of communication. Interventions with or without tailoring produced similar increases in screening.

CHWs met with study participants one or more times, and larger increases were reported when there were more encounters. With two or more encounters, interventions lasted from half a month to 60 months and were stratified into <6 months, between 6 and 12 months, and ≥12 months. While all of the interventions were effective, slightly larger effects were reported by studies with longer intervention durations.

CHW Roles

CHWs in the included studies focused on six out of the ten core roles identified by the Community Health Worker Core Consensus Project in 2016 (C3 Project): cultural mediation among individuals, communities, and health and social service systems; culturally appropriate education and information; care coordination, case management, and system navigation; coaching and social support; individual and community capacity building; and outreach. Findings are applicable independent of the type or the number of core roles performed by the CHWs.

Data Quality Issues

Study designs included randomized control trials (43 studies), pre-post with concurrent comparison groups (11 studies), or pre-post (12 studies). Stratified analyses found increases across different study designs, indicating robust findings.

Other Benefits and Harms

No additional benefits or harms were reported in the included studies.

Included studies reported that CHWs improved their self-confidence and feelings of self-worth by delivering the interventions. The broader literature suggests that CHWs can also increase their target population's access to other healthcare services.

Economic Evidence

There was not enough economic evidence to determine cost-effectiveness for interventions engaging CHWs to increase breast cancer screening.

The economic review included 5 studies (search period through April 2019) specific to breast cancer screening by mammography. Studies were conducted in the United States (4 studies) and the United Kingdom (1 study). They focused on increasing demand for breast cancer screening (2 studies), and increasing demand for, and access to, screening (2 studies); one study did not report strategies used in the interventions. Two of the U.S. studies were excluded from the evidence review (one reported the combined cost for intervention and control groups; the other used a modeling assumption of a high, 76% baseline screening rate). All monetary values were adjusted to 2018 U.S. dollars.

The U.K. study was a simulated model that reported costs of CHWs within three different salary grades and screening rates. In addition to promoting cancer screening, the CHWs helped clients manage chronic conditions such as asthma and diabetes. The median cost per person was $1,578 (IQI: $1,245 to $1,969). Both U.S. studies were randomized controlled trials, one of which reported costs of CHWs within three different salary grades. The median cost per person from both studies was $58 (IQI: $22 to $373).

One study each from the United States and the United Kingdom reported the incremental cost per additional woman screened. The U.K. study, which reported different salary and screening rates for the CHWs involved in comprehensive health intervention activities, had a median incremental cost per additional woman screened of $7,891 (IQI: $4,150 to $22,819). The median incremental cost per additional woman screened for the U.S. study was $215.

None of the studies reported incremental cost per quality-adjusted life year (QALY) gained. Therefore, a cost-effectiveness determination could not be made for CHW interventions to increase breast cancer screening.

Considerations for Implementation

Results from stratified analyses showed interventions were effective across different settings with different population or intervention characteristics, suggesting intervention composition can be flexible. Studies in this review recruited CHWs from the target community or matched them with participants by race, language, or culture. The CHWs worked alone or as part of a team and implemented interventions with a heterogeneous mix of components, duration, and intensity. Decision makers should consider the local population, needs, and context when selecting intervention components.

While most of the included studies targeted underserved populations, increases in cancer screening were observed for all population groups examined (i.e., across different racial or ethnic groups and socioeconomic status). Interventions

implemented in areas with low-income or low screening rates, however, produced larger screening increases. In 2015, people without health insurance or with incomes less than 139% of the federal poverty level had much lower cancer screening rates than their counterparts. Asian Americans, American Indians, and Alaska Natives also had lower screening rates than other racial and ethnic groups (White 2015). Interventions engaging CHWs can be targeted to these populations to increase cancer screening and improve health equity.

Most of the included studies provided some form of education. Interventions involving group education reported greater effects than those involving one-on-one education. It's possible that the social support received in group sessions motivates more participants to obtain screening. Interventions were effective whether or not they tailored to individual participant's needs. It's possible that with CHWs delivering the interventions based on their understanding of the target communities and individual participant, additional tailoring might not add value. While effectiveness was similar across the core roles performed by CHWs (C3 Project 2016), interventions reported larger increases in screenings when CHWs provided care coordination, case management, or system navigation.

Greater increases in cancer screening were observed when interventions had more than two components, or when interventions increased both demand for, and access to, screening services. Similar findings were reported in the Community Guide review on multicomponent interventions to increase breast cancer screening [www.thecommunityguide.org/findings/cancer-screening-multicomponent-interventions-breast-cancer]. Interventions that continued longer than six months or consisted of multiple sessions were more effective than ones with shorter durations or single-session interventions. Results indicate that effects may wane over time and booster sessions might be needed.

Technology infrastructure may be a consideration for some intervention approaches. Interventions that used both face-to-face and remote methods of communication were more effective than interventions that used either method alone. Technology may increase efficiency and reduce maintenance costs (Flight et al., 2012; Mosen et al., 2010), but it also may require upfront costs and resources (Taplin et al., 2008; Leffler et al., 2011). In addition, populations may not have equal access to these technologies (Flight et al., 2012).

The Community Preventive Services Task Force also recommends interventions engaging CHWs to improve cardiovascular disease management [www.thecommunityguide.org/findings/cardiovascular-disease-prevention-and-control-interventions-engaging-community-health], diabetes prevention [www.thecommunityguide.org/findings/diabetes-prevention-interventions-engaging-community-health-workers], and diabetes management [www.thecommunityguide.org/findings/diabetes-management-interventions-engaging-community-health-workers]. Together with the findings from the current review, it is clear that CHWs are effective in preventing and managing multiple chronic conditions. Currently, only a few states have certification processes in place for CHWs (some voluntary, some required). Other states are working towards certification. Standardizing the role of CHWs and providing certification opportunities would ensure CHW proficiency. It could also encourage more people to become CHWs and persuade decision makers to fund interventions that engage CHWs.

Evidence Gaps

Several areas were identified as having limited information. Additional research would help answer questions and strengthen findings in these areas.

- What is the impact of these interventions on repeat screening?
- Are these interventions effective among American Natives/Alaska Natives?

- Is intervention effectiveness influenced by any of the following?
  - Participants' health literacy
  - Supervision of CHWs
  - Compensation for CHW's work
  - Inclusion of CHWs in research and evaluation
- How does CHW training affect outcomes? What is the best way to train CHWs for this type of work?
- Are interventions that engage community health workers to increase breast cancer screening cost-beneficial or cost-effective? Studies reporting on cost-effectiveness and/or cost-benefits, would provide more economic evidence for systematic reviews.

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provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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