The Guide to Community Preventive Services
THE COMMUNITY GUIDE
What Works to Promote Health

Increasing Appropriate Vaccination: Community-Based Interventions Implemented in Combination (2010 Archived Review)

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Review Summary

Intervention Definition

Community-based interventions implemented in combination involve activities coordinated in a community to increase vaccination rates within a targeted population. Activities focus on increasing community demand for vaccinations and enhancing access to vaccination services. Efforts may also include interventions directed at vaccination providers.

Programs usually involve partnerships of community organizations, local government, and vaccination providers. Coordinated interventions may include:

- Client reminder and recall systems
- The use of staff to conduct manual outreach and tracking of clients
- Mass and small media
- Educational activities
- Expanded access to vaccination services

Summary of Task Force Finding

The Community Preventive Services Task Force recommends community-based interventions implemented in combination to increase vaccinations in targeted populations, on the basis of strong evidence of effectiveness in increasing vaccination rates.

The conclusion of strong evidence was based on findings from 17 studies that evaluated coordinated interventions to:

1. Increase community demand
2. Enhance access to vaccination services
3. Reduce missed opportunities by vaccination providers

In 13 of the 17 studies, the community-based effort combined one or more interventions to increase community demand for vaccinations with one or more interventions to enhance access to vaccination services.

The Task Force notes that implementing manual outreach and tracking or home visits can be resource-intensive and costly, relative to other options for increasing vaccination rates. Such interventions should be used only when there is demonstrated need, and resources are available.

About the Systematic Review

The Task Force recommendation was made in June 2010. It is based on relevant evidence from two previously completed reviews (Multicomponent Interventions for Expanding Access in Healthcare Settings, and Multicomponent Interventions that include Education; search period 1980-1997) and an updated review (search period 1997-2009). Updates of reviews are conducted to incorporate more recent evidence.

These reviews were conducted on behalf of the Task Force by a team of specialists in systematic review methods, and in research, practice and policy related to vaccinations to prevent diseases.

Task Force Finding and Rationale Statement

Intervention Definition

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Task Force Finding (June 2010)

The Community Preventive Services Task Force recommends community-based interventions implemented in combination to increase vaccinations in targeted populations, on the basis of strong evidence of effectiveness in increasing vaccination rates.

The conclusion of strong evidence was based on findings from 17 studies that evaluated coordinated interventions to: 1) increase community demand, 2) enhance access to vaccination services, and 3) reduce missed opportunities by vaccination providers. In 13 of the 17 studies, the community-based effort combined one or more interventions to increase community demand for vaccinations with one or more interventions to enhance access to vaccination services.

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Rationale

Basis of Finding

The Task Force considered evidence from 17 studies with 20 study arms (search period January 1980-November 2009). All included studies provided a common measure of change in vaccination rates; the median absolute change was an increase of 15 percentage points (interquartile interval [IQI]: 7 to 25 percentage points).

The included studies reflected a variety of interventions in different combinations. The Task Force examined the evidence of differences attributable to specific interventions and to combinations of interventions using different strategic approaches. These strategic approaches included interventions to increase client and community demand (client reminder and recall systems, manual outreach and tracking, client or community-wide education, client incentives, client-held paper immunization records, and case management); interventions to enhance access to vaccination services (expanded access in healthcare settings, home visits, and reduced client out-of-pocket costs); and interventions directed at vaccination providers and systems (provider assessment and feedback, provider education, and provider reminder systems).

Fourteen of the included study arms implemented an effective combination of one or more interventions to increase client and community demand with one or more interventions to enhance access to vaccination services (absolute median change: +16 percentage points, IQI: 11.9 to 27.6 percentage points). The most common individual intervention

implemented was client reminder and recall systems. Fourteen of the included study arms implemented some form of a client reminder and recall system based on the capabilities of participating vaccination providers, established as one part of a community manual outreach and tracking program, or generated from the regional immunization information system (IIS) (absolute median change: +14.5 percentage points, IQI:7.5 to 18.8 percentage points). Five study arms used a regional IIS to generate reminder or recall notices to appropriate clients, or to identify clients for recruitment to more comprehensive manual outreach and tracking interventions. These strategies and specific interventions should be considered by program planners when adopting interventions in combination.

Applicability and Generalizability Issues

The included studies examined changes in vaccination rates in targeted populations and for a range of different vaccines. Community-based approaches were effective in increasing vaccination rates when delivered among young children (childhood series and hepatitis B) and older adults (influenza and pneumococcal vaccines). Information on implementation in rural settings was limited and none of the studies evaluated interventions targeted to adolescents. The applicability of this evidence to rural settings and for adolescent vaccinations is uncertain and additional intervention research in these areas is encouraged.

Vaccination interventions delivered in combination are predominantly targeted at populations with low vaccination rates. Effectiveness of these interventions was demonstrated in older adults, low SES groups, and African American and Latino populations. The four adult studies targeted adults 65 years and older, with one study specifically targeting the frail elderly; overall median change was 30.8 percentage points (range of values: 16 to 53 percentage points). Nine studies targeted low-SES groups with a median change of 12.1 percentage points (IQI 3.4 to 27.6 percentage points). In addition, eight studies evaluated interventions delivered in urban settings with African-American or Latino populations with a median change of 13 percentage points (IQI: 4.8 to 29.3 percentage points).

In this review, the Task Force did not consider interventions implemented exclusively in school and organized child care centers or, Women, Infants, and Children (WIC) settings. The Task Force did not consider the available evidence on effectiveness for programs in these distinct settings and populations appropriate for inclusion in an assessment of community-wide efforts. Specifically, programs in schools and organized child care centers and programs conducted in WIC settings have been reviewed and recommended by the Task Force, and both are viable options for communities to implement where appropriate.

Other Benefits and Harms

The Task Force identified two possible additional benefits of these community-based programs from the reviewed evidence and input from experts in the field: 1) increased client contact with vaccination providers may increase the delivery of other preventive services; and 2) home visits can provide opportunities to assist clients in addressing other barriers to social and clinical services and in identifying other health issues in the home environment. However, concerns about the safety of staff involved in home visits was described in one study and may be a barrier to the use of these interventions in a community-based effort.

Economic Evidence

An economic evaluation of these interventions also was conducted. Economic information from 11 studies that qualified for this review indicates that several of these interventions are resource-intensive; manual outreach and tracking, and home visits, particularly, have higher costs compared to community-based efforts without these components. Resource-intensive interventions may be necessary to increase vaccination rates among populations with very low vaccination

rates or communities where disparities in coverage persist. These interventions are more likely to be cost-efficient if implemented as part of a stepped approach, beginning with less resource-intensive interventions.

Considerations for Implementation

The Task Force recognizes that a comprehensive approach involving coordinated interventions within the community may be required to increase vaccination rates where disparities in coverage exist. Coalitions may be important for establishing effective partnerships, although the size of the coalition may vary depending on the community, the targeted population, and the scope of the problem. Only four intervention studies clearly involved community coalitions that used the principles of community-based participatory research. Most included studies were implemented by academic and clinical partnerships and may not necessarily reflect sustainable, practice-based evidence for many communities. Most studies included in this review, however, did not provide additional, direct vaccination services, and instead worked with existing vaccination providers to expand access. Partnerships between community organizations and vaccination providers are likely to be an essential component of effective, sustained community-based efforts.

Individualized support interventions such as manual outreach and tracking and home visits can be resource-intensive components of a community-based effort. In several studies considered in this review, longitudinal tracking of clients was hampered by loss to follow-up (although the median was 12%, one study reported a loss to follow-up of 64% over 29 months). Program planners should consider community characteristics, such as mobility and fragmentation of health care, in the selection and combination of interventions to improve vaccination rates.

Evidence Gaps

The Task Force encourages additional intervention research to determine the essential components (interventions and strategic combinations) of an effective community-based program. More economic information on these interventions is needed, specifically, evaluations on the efficiencies of the resource-intensive components of manual outreach and tracking and home visits. Additional research also should examine ways to sustain vaccination programs that deliver interventions in combination in the community setting, especially those that implement these interventions through the coordination of existing community-based organizations.

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