

# Increasing Appropriate Vaccination: Vaccination Programs in Schools and Organized Child Care Centers

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## Task Force Finding and Rationale Statement

### Intervention Definition

Vaccination programs in schools or organized child care centers are multicomponent interventions delivered on-site to improve immunization rates in children and adolescents. These programs include two or more of the following components: (1) immunization education and promotion, (2) assessment and tracking of vaccination status, (3) referral of under-immunized school or child care center attendees to vaccination providers, and (4) provision of vaccinations. Additional components such as reduced client out-of-pocket costs, client incentives, and enhanced access to vaccination services may be provided. Organized child care centers include non-home day care, nursery or pre-school, and federal Head Start settings for children aged 5 years and younger. In most states, laws establishing vaccination requirements for school and child care center attendance require assessment, documentation, and tracking specific to each vaccine. Vaccination programs considered in this review either expanded the assessment and tracking process to other immunizations or conducted additional interventions. Vaccination programs are often collaborations between the school or child care center and local health departments, private healthcare providers, or community healthcare services.

### Task Force Finding (June 2009)

The Community Preventive Services Task Force recommends school and organized child care center-located vaccination programs based on strong evidence of effectiveness in increasing vaccination rates, and in decreasing rates of vaccine-preventable disease and associated morbidity and mortality. The updated Task Force recommendation is based on findings from 27 studies in which vaccination programs in schools or child care centers 1) provided vaccinations on site 2) were administered by a range of providers including school health personnel, health department staff, and other vaccination providers, 3) were delivered in a variety of different school and organized child care settings, 4) delivered one or more of a range of vaccines recommended for children and adolescents, and 5) included additional components such as education, reduced client out-of-pocket costs, and enhanced access to vaccination services. School- and organized child care center-located vaccination programs may be most useful in improving immunization rates among children and adolescents for new vaccines, and vaccines with new, expanded recommendations (such as the annual immunization for seasonal influenza) where background rates are likely to be very low and improvements in coverage are needed.

### Rationale

The Task Force finds strong evidence of effectiveness of vaccination programs in schools and organized child care centers based on their updated systematic review (1980-2008). The updated Task Force recommendation recognizes that, despite important differences between schools and child care centers, children in these settings are similar in their interactions with and exposures to large groups of children (and their caregivers) in communal locations over regular periods of time.

Our updated review includes 27 studies of vaccination programs in schools (24 studies) and organized child care centers (three studies). In 23 of the 27 studies, immunizations were provided on site and typically included educational materials, parental notification and consent forms, and additional opportunities to obtain the offered vaccination.

Sixteen studies with 19 study arms reported a common measurement of change, and observed an absolute median increase of 41 percentage points (IQI: 15 percentage points to 62 percentage points) in vaccination rates.

Eleven studies included in this review evaluated morbidity and mortality outcomes of immunization programs in schools (eight studies) and organized child care centers (three studies). Three studies observed reductions in the incidence rates of measles and hepatitis B following school vaccination programs. One study from Japan evaluated changes in mortality rates following the elimination of a national school-based influenza vaccination program and documented increases in excess mortality rates due to influenza and pneumonia among younger children. Four US trials of school influenza vaccination programs examined changes in self-reported influenza-like illness and rates of absenteeism. Results were mixed and overall reductions in absenteeism were small in magnitude. One trial of influenza vaccination in children attending US Navy-affiliated child care centers observed no reductions in febrile respiratory illness among the children receiving the immunization, but significant reductions in illness among other members of their households. Finally, two additional trials of influenza vaccination in children attending day care centers demonstrated reductions in flu-related episodes of acute otitis media.

The studies in this review evaluated programs conducted in Head Start centers, day care facilities, and elementary, middle, and high schools in both rural and urban settings. The Task Force considers the findings to be applicable to most populations attending schools and organized child care centers in the United States.

The vaccination programs in this review were conducted by a range of different vaccination providers including school health personnel, providers from the local health department, research staff, and community volunteers. In several studies, on site immunization services were provided by contracted vaccination providers from the community. The vaccines delivered included seasonal influenza, the hepatitis B series, MMR, and varicella. The Task Force considers the evidence to be applicable to the range of options for immunization provision, and for most vaccines recommended for children and adolescents.

Based on the available economic information, the Task Force finds that school-based vaccination interventions could be less expensive compared to immunizations provided in healthcare settings because of lower vaccine costs and the averted loss of parental income associated with children's clinic visits. There is some evidence of cost savings from school-based interventions because they result in increased vaccination rates, which in turn reduce healthcare utilization, lifetime loss of productivity for children, and parental loss of productivity associated with care for the sick child. However, there is need for more studies to adequately document these economic benefits for specific immunizations. Additional evidence is needed to inform an economic evaluation of programs conducted in organized child care centers.

Among potential additional benefits, provision of vaccinations through schools and organized child care centers can reduce the time spent by attendees and caregivers in obtaining recommended vaccinations, and may provide communities with an additional option to supplement vaccination services delivered through healthcare systems. Provision of vaccinations through schools and organized child care centers, for example, may be useful in achieving recommended immunization rates for seasonal influenza vaccine among children and adolescents.

Potential harms of these interventions include the possibility that providing immunizations in schools and child care centers may reduce regular contact with the primary healthcare provider. In addition, the provision of vaccinations in these settings without established channels for communication with healthcare providers or existing immunization

information systems may complicate subsequent determinations of client vaccination status. The Task Force identified no specific evidence on these potential harms in this review.

The Task Force notes additional barriers to the sustained implementation of vaccination programs in organized child care centers in the United States. Most, if not all, child care centers lack the resources, infrastructure, and staff to implement a vaccination program. Interventions in child care centers would depend upon a partnership with local health departments or community vaccination providers. Compared to many school settings, child care centers are smaller, more diverse, and scattered, reducing the likely efficiencies of on-site vaccinations. On the other hand, personnel at child care centers, with regular opportunities to interact with parents and caregivers, may be more successful at obtaining consent for vaccination.

The Task Force calls for more research of vaccination interventions in child care centers to provide additional information on implementation, impact, and economics of vaccination interventions in these settings. In addition, the Task Force suggests additional research on ways to sustain vaccination programs in schools and child care centers by addressing challenges with staffing and financing these interventions. Future research should also examine how programs can be best coordinated with vaccination providers in the community, local health departments, and immunization information systems while adhering to the requirements of the Family Education Rights and Privacy Act (FERPA).

*The data presented here are preliminary and are subject to change as the systematic review goes through the scientific peer review process.*

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## Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they 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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