The Impact of School-Located Influenza Vaccination Programs on Student Absenteeism: A Review of the US Literature

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Introduction

- Influenza outbreaks in schools can cause significant disruption when large numbers of children or staff become ill, often resulting in short-term school closures.1
- Current recommendations call for all children 6 months to 18 years of age to be immunized every year against influenza.2,3

School-based influenza vaccination (SLIV) programs are an efficient means of immunizing large numbers of school-aged children.

- Decreased student absenteeism is a major potential benefit of SLIV programs.

Objective

To provide a comprehensive overview of the available published data describing the impact of SLIV programs on school absenteeism.

Methods

- The National Library of Medicine PubMed database, the Ovid Nursing Database, and Medical Intelligence Solutions’ Knowledge Discovery Platform (New York, NY) were searched for medical journal articles and conference abstracts.
- Search terms were influenza AND vaccination OR immunization AND school (Figure 1).
- Publications that provided specific data regarding school absenteeism related to school-located influenza vaccination (SLIV) programs were identified through the PubMed search, was included subsequently published in a medical journal were also included in the review.4

Results

- 16 articles and 428 abstracts were identified in the initial search.
- 6 articles and 1 conference presentation provided specific data regarding school absenteeism (Table 1).
- Programs vaccinated 185 to 5315 students, 35% to 86% of those enrolled.
- The methods for measuring differences in student absenteeism varied.
- 6 studies examined control schools with no immunization program.
- 3 studies compared vaccinated with unvaccinated children in the same school.
- All studies measured total, all-cause absenteeism; 2 studies also measured absenteeism due to influenza-like illness.

Table 1: Summary of Studies Evaluating the Effect of School-Located Influenza Vaccination Programs on Student Absenteeism

<table>
<thead>
<tr>
<th>Study</th>
<th>Geographic Scope</th>
<th>Influenza Season</th>
<th>Vaccination Program (Number of Vaccinated Students)</th>
<th>School(s) With Vaccination Programs vs Control Schools</th>
<th>Vaccinated vs Unvaccinated Children</th>
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</thead>
<tbody>
<tr>
<td>1. Principi N, et al. (1997)</td>
<td>HF Hull &amp; Associates, LLC, St. Paul, MN, USA; MedImmune, LLC, Gaithersburg, MD, USA</td>
<td>1996-1997</td>
<td>100 schools (N=12,900)</td>
<td>100 schools: 85% in influenza season (P&lt;0.001)</td>
<td>35% reduction in total absenteeism (P&lt;0.001)</td>
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<td>2. King JC Jr, et al. (2006)</td>
<td>2 elementary schools (N=2717)</td>
<td>2005-2006</td>
<td>2 elementary schools</td>
<td>26% reduction in total absenteeism (P&lt;0.001)</td>
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<tr>
<td>3. King JC Jr, et al. (2008)</td>
<td>1 elementary school (N=127)</td>
<td>2005-2004</td>
<td>1 elementary school</td>
<td>40% reduction in total absenteeism (P&lt;0.001)</td>
<td></td>
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<tr>
<td>5. Davis DA, et al. (2006)</td>
<td>21 elementary schools (N=1705)</td>
<td>2005-2006</td>
<td>21 elementary schools</td>
<td>45% reduction in total absenteeism (P&lt;0.001)</td>
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<tr>
<td>6. Cook (2008)</td>
<td>2 elementary schools (N=381)</td>
<td>2007-2008</td>
<td>2 elementary schools</td>
<td>1.17% decrease in total daily absenteeism (P=0.001)</td>
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<td>7. Means DA, et al. (2006)</td>
<td>1 high school (N=131)</td>
<td>2006-2007</td>
<td>1 high school</td>
<td>35% (LAIV) increase in the number of those with ILI (P&lt;0.001)</td>
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</table>

Conclusions

- Multiple studies have demonstrated that SLIV programs can help reduce student absenteeism during the influenza season.
- SLIV programs may be able to help schools achieve their educational mission by decreasing student absenteeism due to influenza.
- Additional research into sustainable funding sources and the comprehensive effects of SLIV programs on students, families, staff, and the community is warranted.

References


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