Improving HCP vaccination rates in long-term care:
The Vaccination Initiative for Nursing Assistants and Aides (VINAA)

Cori L. Ofstead, MSPH
May 10, 2016

Disclosures

• The findings described reflect research conducted independently by Ofstead & Associates, Inc. and the Immunization Action Coalition unless otherwise stated

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• Pfizer Inc. did not have access to study data or participate in the development of this presentation
Research team and acknowledgements

- Co-Principal Investigators
  - LJ Tan, PhD
  - Cori L. Ofstead, MSPH
- Research team
  - Harry Wetzler, MD, MSPH
  - Mimi Amelang
  - Otis Heymann
  - Ellen Johnson
- Contracts and financial administration
  - Robin Van Oss
  - Lisa Mattson
- Acknowledgements
  - Pfizer External Medical Affairs
  - Chicago Department of Public Health

VINAA Study Goals and Activities

- Goals
  - Prevent influenza and pneumonia in LTCFs
  - Increase understanding of vaccine decision-making among HCPs
  - Improve vaccination rates among nursing staff (RNs, LPNs, CNAs)
- Activities
  - Baseline assessments (surveys, interviews, administrative data)
  - Development and implementation of customized interventions
  - Outcomes evaluation
HCP influenza vaccination rates nationally

<table>
<thead>
<tr>
<th></th>
<th>Hospitals</th>
<th>LTCFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black 2015*</td>
<td>90%</td>
<td>64%</td>
</tr>
<tr>
<td>Lee 2013</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Daughtery 2015</td>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>Person 2013</td>
<td>38%</td>
<td></td>
</tr>
</tbody>
</table>

*CDC national internet panel survey

Baseline nursing staff vaccination rates in study sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site A</td>
<td>47%</td>
</tr>
<tr>
<td>Site B</td>
<td>5%</td>
</tr>
<tr>
<td>Site C</td>
<td>75%</td>
</tr>
<tr>
<td>Site D</td>
<td>62%</td>
</tr>
<tr>
<td>Total</td>
<td>50%</td>
</tr>
</tbody>
</table>
### Study site characteristics

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Beds</th>
<th>Census*</th>
<th>Nursing staff*</th>
<th>Annual turnover</th>
<th>CMS quality rating*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site A</td>
<td>WI</td>
<td>133</td>
<td>80</td>
<td>75</td>
<td>85%</td>
<td>★★★☆☆☆</td>
</tr>
<tr>
<td>Site B</td>
<td>IN</td>
<td>183</td>
<td>100</td>
<td>85</td>
<td>105%</td>
<td>★★★★☆☆☆</td>
</tr>
<tr>
<td>Site C</td>
<td>IL</td>
<td>210</td>
<td>187</td>
<td>100</td>
<td>141%</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Site D</td>
<td>MN</td>
<td>268</td>
<td>260</td>
<td>258</td>
<td>25%</td>
<td>★★★★★★☆☆☆</td>
</tr>
</tbody>
</table>

*As of administrative data collection on March 31, 2014

### Nursing staff demographics at study sites

<table>
<thead>
<tr>
<th>Survey respondent demographics (%)</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td></td>
</tr>
<tr>
<td>CNA/RNA</td>
<td>65%</td>
</tr>
<tr>
<td>LPN</td>
<td>18%</td>
</tr>
<tr>
<td>RN</td>
<td>15%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>23%</td>
</tr>
<tr>
<td>African American</td>
<td>48%</td>
</tr>
<tr>
<td>Other</td>
<td>30%</td>
</tr>
<tr>
<td>Family members</td>
<td></td>
</tr>
<tr>
<td>Children (&lt;14)</td>
<td>54%</td>
</tr>
<tr>
<td>Elders (&gt;64)</td>
<td>12%</td>
</tr>
<tr>
<td>Have health insurance</td>
<td>80%</td>
</tr>
</tbody>
</table>
Nursing staff knowledge and beliefs about vaccine in study sites

- 31% never heard of pneumococcal vaccine (“pneumonia shot”)
  - 41% CNAs
  - 12% LPNs
  - 8% RNs
- Among unvaccinated HCPs:
  - 59% believe vaccines can cause influenza
  - 55% believe vaccines can cause serious side effects

Challenges found in study sites

- Lower than expected resident vaccination rates
- Low HCP vaccination rates (50%)
- Low vaccination rates among HCP’s family members (31%)
- Outbreaks of respiratory illness
  - Closed units and facilities
  - Increased staff workload
  - Expensive to contain and treat
  - Hospitalized staff
- High absenteeism due to respiratory illness (31%)
Significant gaps in vaccination programs at study sites

- No formal programs, goals, or policies for HCP vaccination
- Lack of educational programs
- Misconceptions about influenza and vaccination
- Resistance from vaccine-reluctant or anti-vaccination managers
- Inadequate record-keeping and tracking
- High turnover among managers and nursing staff
- Severe resource limitations

Study interventions implemented

- Management engagement
- Assistance with goal-setting and policy development
- Support for policy implementation
  - Informed declination
  - Vaccination as a condition of hire
  - “Vax or mask”
- Improved documentation and tracking
- Educational programs customized for long-term care
- Incentives and staff engagement
- Multiple vaccination opportunities
- Accountability and feedback
Example of worksheets for managers:
Goal setting and policy development

**Goal-setting**

1. Vaccination rates will be tracked for (select one):
   - Nursing staff only
   - All staff (including housekeeping, dietary, administration, etc.)

2. Vaccination rate goals:
   - 75% after mass vaccination kick-off event in mid-October
   - 95% by October 31st
   - 95% by December 10th
   - 95% for the influenza season overall (including anyone working in the facility Oct. – Mar.)

**Policy implementation**

Staff vaccination policy

1. Annual influenza vaccination offered free to all staff at work and (select one):
   - Strongly encouraged by management
   - Required unless a declination form is signed
   - Required as a condition of employment

2. Accepted reasons (select all that apply)
   - Personal reasons
   - Religious objection

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Example of tracking mechanisms:
Vaccination roster

<table>
<thead>
<tr>
<th>Hire Date (mo/day/yr)</th>
<th>Employee ID Number</th>
<th>Last Name</th>
<th>First Name</th>
<th>Age</th>
<th>Department</th>
<th>Role</th>
<th>Termination Date (mo/day/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vaccination status (Accepted/Declined) | Documented Vaccination | Location | Date of vaccination (mo/day/yr) | Vaccinator (on-site only) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onsite</td>
<td>Onsite</td>
<td>Location</td>
<td>Date of vaccination (mo/day/yr)</td>
<td>Vaccinator (on-site only)</td>
</tr>
<tr>
<td>Offsite</td>
<td>Offsite</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example of tracking mechanisms:
Vaccination gauge and rate calculator

How to use the vaccination rate gauge

Step 1. Enter the total number of staff at your facility in the yellow box below.
Step 2. Excel will calculate how many staff members correspond to each indicated percentage.
Step 3. Use these numbers to fill in the corresponding blanks on your vaccination roster.
Step 4. Update your vaccination gauge regularly and watch your progress!

Number of staff:
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%
Examples:

Educational posters with customized imagery for LTCFs

Nursing staff vaccination rates increased (p<.01)
Family member vaccination increased \( (p<.01) \)

<table>
<thead>
<tr>
<th>Year</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
<th>Site D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>38%</td>
<td>29%</td>
<td>30%</td>
<td>27%</td>
<td>32%</td>
</tr>
<tr>
<td>2015</td>
<td>44%</td>
<td>32%</td>
<td>49%</td>
<td>45%</td>
<td>44%</td>
</tr>
</tbody>
</table>

Data from 2014 survey, \( n = 347 \); 2015 survey, \( n = 323 \)

Absenteeism due to respiratory illness decreased \( (p<.01) \)

<table>
<thead>
<tr>
<th>Year</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
<th>Site D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>34%</td>
<td>15%</td>
<td>21%</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>2015</td>
<td>20%</td>
<td>16%</td>
<td>16%</td>
<td>30%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Data from 2014 survey; \( n = 347 \); 2015 survey; \( n = 323 \)
Key insights from the VINAA Study

• We can “move the needle” on HCP vaccination in LTCFs
• Vaccination program reduced absenteeism
• Policies, goals, and management engagement are critical
• Continued challenges include:
  ▪ Limited resources
  ▪ Competing priorities
  ▪ Staff turnover
  ▪ Entrenched misconceptions about vaccines
• Public policy and upstream interventions are needed

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References


