Influenza Vaccination in Long-Term Care Facilities in Maryland

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Background

• Death
  – Annual deaths from influenza ranges from 3,300 to 49,000 each year in United States from 1976 to 2007 \(^1\)
  – So far, the most effective way of preventing the flu is to get vaccinated each year \(^1\)

• Importance in Healthcare Personnel (HCP)
  – Health benefits to both workers and patients, including reduced flu-related complications and reduced risk of death

• Importance in long-term care HCP
  – Vulnerable patients and elderly population
  – Greater risk of developing severe flu-related complications and death
Maryland Health Care Commission

• As an independent regulatory agency for the state of Maryland, the Maryland Health Care Commission (MHCC) aims to address health system needs and provide accountable, accurate and timely information to policy makers, providers and the public.

• Since 2008, healthcare personnel influenza vaccination has been one of the quality care indicators prioritized by the MHCC in healthcare settings.
Research Objectives

• Objective 1: Evaluate and assess the effectiveness of current influenza vaccination programs for HCP in long-term care (LTC) facilities in Maryland
• Objective 2: Identify the barriers in the long-term care facilities that prevent them from achieving a high vaccination rate among HCPs
• Objective 3: Propose actionable prevention strategies to improve the vaccination rate for HCPs in LTC facilities
Methods

• Literature research
  – Keyword search for “influenza vaccination” “healthcare workers”

• State influenza vaccination survey data (2009 – 2014)
  – Hospitals and long-term care surveys conducted by MHCC from 2009 to 2015
  – Hospitals switched to CDC NHSN annual influenza vaccination survey in 2014
  – MHCC meetings and group discussions
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Current HCP vaccination status

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Maryland Stats</td>
<td>N/A</td>
<td>57.9%</td>
<td>65.1%</td>
<td>73.6%</td>
<td>79.3%</td>
</tr>
<tr>
<td>National Stats 2-6</td>
<td>20.1%</td>
<td>64.4%</td>
<td>52.4%</td>
<td>58.9%</td>
<td>63.0%</td>
</tr>
</tbody>
</table>

1. Influenza vaccination rate has improved from 57.9% in 2009 to 79.3% in 2014
2. Maryland NH influenza vaccination rate is higher than the national average
3. Maryland NH influenza vaccination rate is lower than the Maryland hospital average
4. Maryland NH influenza vaccination rate is well below the 90% Healthy People 2020 goal
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Major barriers to LTC HCP vaccination

1. Mandatory policy

<table>
<thead>
<tr>
<th>Maryland Statistics</th>
<th>2011-12</th>
<th>2012-13</th>
<th>2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of nursing homes with mandatory policy</td>
<td>43 (19.1%)</td>
<td>50 (22.4%)</td>
<td>72 (31.3%)</td>
</tr>
<tr>
<td>Plan to implement mandatory policy next influenza season</td>
<td>41 (18.2%)</td>
<td>33 (14.8%)</td>
<td>45 (19.6%)</td>
</tr>
<tr>
<td>No plan for mandatory policy</td>
<td>141 (62.7%)</td>
<td>141 (62.8%)</td>
<td>113 (49.1%)</td>
</tr>
</tbody>
</table>

Nursing homes with a mandatory policy (72/230) have average vaccination rate of 92.2% in 2013-14

Nursing homes with no mandatory policy (158/230) have average vaccination rate of 68.1% in 2013-14
Healthcare providers

• Two of the biggest nursing home healthcare providers have not adopted a mandatory influenza vaccination policy
  – Genesis (24 nursing homes in Maryland, 3803 employees in total, vaccination rate 64.4%)
  – ManorCare (12 nursing homes in Maryland, 1880 employees in total, vaccination rate 73.4%)
Major barriers to LTC HCP vaccination

2. Organizational challenges
   – High staff turnover rate
   – Availability and accessibility of vaccine for HCP
Major barriers to LTC HCP vaccination

3. Misconception
   - Knowledge and attitudes about influenza and the vaccine
   - Not perceive influenza as a significant risk
   - Differ among occupation

![Health care worker vaccination rates](image)

Assume influenza vaccination services are provided equally to all HCPs
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Strategies for improvement

• Encourage facility-wide mandatory influenza vaccination policy

Mandatory policy -> higher influenza vaccination rate

Note: red dots indicates NH influenza vaccination rate. Blue indicates the percentage of NHs with mandatory policy.
Confounding factors: peer competition, public attention, marketing goal, etc
Strategies for improvement (cont.)

• Provide free vaccinations on-site, multiple times a day for extended period of time
  – Address high turnover rate in nursing homes and availability/accessibility of vaccine for HCPs

• Provide on-site education and training programs for all employees
  – Address the mixed education levels of HCP in nursing homes
  – Impact HCPs’ knowledge and attitudes toward influenza and vaccine
Strategies for improvement (cont.)

- Address unique barriers and challenges in each facility to enhance vaccination rate

<table>
<thead>
<tr>
<th>Vaccination Rate</th>
<th>Number</th>
</tr>
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<tbody>
<tr>
<td>20%-30%</td>
<td>2</td>
</tr>
<tr>
<td>30% - 40%</td>
<td>11</td>
</tr>
<tr>
<td>40% - 50%</td>
<td>18</td>
</tr>
<tr>
<td>50% - 60%</td>
<td>18</td>
</tr>
<tr>
<td>60% - 70%</td>
<td>37</td>
</tr>
<tr>
<td>70% - 80%</td>
<td>34</td>
</tr>
<tr>
<td>80% - 90%</td>
<td>34</td>
</tr>
<tr>
<td>90% -100%</td>
<td>79</td>
</tr>
<tr>
<td>Total</td>
<td>230</td>
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- Top ten performer:  
  - Average vaccination rate 99.9%
- Bottom ten performer:  
  - Average vaccination rate 31.9%
Influenza vaccination strategies used by high performers and low performers are similar, except for a 30% difference in providing free vaccination for nonemployees. More research needed. Additional research project can be conducted to study the frequency and intensity of the vaccination program provided on-site and the education materials distributed in nursing homes.
Conclusion

- **Policy**: Encourage mandatory policies in Maryland nursing home facilities by publicly reporting this information along with vaccination rates by facility
- **Education**: Educate HCP on the benefits associated with influenza vaccination and risk to their patients and themselves if they don’t get it
- **Accessibility**: Make vaccine accessible and available at the worksite at convenient times and at no cost
Conclusion (cont.)

• **Barrier:** Address unique barriers and challenges in each facility to enhance vaccination rate. Collaborate with high performers for best practices that could be implemented at other facilities.

• **Incentive:** Government agencies can provide recognition for facilities with excellent HCP influenza vaccination program.
Public Health Significance

• Assist MHCC by researching, analyzing and providing recommendations for future improvement in LTC HCP influenza vaccination rates

• Overall goal: Increase HCP influenza vaccination rate to 90% to create the higher standards for quality and safety that workers and patients deserve
References

1. **CDC.** Estimated influenza illnesses and hospitalizations averted by influenza vaccination—United States, 2012-13 influenza season. MMWR 2013 Dec 13;62(49):997-1000


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THANK YOU

TIME FOR QUESTIONS