Nursing Homes in States Providing Infection Control Training or Encouraging Infection Reporting Have Reduced Infection Control Deficiency Citations

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Introduction

• Infections are a leading cause of death among nursing home (NH) residents.
• Centers for Medicare and Medicaid Services (CMS) monitors NH infection control practices as part of an annual inspection survey.
• Between 2000-2007, the proportion of NHs receiving an infection deficiency increased, with 15% of NHs receiving one on average annually.
• Hence, there is a need for improved infection control practices.
• State Departments of Health (DOH) pursue varying activities to improve infection control practices in NHs.
• Effects of these activities have not been evaluated.

Methodology

To evaluate the associations of specific state DOH activities to reduce HAIs in NHs with infection control citation rates

Data Collection:
• Information regarding state DOH activities to reduce infections in NHs was systematically collected from DOH websites 11/2012 - 01/2013
• Annual inspection data in Certification and Survey Provider Enhanced Reporting (CASPER) system were used for 1-year period 2013-2014
• Area Health Resource File (AHRF, county-level) data also used

Analysis:
• Multivariable logistic regression to assess relationship between infection control deficiency citations and 3 state DOH activities: Advisory Group or Collaborative, Infection Control Training or Materials, Mandatory or Voluntary Infection Reporting
• Controlled for facility and market characteristics
• Similarly assessed relationship of overall care quality citations to these three state DOH activities

Results

<table>
<thead>
<tr>
<th>State DOH Activity</th>
<th>% of NHs in a State with This Activity</th>
<th>Infection Control Citations</th>
<th>Quality of Care Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>OR 95% CI p-value</td>
<td>OR 95% CI p-value</td>
</tr>
<tr>
<td>Advisory Group or Collaborative</td>
<td>70.4%</td>
<td>0.91 0.70,1.12 0.434</td>
<td>1.19 0.85,1.54 0.231</td>
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<tr>
<td>Infection Control Training or Materials</td>
<td>91.3%</td>
<td>0.67 0.48,0.86 0.006</td>
<td>0.80 0.45,1.45 0.308</td>
</tr>
<tr>
<td>Mandatory or Voluntary Infection Reporting</td>
<td>9.7%</td>
<td>0.61 0.49,0.75 &lt;0.001</td>
<td>0.75 0.55,0.95 0.036</td>
</tr>
</tbody>
</table>

Discussion

• Inverse relationship between state DOH infection control training and infection control citations
• Consistent with existing literature suggesting low infection control training and understanding among NH staff
• Mandatory or voluntary HAI reporting has strong inverse association with IC citations
• HAI reporting has weaker relationship with quality citations
• More research is needed to understand if association between citations and infection reporting represents impact of reporting or overall focus on NH care quality

Implications

• Infection control training and materials specific to NHs may help clinicians improve care quality and/or reduce infection deficiency citations.
• Policymakers and state DOHs should provide or increase IC training to NH providers.
• Further research should determine what state DOH-generated IC training methods and materials are most effective and whether infection reporting in NH is improving care.

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