We assessed use of key practices to prevent device-associated infections:

- Data from the Centers for Disease Control (CDC) indicate that device-associated infection rates have declined.
- Numerous initiatives have focused on reducing device-associated infections by U.S. acute care hospitals from 2005 to 2013 to better understand factors associated with this decline.

**Survey response rate** was approximately 70% for all 3 study years.

**Selected hospital characteristics** across years are shown in Table 1.

**Significant increases** in the percent of hospitals that reported using hospitalists as well as the percent reporting participation in a collaborative effort to reduce HAI.

### METHODS

**Study Design:** Surveys to infection preventionists at a national random sample of ~600 U.S. acute care hospitals in 2005, 2009, and 2013. Study sample is designed to represent the full population of non-federal acute care hospitals with ≥ 50 hospital beds and an ICU.

**Study Measures:** Use of evidence-based practices to prevent the 3 most common device-associated infections: central line-associated bloodstream infection (CLABSI), ventilator-associated pneumonia (VAP), and catheter-associated urinary tract infection (CAUTI).

**Statistical Analysis:** Using sample weights, we estimated the percent of hospitals reporting regular use (a score of 4 or 5 on a scale from 1, never use to 5, always use) of prevention practices from 2005 to 2013.

### RESULTS

- **Survey response rate** was approximately 70% for all 3 study years.
- **Selected hospital characteristics** across years are shown in Table 1.
- **Significant increases** in the percent of hospitals that reported using hospitalists as well as the percent reporting participation in a collaborative effort to reduce HAI.

### Table 1: Hospital descriptive information (weighted, mean or proportion with 95% CI)

<table>
<thead>
<tr>
<th>Hospital Characteristics</th>
<th>2005</th>
<th>2009</th>
<th>2013</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of acute care beds</td>
<td>220,5 (216.3-242.9)</td>
<td>220,8 (214.4-242.5)</td>
<td>222,2 (216.6-247.9)</td>
<td>0.29</td>
</tr>
<tr>
<td>Number of adult ICU beds</td>
<td>NA*</td>
<td>23.1 (19.8-26.3)</td>
<td>21.4 (19.4-23.4)</td>
<td>0.23</td>
</tr>
<tr>
<td>Affiliated with a medical school</td>
<td>22.9 (19.2-26.9)</td>
<td>24.4 (20.6-28.7)</td>
<td>25.8 (21.8-30.3)</td>
<td>0.05</td>
</tr>
<tr>
<td>Have hospitalists (%)</td>
<td>57.2 (52.0-62.2)</td>
<td>75.3 (70.5-79.6)</td>
<td>85.3 (81.1-88.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Involved in collaborative effort to reduce HAI (%)</td>
<td>41.6 (36.9-46.6)</td>
<td>69.0 (63.0-72.7)</td>
<td>82.1 (77.6-85.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Number of full-time equivalent infection preventionists/100 hospital beds</td>
<td>0.67 (0.63-0.71)</td>
<td>0.80 (0.75-0.85)</td>
<td>0.91 (0.80-1.01)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Lead infection preventionists certified in infection control (ICC)</td>
<td>50.9 (51.9-61.8)</td>
<td>53.0 (53.7-63.8)</td>
<td>56.4 (50.1-62.5)</td>
<td>0.88</td>
</tr>
</tbody>
</table>

* Not asked in 2005

### CONCLUSIONS

- **Use of most recommended practices** for preventing CLABSI, VAP, and CAUTI increased significantly over time.
- The greatest increase from 2005 to 2013 were use of:
  - an antimicrobial dressing for preventing CLABSI;
  - an antimicrobial mouth rinse for preventing VAP; and
  - catheter removal prompts for preventing CAUTI.
- **CAUTI prevention in general continues to lag behind prevention efforts targeting other device-associated infections.**

### IMPLICATIONS

- **U.S. hospitals have responded** to the call to reduce infection by increasing their use of key recommended practices with nearly universal adoption of maximum barrier precautions, chlorhexidine site disinfectant and semi-recumbent positioning.
- Increased use of prevention practices is likely a key reason for declining rates for some device-associated infections, such as CLABSI.
- Persistent vigilance is needed to ensure sustained improvement and additional strategies may be required, given an apparent lag in CAUTI prevention efforts.

### Key Findings:

- **Antimicrobial dressing use** for preventing CLABSI increased from 25% to 54% to 78% (p<.001).
- **Antimicrobial mouth rinse use** for preventing VAP increased from 41% to 58% to 79% (p<.001).
- **Use of catheter removal prompts** for preventing CAUTI increased from 9% to 20% to 53% (p<.001).