Each year in the U.S., 1.7 million patients acquire a healthcare associated infection (HAI) during their hospital stay, and an estimated five percent die.

Rising rates of HAIs, electronic record keeping, and state mandated surveillance requirements are changing the role of infection preventionists. This report provides a cross-sectional snapshot of the structure and resources of infection control departments at California hospitals in 2008 and the implementation of processes to prevent device associated infections in ICUs.

Results are from a web-based survey of infection control department staff conducted in October – December 2008. A follow-up survey is planned for Spring 2010.

- Over half (53%) of departments had an MD epidemiologist, but only 19% of these epidemiologists worked full-time in infection control.

- Infection control departments often had access to additional staffing in the form of secretarial (50%), data management (36%), or other (21%) assistance.

- Almost half (48%) of infection control departments had an independent budget.

- A majority of departments (82%) were led by a full time department director.

- Most (81%) Infection Preventionists were nurses; half had less than five years experience.

- 207 infection control departments contributed to the study, a 59% response rate.

- The average size of participating hospitals was 237 beds, slightly larger than non-participating hospitals.

- One fifth of hospitals were affiliated with a medical school.
In California as well as nationally, staffing rates were negatively associated with hospital size, indicating that staffing might be more efficient at larger hospitals.

Infection Preventionists (IPs) spent 37% of their time on surveillance, consistent with SHEA recommendations. Administrative duties and meetings were the second largest time commitment (14%), leaving only 11% of IPs’ time available for staff education. Staff time use did not vary with hospital size, staffing rate, or presence of electronic surveillance systems. Infection Preventionists spent 48% of their time in the department offices and 32% in the wards or with patients.

44 Hospitals (23%) had Electronic Surveillance Systems (ESS)

Overall, satisfaction with ESS was high: staff felt ESS contributed to improved patient outcomes and added to their surveillance capabilities. Infection prevention departments reporting high levels of administrative support were more likely to have ESS as well as high employee satisfaction with ESS. ESS were primarily used to generate reports and data summaries (84%), particularly for administrative purposes (61%).

Many hospitals were not using ESS to its’ full capacity: only 36% used ESS for data mining.
Presence of an infection prevention policy was inadequate to ensure implementation.

- A majority of ICUs had policies in place to prevent central line associated blood-stream infection (CL-BSI) and ventilator – associated pneumonia (VAP).

- Most hospitals did not have any of the selected policies in place to prevent catheter associated urinary tract infections (CAUTI) in their largest ICU.

- Hospital that had CAUTI policies reported extremely poor implementation rates.

Implementation at the bedside for all device associated infection prevention processes remains problematic in most ICUs.

Healthcare Associated Infection Rates in ICUs

Rates of HAIs vary widely but remain a threat to patient safety in many California hospitals.

- Infection rates in California ICUs were comparable to national NHSN rates for 2008.

- Most infection control departments reported monitoring central line associated blood stream infections (96%) and ventilator associated pneumonia (95%) in the ICU. However, only 69% of ICUs monitored catheter associated urinary tract infections.

<table>
<thead>
<tr>
<th>Device Associated Infection Rates in California ICUs</th>
<th>Rate = infections / 1000 device days</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Line Associated Blood Stream Infections</td>
<td>2.3 (3.4)</td>
<td>1.1</td>
<td>0 - 19.4</td>
<td></td>
</tr>
<tr>
<td>Ventilator Associated Pneumonia</td>
<td>2.5 (4.2)</td>
<td>0</td>
<td>0 - 19.2</td>
<td></td>
</tr>
<tr>
<td>Catheter Associated Urinary Tract Infection</td>
<td>3.1 (3.5)</td>
<td>1.7</td>
<td>0 - 11.0</td>
<td></td>
</tr>
</tbody>
</table>

ICU data is from the largest medical, surgical or med/surg ICU at each hospital
The Changing Role of the Infection Preventionist: About the Study

The study aims are to evaluate changes in infection preventionists’ roles and department organization respective to changing demands on infection prevention, including institutional and technological changes and new mandatory reporting requirements in California hospitals.

Data collection consists of two online surveys: the first to establish baseline values (Fall 2008), and a follow-up survey in March — April of 2010.

This study has implications for IP roles, organization, and infection prevention activities. We hope to provide information that can improve use of evidence-based policies for the prevention of HAIs and IP efficiency.

The reliability of study results requires high participation of infection preventionists.

Future Participation

- One infection preventionist from each hospital will be asked to complete a web-based survey for their department during March-April 2010.
- Weekly lotteries will be held with APIC prizes to encourage participation.
- All California acute-care hospitals serving the general population are encouraged to participate in the study. It is not necessary to have participated in the first survey in order to contribute to the second.
- If your infection prevention department would like to participate but you do not receive an email invitation containing a link to the survey in March, please contact the research team.

The research team would like to thank all those who participated in the 2008 survey.
We hope you will contribute to the follow-up survey in Spring of 2010!

For more information, please contact
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Study Coordinator Sarah Jordan (212-342-4171 or skj2111@columbia.edu).

"The Changing Role of the Infection Preventionist" study is conducted by the Columbia University School of Nursing, in partnership with Association of Professionals in Infection Control and Epidemiology (APIC). This study has been approved by Columbia University’s Human Subject Institutional Research Review Board. This publication was designed by Sarah Jordan.