Reliable Design of Infection Prevention Programs

By Sue Barnes, RN, BSN, CIC, and Maureen Spencer, RN, BSN, M.Ed, CIC

Introduction

Currently there is no published guideline or community standard for the way in which infection preventionists (IPs) should spend their time each day in hospitals and ambulatory-based settings. The Infrastructure Report and the APIC IP Competency Model both help to address this, building on the SENIC study, though none offers a level of guidance that would support reliable design for the time constructs of IPs. The way in which IPs spend their time varies widely among facilities and across the continuum of care, driven in part by regulations, by the priorities of the IP's manager, and by the strengths and interests of the IP.

In the absence of a guideline, the goal of this commentary is to offer a best practice model for structuring the day of an IP based on the APIC IP Competency Model, and for staffing a qualified and successful IP department/team. A sample organizational chart is also offered (see Figures 1-3). We intend for this paper to be used to inform executives in hospitals and ambulatory-care facilities in order to support the priorities and scope of infection prevention and control programs, and to ensure that these programs are adequately resourced to protect relevant clinical imperatives.

Background

Currently there is no evidence based or “community standard” guideline for the way in which IPs should spend their time each day in hospitals and ambulatory-based settings. The APIC IP Competency Model suggests that there should be four key areas of focus, but without any descriptive direction supporting reliable design for day-to-day operations. The continually evolving role of the IP includes prevention and control of current and emerging infections and diseases, and an understanding of new clinical and data mining technologies. It requires increased focus on infection rate data due to reimbursement policies and mandatory public reporting of infections. The Infrastructure Report and the APIC IP Competency Model both help to address this role expansion, building on the SENIC study. However, none of these offer a level of guidance that would support reliable design for the day to day operations of Infection Prevention and Control professionals.

The way in which IPs spend their time varies significantly from hospital to hospital and across the continuum of care, though in this commentary we will focus only on hospitals. This variation is driven in part by regulations, by the priorities of local hospital executives and supervisors of IPs, and by the strengths and interests of the IPs. In addition exponentially increasing mandates for public reporting of infections, and non-reimbursement laws have resulted in positioning of IPs in many facilities as primarily data managers, below the level of their peers (e.g., directors of nursing and quality). The APIC re-branding of the infection prevention and control professional’s title to “infection preventionist” may have further contributed to this trend, since “IP” is commonly considered subordinate to “director.”

In the absence of a published guideline, the goal of this commentary is to offer a best practice model for structuring the day of an IP based on the APIC IP Competency Model. In addition, a best practice model for staffing a qualified and successful IP department/team is offered, with an associated sample organizational chart (see Figures 1-3). Our overarching goal is to support reliable design within the IP community, as well as to inform executives in hospitals and ambulatory-care facilities regarding the priorities and scope of infection prevention and control programs. In this way we hope to support optimal resourcing and utilization of IP programs, and ultimately patient safety.

Discussion

The elements of an effective Infection Prevention and control program have been dramatically transformed over the course of the last four decades. The SENIC study concluded that effective programs should include hospital-wide infection surveillance, policies and procedures to correct patient-care practices which predispose patients to infection, and reporting surgical wound infection rates to practicing surgeons. In addition, one “IC nurse” was recommended...
Infection prevention and control priorities have evolved over the past several decades, staffing needs have increased proportionately, though not all hospitals have kept pace. Additional diversion of IP time due to delegation of unrelated responsibilities to IP staff such as employee health, emergency preparedness, communicable disease reporting, oversight of the sterile processing department, oversight of the hemodialysis unit, “isolation police,” etc. adds to the primary clinical priorities of the IP in many hospitals. And, although no published studies address it, in order to perform successfully in this expanding role, many IPs are required to be on call and carry a pager 24/7. This is typically not compensated call time, and can involve a range of added responsibility from simply carrying a pager with few or no calls, to actively working to respond and react to calls for much more than eight hours and 40 hours per week. This uncompensated call is not sustainable and can be one of many challenges to retention of specialized, experienced IPs.

Two decades after the SENIC study, the Association for Professionals in Infection Control and Epidemiology (APIC) and the Society for Healthcare Epidemiology of America (SHEA) joined forces to develop the next iteration of the SENIC study with the Infrastructure Report. This report provided recommendations for an effective infection prevention and control program organized in five categories: managing critical data and information; developing and recommending policies and procedures; intervening directly to prevent infections; educating and training of healthcare workers, patients, and nonmedical caregivers; and resources.

The IP Competency Model published widely several years ago reflects a similar, but slightly different set of categories: Leadership, Performance improvement and Implementation Science, Infection Prevention and Control, and Technical. This guidance is especially important in an era where media and political posturing has been observed to commonly generate knee-jerk responses by healthcare executives. IPs are often required to focus primarily on the current “concern” (e.g., SARS, Ebola), to the exclusion of their program and associated clinical priorities, which can compromise patient safety. A similar phenomenon is observed relative to the exponentially increasing demand for publically reported infection data which often leads to healthcare executives directing IPs to focus (exclusively or primarily) on data management. Electronic tools, including automated infection detection/data mining software programs, can assist IPs in screening large numbers of medical records to identify potential healthcare associated infections, clusters, and outbreaks of pathogens of concern. These tools can expedite, streamline, improve accuracy, reduce human error, and reduce inter-rater reliability issues associated with manual infection surveillance. However, it is important to understand that these systems are expensive, and can result in the unintended consequence of identifying many more performance improvement areas for IP teams, which can ironically increase work load and resourcing requirements.

**Figure 1: Proposed Sample Staffing Model IP Program for a 300 bed hospital and/or oversight of 10 outpatient clinics**

<table>
<thead>
<tr>
<th>POSITION</th>
<th>REPORTS TO</th>
<th>QUALIFICATIONS</th>
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<tbody>
<tr>
<td>Director Infection Prevention and Control Program (peer to other departmental Directors, e.g. Director of Pharmacy, Director of Nursing, Director of Quality) Salaried – not organized labor</td>
<td>Chief Executive Officer and Medical Director or other senior leader (for sufficient understanding of clinical priorities)</td>
<td>Graduate degree in Healthcare – ideally Masters in Infection Prevention and Control and Epidemiology, Public Health, or other CIC mandatory</td>
</tr>
<tr>
<td>Manager and/or Coordinator Infection Prevention and Control Program Salaried – not organized labor</td>
<td>Director Infection Prevention and Control</td>
<td>Bachelor degree in Laboratory Science, Nursing, Public Health, other CIC mandatory Manager CIC preferred Coordinator</td>
</tr>
<tr>
<td>Data Analyst for infection rate data collection, collation, report creation; infection prevention process measure data collection, collation, report creation. Or outsource via surveillance vendor</td>
<td>Director Infection Prevention and Control</td>
<td>Associate degree or equivalent experience</td>
</tr>
<tr>
<td>Clerical support</td>
<td>Director Infection Prevention and Control</td>
<td>Associate degree or equivalent experience</td>
</tr>
<tr>
<td>Physician Partner</td>
<td>Chief Executive Officer and Chief of Service</td>
<td>Infectious Diseases, Training and/or experience in Epidemiology and Infection Prevention and Control</td>
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**Figure 2: Proposed Sample Organizational Chart**

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*AS THE PROFESSION OF INFECTION PREVENTION AND CONTROL HAS EVOLVED OVER THE PAST SEVERAL DECADES, STAFFING NEEDS HAVE INCREASED PROPORTIONATELY, THOUGH NOT ALL HOSPITALS HAVE KEPT PACE.*
Conclusion

This commentary is offered to aid in informing healthcare executives regarding the imperative of a balanced and clinically directed Infection Prevention and Control program in hospitals. It further offers a best practice model for the minimum members of an effective IP team, a set of recommended actions/functions for day to day operations of the hospital based IP and a sample organizational chart (see Figures 1-3). These are based on the APIC IP Competency Model as the underpinning, and are informed by extensive informal surveying of frontline IPs as well as several published studies.4-7 A more current time in motion study for this clinical profession to better inform a guideline such as this, is much needed. The over-arching goal of this document is to support patient safety via reliable design of infection prevention and control programs nationwide.

Looking forward, similar guidance would be useful for corporate IP teams serving multi-hospital systems, as well as infection prevention and control programs in ambulatory-based facilities including ambulatory surgery centers, long-term acute care Facilities (LTCFs) and medical office buildings where minor surgical (e.g., Mohs procedures) and non-surgical procedures (e.g., flexible endoscopy and interventional radiology) are performed.  

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For references, see the online version of this article at www.infectioncontroltoday.com