

## **Healthcare Associated Infections Know No Boundaries: A View Across the Continuum of Care**

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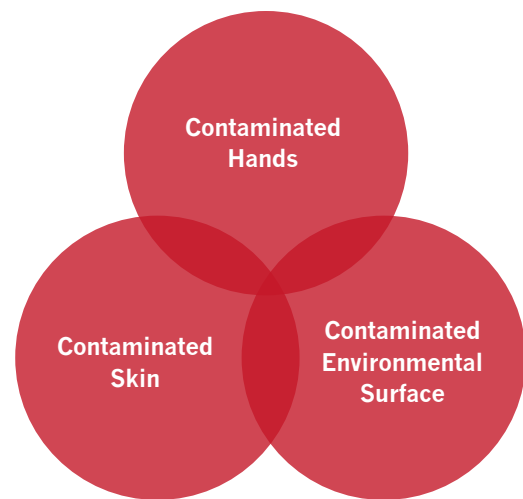
### Background

According to the US Centers for Disease Control and Prevention, Healthcare Associated Infections (HAI's) account for at least 722,000 infections in US acute care hospitals annually, resulting in roughly 75,000 deaths. More than half of these HAI's occur outside of the traditional intensive care unit setting. One in twenty-five hospitalized patients will contract a preventable Healthcare Associated Infection<sup>1</sup>. Given the advances of modern medicine, these infections can be prevented through strict adherence with evidence-based practices and executive championship for reducing HAI's.

Infection Prevention as a specialty is reflective of the Institute for Healthcare Improvement's Triple Aim. The Triple Aim is the core tenant of this new era of healthcare reform, and aims to reduce costs of care, improve the health of populations, and improve the experience of care<sup>2</sup>. Healthcare delivery is transforming continuously, and there is a shift to the outpatient environment, which includes primary care, ambulatory care and surgery, urgent care, dialysis, and home care settings. With this shift in patient flow, there are new challenges to maintaining infection prevention practices and adhering to evidence-based recommendations<sup>3</sup>.

Infection Preventionists face a challenging task to meet the day to day requirements of the many regulatory requirements that exist with public reporting of HAI's in this day and age. The US Centers for Disease Control and Prevention (CDC) have identified hand hygiene as the single most important intervention to reduce the transmission of infection. Clinical studies have also demonstrated repeatedly the role that contaminated environmental surfaces play in transmission of infection in healthcare facilities<sup>4</sup>. The most influential approach to reduce the transmission of infection is to establish a multi-faceted infection prevention program that encompasses all disciplines within the facility, as well as the latest evidence-

based standards from organizations such as the CDC focusing on the three most common sources of infection transmission which are contaminated hands (of both the healthcare provider and patient), contaminated environmental surfaces, and contaminated skin of the patient.



**Figure 1: Sources of Healthcare Associated Infections (HAI's)**

Given the patient shift from the traditional inpatient settings to the outpatient environment, many healthcare settings do not have the benefit of ready access to an Infection Preventionist. Healthcare reform aims to provide healthcare in non-acute care settings to reduce costs and the patient experience. Recently, multiple outbreaks have been directly linked to outpatient healthcare settings and long term care. Specific attention should be paid to preventing reuse of needles and syringes and cleaning and disinfecting noncritical items such as glucometers, pulse oximeters, and blood pressure cuffs<sup>5</sup>. It is not unusual for patients to receive healthcare services from a variety of providers in multiple settings, especially those with comorbidities. That being said, training in infection prevention and control must be offered to all healthcare

providers, including those in outpatient settings where infection prevention resources are scarce.



**Figure 2: Continuum of the Future of Healthcare Delivery Services**

Hospitals and Ambulatory Surgery Centers are licensed through the state department of health, and generally seek accreditation from various organizations such as The Joint Commission. Both organizations place emphasis on infection prevention and control, specifically hand hygiene, respiratory etiquette, environmental surface disinfection, skin and soft tissue infections, and prevention of transmission of communicable diseases in accordance with the current peer-reviewed clinical guidelines. Other outpatient healthcare environments, however, such as Primary Care, Dental, and Dialysis environments do not require such registration with the state department of health nor independent accreditation. Many outpatient facilities do not seek external, independent accreditation due to a variety of factors, most notably cost and staff resources. Accreditation is currently available from the following healthcare organizations<sup>6</sup>:

- The Joint Commission (TJC)
- Accreditation Association for Ambulatory Health Care, Inc. (AAAHC)
- Healthcare Facilities Accreditation Program (HFAP)
- Det Norske Veritas Healthcare, Inc. (DNV)

Development of an Infection Prevention Program can be a

daunting and extremely laborious project. There are many resources for development of a program, but this article will serve as a blueprint for the major components of a solid Infection Prevention and Control program that will protect not only the facility’s patients, but also its visitors and more importantly the healthcare providers responsible for the daily care of the patients. According to a Director of Infection Prevention and Quality for a large, national acute care health system, “infection prevention knows no boundaries, and therefore our approach must reflect this phenomenon. We must be readily able to adapt and change just as microbes do through natural evolution, and infection prevention as a process rests in the hands of every single employee within the healthcare institution.” Historically in healthcare, infection prevention has been centered with the Infection Preventionist, and now the responsibility is shifting to the bedside, frontline members of the healthcare delivery team. Each healthcare professional involved in the delivery of care has a responsibility to practice basic infection prevention practices such as hand hygiene and the disinfection of the healthcare environment. Patients are now encouraged to “Speak Up” and voice any concerns that they have to their healthcare team as part of The Joint Commission’s new advocacy program<sup>7</sup>.

## General Elements of Infection Prevention

### Obtaining Administrative Support and Resources

The key to any successful initiative within healthcare is to garner administrative support prior to initiating the intervention. By securing commitment from the healthcare executive team, many obstacles will be eliminated during program implementation. It is critical to portray an accurate depiction of your plan, goals and objectives, as well as identify resources that will be required for not only initial creation of the Infection Prevention program, but also for continued maintenance to ensure the any interventions made are sustainable. For any infection prevention initiative to be successful and also sustainable, C-Suite support is absolutely necessary.

### Assembling an Infection Prevention Team

The key to a compliance with Infection Prevention and Control policies is staff involvement and accountability. When creating the initial program, securing the support of not only senior leadership within the facility, but also the bedside clinicians

and support staff is critical to success. The more staff commitment one secures from the beginning of the process, the more compliance will be demonstrated. Staff members should each have responsibilities for Infection Prevention. Ensuring a multi-disciplinary Infection Prevention committee is assembled will increase the compliance with basic Infection Prevention policies and procedures. The team should also include representation from non-clinical personnel such as Dietary and administrative staff members. By creating a sense of personal accountability through the inclusion process, a 360 degree approach to Infection Prevention will be created.

### **Surveillance**

Surveillance of patients allows for prompt identification of potential outbreak situations, as well as other abnormal infectious disease patterns within the facility. Whole house surveillance may be not only impractical, but also not necessary, especially with outpatient settings. To determine which infections the Infection Preventionist should monitor routinely, a formal risk assessment should be conducted to determine the most significant risks to the facility based several factors including the demographic served, geographic location, and most prevalent microorganisms. Based on the findings of this risk assessment, surveillance should be implemented accordingly. Finally, electronic surveillance systems are available for use if necessary based on the patient diagnoses<sup>8</sup>. Caution, however, should be exercised in relying on technologies without addressing the underlying clinical practice needs.

### **Communicable Disease Reporting**

With the recent outbreak of H1N1 Infections across the globe, the immediate reporting of certain communicable diseases is more important than ever. Most states within the US have extensive public reporting laws and regulations governing which illnesses must be reported to the appropriate public health authorities, and in what time they are required to be reported to officials. This is also true for non-acute care setting such as Long Term Care facilities. It is recommended that the Infection Preventionist establish a relationship with the respective Public Health authorities so that any possible signs of significant communicable illness or outbreak can be promptly reported. Public Health personnel also serve as a valuable resource for pandemic preparedness and analysis of disease outbreaks<sup>9</sup>.

### **Outbreak Investigations**

Because the frequency of Multi-Drug Resistant Microorganism outbreaks is increasing in US hospitals, the Infection Preventionist should have a written plan for initiating an Outbreak Investigation, as well as the respective roles of all clinical providers and administrative staff. A formal policy will ensure a thorough investigation of the outbreak if performed. It is critical to involve Public Health personnel at the first sign of a suspected outbreak, so that they may assist with laboratory and epidemiological analysis. When performing an investigation, collect as much information about the symptoms of the patients, commonalities among the cohort such as last known location, meals, etc. so that epidemiological patterns can rapidly be established. During the outbreak, clinical staff should utilize the appropriate personal protective equipment (PPE) for the pathogen suspected. The Centers for Disease Control and Prevention (CDC) issues guidelines for Isolation and the Prevention of Multi-Drug Resistant Organisms (MDRO) that will assist the Infection (IP) Preventionist in taking the appropriate precautions<sup>10</sup>.

### **Policy and Procedure Development**

To ensure consistent compliance with established guidelines, thorough written policies should be in place to guide staff members in handling all Infection prevention and control matters. Policies should reflect the most current recommendations and guidelines from subject matter experts such as CDC. Policies should be concise and provide clear direction to staff, as well as cite the standard and/or guideline that are the basis for the recommendation. Policies and procedures should be reviewed at least on an annual basis. Feedback from staff should also be solicited and utilized during the updates to ensure that the policies are not only evidence-based, but also practical for staff members to adhere to. The appropriate supplies, i.e. gloves, mask, and gowns, should also be available if listed as required items within any policies. Concise policies, access to the appropriate equipment required in the policy, and routine updates to the documents will ensure compliance from staff members.

### **Regulatory Requirements**

Facilities must comply with many regulatory requirements from accreditation bodies such as The Joint Commission (TJC), Centers for Medicare and Medicaid (CMS), the Occupational Safety and Health Administration (OSHA),

and state authorities. These regulations are continuously evolving, and therefore the Infection Preventionist must participate in routine continuing educational activities in order to maintain a complete knowledge of these requirements. Many organizations such as the CDC offer online continuing education opportunities such as webinars on hot topics such as Multi-Drug Resistant Organisms such as MRSA and Clostridium difficile amongst others. The US Environmental Protection Agency (EPA) and the US Food and Drug Administration (FDA) also play an active role in regulating the approval and/or registration of most infection prevention products such as hand sanitizers, environmental disinfectants, and skin antiseptics.

### **Educational Support and Resources/Professional Development**

Infection Prevention across the continuum of healthcare delivery is a significant Patient Safety topic. Topics such as Bloodborne pathogens and Tuberculosis Transmission Prevention are required on an annual basis by OSHA. In addition, updates to CDC guidelines, respiratory precautions, Multi-Drug Resistant Organisms, and reporting of communicable diseases to public health should also be reviewed on an annual basis to ensure clinical staff members have a thorough understanding of their respective roles and responsibilities in Infection Prevention<sup>11</sup>.

The role of Infection Prevention is constantly expanding, and with the addition of new regulatory requirements from the Centers for Medicare and Medicaid Services, this field will only increase in importance. The time to develop a comprehensive Infection Prevention Program is now. A unified, aggressive Infection Prevention program across all healthcare facilities will assist you in your efforts to Targeting Zero Healthcare Associated Infections. Infection Prevention efforts must be championed by executive leadership in order to be sustained.

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