# VANTAGEPOINT®

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## Healthcare-associated Infections: Taking Action to Enhance Safety

Healthcare-associated infections, commonly referred to as HAIs, develop when bacteria, viruses, fungi or other pathogens invade the blood and/or tissues of patients while they are receiving treatment for other medical conditions. HAIs are directly associated with surgical procedures, use of medical devices, heavy antibiotic dosing, immunocompromised conditions, and contact with infected patients and staff, while underlying causes include substandard hygiene and over-prescribing of antibiotics.

According to a multistate survey conducted several years ago, 722,000 HAIs occur in acute care hospitals annually, resulting in 75,000 patient deaths.[1] The annual rate exceeds 1 million HAIs when other settings across the U.S. healthcare system are counted.[2] In terms of financial impact, the estimated direct medical cost associated with HAIs is reported at $10 billion annually.[3]

In response to high infection rates and related costs, various initiatives aimed at modifying incentives and increasing accountability and transparency have been launched over the last decade, including the following:

- In 2008, the Centers for Medicare & Medicaid Services (CMS) imposed new regulations denying payment for certain conditions – including three common HAIs – that develop during a hospital stay. CMS also publicly reports the infection rates of individual hospitals through its Hospital Compare website.

- The Centers for Disease Control and Prevention (CDC) have established the National Healthcare Safety Network, in order to identify types of HAIs, facilitate accurate reporting of infection rates, and permit accurate tracking and comparison over time.

- In 2015, The Joint Commission implemented a National Patient Safety Goal for accredited hospitals aimed at reducing the prevalence of HAIs (see Goal 7, page 8).

- As of August 2016, 34 states and the District of Columbia require public reporting of HAI rates.

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1 Centers for Disease Control and Prevention, HAI Data and Statistics. Based on 2011 data from multistate survey.
2 Agency for Health Care Research and Quality, Health Care-Associated Infections. Citing the same 2011 study data.
3 Barnet, S. "25 Things for Healthcare CFOs to Know about HAIs," *Becker's Hospital Review*, Oct. 5, 2015.

A RISK MANAGEMENT RESOURCE FOR HOSPITALS AND HEALTH SYSTEMS

As these and other quality-focused interventions take effect, HAI rates appear to be declining significantly.[4] However, new antibiotic-resistant strains continue to emerge, and HAIs remain an abiding safety risk for hospitals and other organizations with respect to both patient injury and associated financial and reputational costs.

To help healthcare organizations reduce the dangers, reimbursement consequences and liabilities associated with HAIs, this edition of *Vantage Point*® lists common types of acquired infections and discusses the four cornerstones of an effective infection control program: universal precautions, environmental hygiene, antibiotic stewardship and safe injection practices.

## COMMON HAIs

The following types of dangerous, hard-to-treat infections are especially frequent in hospital settings:

- *Catheter-associated urinary tract infections,* due to incorrect placement and maintenance of indwelling catheters, as well as failure to monitor and control the duration of catheter use.

- *Central line-associated bloodstream infections*, due to incorrect placement and maintenance of intravascular catheters.

- *Clostridium difficile infections,* due to antibiotic overuse and the destruction of healthy intestinal bacteria, which are required for normal digestion. "C-diff" is easily spread from patient to patient.

- *Methicillin-resistant* Staphylococcus aureus *(MRSA) bacteremia,* due to patient contact with contaminated exam room surfaces or medical devices, or with the hands of infected healthcare personnel, resulting in antibiotic-resistant pathogens entering the bloodstream.

- *Surgical site infections,* due to contaminated medical implants and/or poor sterile technique during surgical procedures, particularly those involving the abdomen.

- *Ventilator-associated pneumonia,* due to cross-contamination via an endotracheal tube, leading to infection of the lower respiratory tract.

In-service education of front-line staff should focus on prevention and management of the above-listed infections. The following targeted CDC resources are available for training purposes:

- Catheter-associated urinary tract infection.
- Central line-associated bloodstream infection.
- *Clostridium difficile* infection.
- MRSA infection.
- Surgical site infection.
- Ventilator-associated pneumonia.

## UNIVERSAL PRECAUTIONS

Infection control policies should be reviewed and, if necessary, updated annually, based on outcomes and staff/provider input. Staff training should be aligned with organizational policy and reinforce the importance of the following universal biosafety practices, which are designed to minimize the risk of clinical cross-contamination:

- *Hand hygiene* before and after contact with patients, bodily fluids and soiled materials; after removing gloves and using the restroom; and whenever hands are visibly soiled. (Hand hygiene guidance should also be offered to patients and family members via signage and live demonstrations of washing techniques.)

- *Protective equipment* (e.g., gloves, gowns, masks, eyewear) whenever there is a reasonable chance of contact with blood, bodily fluids, secretions or excretions, or with any items contaminated by these fluids.

- *Respiratory etiquette,* e.g., properly covering the mouth and nose when coughing or sneezing and requiring individuals with a communicable disease to wear a surgical mask.

- *Safe injection practices* when handling needles and sharps, in order to prevent transmission of bloodborne pathogens and other occupational needle-stick injuries.

- *Proper disposal of medical waste* to ensure that infectious materials are appropriately separated, labeled, stored and transported.

All infection control training sessions should be documented, including dates, names of attendees, proficiency testing results and certifications earned.

The importance of universal infection control precautions cannot be overstated. Failure to implement these actions, practices and training requirements may subject facilities to escalating infection rates, declining quality and patient satisfaction levels, and potentially damaging publicity. Risk managers can help enhance patient safety and staff performance by working with infection control specialists and observing practice patterns on clinical units.

4 According to a report issued by the **Agency for Healthcare Research and Quality**, the rate of HAIs in U.S. acute care hospitals dropped by 21 percent between 2010 and 2015. In fact, **CDC research** shows that use of best practices in intensive care units and elsewhere can reduce certain types of acquired infections by 70 percent.

On a related note, inadequate infection control practices are linked to both the acquisition and transmission of MRSA and other multi-drug-resistant organisms by healthcare workers. If a persistent cluster of infections occurs in one patient care area and efforts to identify the source are unsuccessful, administrators may opt to test employees for the presence of germs via a culture swab of the nasal cavities, open wounds or sputum/bodily fluids. If any carriers are discovered, they should be evaluated for universal precaution compliance. Those who cannot maintain good hand hygiene or present evidence of uncontained wound drainage should be excluded from the workplace. For additional information on MRSA management in the healthcare setting, consult the CDC guidelines.

## ENVIRONMENTAL HYGIENE

Preventing the spread of drug-resistant microbes and other pathogens throughout the facility requires an aggressive approach to environmental hygiene, including the following actions:

- *Educate staff members and physicians about risks associated with frequently contaminated objects and surfaces*, including exam tables, pads, positioners, computer keyboards and lab coats, as well as less commonly suspected culprits, such as privacy curtains, supply closets, room telephones and remote control units.
- *Train housekeeping personnel to thoroughly scrub walls, floors and surfaces at regular intervals* with a high-level disinfectant, following the manufacturer's instructions.
- *Test surfaces for bacteria and other microbes* on a scheduled basis.
- *Reduce unnecessary injections* by promoting the use of suitable oral alternatives.
- *Cover furniture, mattresses and pillows with waterproof material* that can be wiped clean easily.
- *Soak surfaces with disinfectant in compliance with the manufacturer's instructions*, rather than lightly spraying and wiping, which may simply spread microbes around.

The following additional containment strategies should be incorporated into written policy and clinical practice:

- *Perform regular risk assessments*, documenting corrective measures taken in response to noted deficiencies. (The CDC offers a wide range of HAI Prevention Toolkits designed to facilitate infection measurement and surveillance.)
- *Limit use of non-critical equipment – such as blood pressure cuffs, stethoscopes and EKG wires – to single patients*, and provide disposable options, when possible.

- *Appoint an infection control specialist to oversee HAI surveillance activities* and to ensure consistency in tracking infection rates and documenting follow-up actions.
- *Maintain appropriate staff-patient ratios and regularly review workloads*, thus minimizing staff members' temptation to take clinical shortcuts that may compromise patient safety.

## ANTIBIOTIC STEWARDSHIP

Antibiotic overuse has increased bacterial drug resistance and led to the proliferation of MRSA and similar pathogens in healthcare settings. Hospitals, clinics and other organizations can address this serious problem by crafting written protocols designed to ensure that antibiotics are prescribed only when medically indicated.

The CDC recommends that all acute care hospitals implement an antibiotic stewardship program (ASP) containing the following seven core elements: 1) leadership commitment, 2) accountability, 3) drug expertise, 4) action, 5) tracking, 6) reporting and 7) education. The gap analysis tool on pages 4-7 outlines the strategic goals of an ASP as articulated by the CDC. It is designed to help organizations detect vulnerabilities and determine whether gaps exist between recommended practices and current measures taken to reduce antibiotic overuse.

## INJECTION PRACTICES

Unsafe injection practices and the misuse of medication vials can result in outbreaks of various diseases, including HIV and hepatitis B and C. In 2009, the CDC Safe Injection Practices Coalition initiated the One and Only Campaign, aimed at heightening awareness of injection-related risks in the clinical setting. The campaign's multimedia toolkit contains a range of educational materials for patients and providers in different healthcare settings.

For additional information about the risks of inappropriate needle reuse and strategies to eradicate injection-related contamination, see CNA *AlertBulletin*®, "Injection Safety: Preventing Needle and Syringe Reuse," which was republished in 2013.

Hospitals and other healthcare facilities should be places of healing, not hazard. By focusing on infection control and antibiotic usage restraint, organizations can significantly reduce HAIs, combat microbial drug resistance, and minimize both liability exposure and non-reimbursable costs.

## Gap Analysis Tool: Antibiotic Stewardship Program

This tool is intended to help healthcare organizations evaluate their progress toward creating an effective antibiotic stewardship program and communicating related goals and responsibilities, as well as monitoring and reporting antibiotic prescription practices and utilization patterns.

| PROGRAM GOALS AND GAP ANALYSIS QUESTIONS | YES/NO | STATUS |
|---|---|---|
| **LEADERSHIP COMMITMENT**<br>**Goal: Demonstrate support for and commitment to safe and appropriate use of antibiotics.** | | |
| 1. *Is the organization's commitment to monitoring and enforcing antibiotic stewardship practices articulated in written policy*, and are these policies disseminated to prescribing clinicians, pharmacists and nursing staff? | | |
| 2. *Is the need to eliminate unnecessary prescribing of antibiotics communicated to patients*, as well as family members and the general public? | | |
| 3. *Are antibiotic stewardship goals and policies incorporated into Medical Staff rules and regulations, job descriptions and assigned tasks* for physicians, hospitalists, nurse practitioners, other prescribing practitioners and pharmacists? | | |
| 4. *Are antibiotic use and resistance data reviewed* in Quality Assurance (QA) and Performance Improvement Committee meetings? | | |
| 5. *Is there a top-down commitment from Medical Staff leadership and administrators to monitor compliance with antibiotic stewardship policies* and to track follow-up on adverse events involving antibiotics? | | |
| 6. *Is there a written policy regarding public release of infection rate statistics*, which incorporates a legal review process to address potential regulatory and liability concerns? | | |
| **ACCOUNTABILITY**<br>**Goal: Promote the role of physicians, other prescribing practitioners, nursing and pharmacy in implementing and overseeing antibiotic stewardship activities.** | | |
| 1. *Have the Medical Staff established standards regarding antibiotic use* for all providers with prescribing authority? | | |
| 2. *Are antibiotic prescription patterns reviewed at reappointment*, and are outliers addressed through the formal peer review process? | | |
| 3. *Is compliance with antibiotic stewardship policies evaluated* during Medical Staff re-privileging? | | |
| 4. *Does the organization employ an infection control specialist* who is responsible for … | | |
| ▪ Overseeing adherence to written standards governing antibiotic use? | | |
| ▪ Reviewing antibiotic use data, including drug starts and stops? | | |
| ▪ Monitoring adherence to evidence-based criteria for the evaluation and treatment of infections? | | |
| ▪ Tracking infection patterns to identify resistant organisms? | | |
| ▪ Reporting findings to QA committees and ultimately to the governing body on a regular basis? | | |
| 5. *Are decision-making pathways available to guide nursing staff and providers* when assessing, monitoring, communicating and documenting patients' need for and utilization of antibiotics? | | |

| PROGRAM GOALS AND GAP ANALYSIS QUESTIONS | YES/NO | STATUS |
|---|---|---|
| **ACCOUNTABILITY (CONTINUED)**<br>**Goal: Promote the role of physicians, other prescribing practitioners, nursing and pharmacy in implementing and overseeing antibiotic stewardship activities.** | | |
| 6. *Are pharmacy support staff involved in antibiotic stewardship and quality assurance activities*, including facility-wide clinical education, medication regimen review and reporting of utilization data? | | |
| 7. *Do laboratory personnel help enhance antibiotic prescription practices* by … | | |
|     ▪ Identifying antibiotic-resistant organisms and alerting providers and staff? | | |
|     ▪ Educating staff about appropriate diagnostic tests to detect specific pathogens? | | |
|     ▪ Reporting regularly on the antibiotic susceptibility of organisms isolated in cultures? | | |
| **DRUG EXPERTISE**<br>**Goal: Foster collaborative relationships with pharmacists and others who are trained in antibiotic stewardship.** | | |
| 1. *Are infection control specialists and pharmacists trained in antibiotic stewardship principles* and certified by established organizations, such as Making a Difference in Infectious Diseases (MAD-ID) and the Society of Infectious Diseases Pharmacists (SIDP)? | | |
| 2. *Has a stewardship program leader been designated*, and is he or she a physician, epidemiologist, hospitalist or pharmacist? | | |
| 3. *Does the antibiotic stewardship program (ASP) have a dedicated staff* distinct from the Pharmacy and Therapeutics Committee, if staffing levels permit? | | |
| 4. *Are clinicians, department heads and ancillary services (e.g., pharmaceutical pharmacy and laboratory) actively recruited to champion the ASP* and its efforts to reduce and improve antibiotic use? | | |
| 5. *Are infection control specialists and hospital epidemiologists consulted when devising protocols* for reporting, auditing and analyzing infection-related data? | | |
| 6. *Does the laboratory department produce "antibiograms"* (i.e., annual reports summarizing facility-wide antibiotic susceptibility patterns), in order to improve antibiotic use? | | |
| 7. *Are antibiotic stewardship protocols and related information integrated into electronic health records* in the form of prompts, decision-support software and reference materials? | | |

| PROGRAM GOALS AND GAP ANALYSIS QUESTIONS | YES/NO | STATUS |
|---|---|---|
| **TAKE ACTION**<br>**Goal: Implement policies and procedures designed to improve antibiotic use.** | | |
| 1. *Has the organization developed algorithms to assist practitioners in assessing patients with suspected infections* and ordering confirmatory diagnostic tests? | | |
| 2. *Is there a standard assessment and communication tool for patients suspected of having an infection*, and is it used correctly and consistently? | | |
| 3. *Are there evidence-based antibiotic selection recommendations for common conditions*, such as community-acquired pneumonia, urinary tract infection, intra-abdominal infection, skin and soft tissue infection, and surgical prophylaxis? | | |
| 4. *Do antibiotic prescribing protocols for inpatient and ambulatory settings include documentation of dose, duration and clinical indication*, in order to ensure that antibiotic use is reviewed and modified or discontinued in a timely manner? | | |
| 5. *Are "time out" prompts incorporated into electronic drug-ordering formats* to ensure that clinicians assess the continuing need for and choice of antibiotics, especially when they are used empirically? | | |
| 6. *Does the "time out" protocol require clinicians to document answers to the following questions* within 48 hours of initiating an antibiotic: | | |
|    - Does this patient have an infection that will respond to antibiotics? | | |
|    - If so, is the antibiotic type, dose and route of administration correct? | | |
|    - Can a more targeted antibiotic or alternative intervention be used to treat this infection? | | |
|    - How long is the patient expected to need the antibiotic? | | |
| 7. *Do certain antibiotics require prior authorization from an infectious disease specialist* due to their high cost, potential toxicity and/or spectrum of activity (e.g., anaerobic, atypical and/or Gram-negative)? | | |
| 8. *Have pharmacy-driven interventions designed to regulate antibiotic use been implemented*, e.g., oral antibiotic substitutions, dose adjustments for renal insufficiency, time-sensitive automatic stop orders, drug interaction alerts? | | |
| 9. *Are the antibiotic agents listed in the medical formulary continually reviewed* for both safety and effectiveness? | | |
| **TRACKING DATA**<br>**Goal: Measure at least one antibiotic-related process and outcome.** | | |
| 1. *Are patient healthcare information records audited to track new antibiotic starts* and evaluate documentation of clinical assessment, antibiotic selection and prescribing practices? | | |
| 2. *Are documented follow-up actions promptly taken* whenever deficiencies are noted in patient records? | | |
| 3. *Is antibiotic use tracked on a monthly basis*, and are results reported in accordance with state law? | | |
| 4. *Are antibiotic outcomes monitored*, including adverse drug events and infections involving *C. difficile* and antibiotic-resistant organisms? | | |
| 5. *Are the costs associated with antibiotic use tracked*, in order to quantify cost savings resulting from stewardship program initiatives? | | |

| PROGRAM GOALS AND GAP ANALYSIS QUESTIONS | YES/NO | STATUS |
|---|---|---|
| **REPORTING**<br>**Goal: Report antibiotic-related data clearly and consistently, and inform prescribing clinicians, nursing staff and others about antibiotic use and drug resistance patterns.** | | |
| 1. *Does the organization regularly report information on antibiotic use and drug-resistant organisms to doctors, nurses and clinical staff,* including microbiology culture data and clinical process changes? | | |
| 2. *Is this reported information analyzed,* and are findings incorporated into Medical Staff QA measures? | | |
| 3. *Are antibiotic use and outcome data reported to the Centers for Medicare & Medicaid Services* in conformity with the Hospital Inpatient Quality Reporting Program, state law and other regulations? | | |
| 4. *Does the organization utilize the Centers for Disease Control and Prevention's Antimicrobial Use and Resistance Module,* which facilitates data compilation and reporting to the agency's National Healthcare Safety Network? | | |
| 5. *Do staff monitor and report antibiotic-related adverse events,* using standard methods and formats? | | |
| 6. *Do providers receive annual feedback on individual prescribing practices and compliance with antibiotic stewardship guidelines,* as well as relevant comparison data from other providers? | | |
| **EDUCATION**<br>**Goal: Provide educational resources to clinicians, nursing staff, patients and families about antibiotic resistance and ways to improve antibiotic use.** | | |
| 1. *Does the organization emphasize the need to reduce antibiotic use during orientation of all front-line clinical staff,* including physicians, physician assistants, nurse practitioners, nurses and pharmacists? | | |
| 2. *Is instruction on hand and environmental hygiene provided to all relevant parties,* including not just staff but also patients and family members? | | |
| 3. *Are staff members issued annual updates on recommended antibiotic prescribing practices,* as well as drug resistance and infectious disease management? | | |
| 4. *Are providers, staff and patients reminded of the critical importance of appropriate antibiotic use* via posters, pamphlets, emails, social media, e-pocket guides, face-to-face workshops and other means? | | |
| 5. *Are educational materials and resources regarding infection control catalogued and archived* in accordance with document retention guidelines? | | |
| 6. *Do clinical pharmacists participate in educational efforts,* and are they readily available for antibiotic therapy consultation? | | |

# CNA Risk Control Services

**ONGOING SUPPORT FOR YOUR RISK MANAGEMENT PROGRAM**

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