APIC
Association for Professionals in Infection Control and Epidemiology

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Centralized Healthcare-Associated Infection Surveillance Programs in Acute Care Health Systems:

PERSPECTIVES FROM INFECTION PREVENTION AND CONTROL (IPC) LEADERS

About APIC

The Association for Professionals in Infection Control and Epidemiology (APIC) is the leading professional association for infection preventionists (IPs) with more than 15,000 members. Our mission is to advance the science and practice of infection prevention and control. APIC advances its mission through patient safety, education, implementation science, competencies and certification, advocacy, and data standardization. Visit us at apic.org.

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Acronyms and Abbreviations

ABUTI	asymptomatic bacteremic urinary tract infection
AHA BLS	American Heart Association Basic Life Support
AJIC	American Journal of Infection Control
APIC	Association for Professionals in Infection Control and Epidemiology
AU/AUR	Antimicrobial use/ antimicrobial use and resistance
BMT	bone marrow transplant
BP	blood pressure
BPA	Best Practice Advisories (a type of clinical decision support in an electronic health record system)
BRST	breast infection or mastitis
BSI	bloodstream infection
CAUTI	catheter-associated urinary tract infection
CBGB	coronary artery bypass graft with both chest and donor site incisions
CBGC	coronary artery bypass graft with chest incision only
CDC	Centers for Disease Control and Prevention
CDI; C. diff	Clostridioides difficile infection
CIC	Certification in Infection Control
CLABSI	central line-associated bloodstream infection
CMS	Centers for Medicare & Medicaid Services
CO	community-onset
CO-HCFA	community-onset healthcare facility-associated
COLO	colon surgery
CP-CRO	carbapenem-producing/ carbapenem-resistant organism
CRA	carbapenem-resistant Acinetobacter baumannii
CRAN	craniotomy
CRE	carbapenem-resistant Enterobacterales
CSEC	cesarean section
CSP	centralized surveillance program
CVA	costovertebral angle
DBP	diastolic blood pressure
DOE	date of event
ECMO	extracorporeal membrane oxygenation
EHR	electronic health record
ESBL	extended-spectrum beta-lactamases
FTE	full-time equivalent
FUSN	spinal fusion
FX	open reduction of fracture
GA	gestational age
GIT	gastrointestinal infection
H1N1	swine flu
HA	healthcare-associated; hospital-acquired
HAC	hospital-acquired condition
HAI	healthcare-associated infection
HER	herniorrhaphy
HIPAA	Health Insurance Portability and Accountability Act

HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
HO	hospital-onset
HPRO	hip prosthesis
HYST	hysterectomy surgery
IAB	intraabdominal infection, not specified elsewhere, including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, retroperitoneal, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere
ID	infectious disease
IP	infection preventionist
IPC	infection prevention and control
IPPS	Inpatient Prospective Payment System
IPS	Infection Prevention Society
IQR	Inpatient Quality Reporting
IRR	interrater reliability
IT	information technology
IWP	infection window period
KPRO	knee prosthesis
LAM	laminectomy
LCBI	laboratory-confirmed bloodstream infection
LPN	licensed practical nurse
MBI	muscular barrier injury
MDRO	multidrug-resistant organism
MRSA	methicillin-resistant Staphylococcus aureus
MRSA BSI	methicillin-resistant Staphylococcus aureus bloodstream infection
NA	not applicable
NHSN	National Healthcare Safety Network
NICU	neonatal intensive care unit
PALS	Pediatric Advance Life Support
PHI	protected health information
PNEU	non-ventilator-associated pneumonia event
PNU	pneumonia
POA	present on admission
PSC	patient safety component
Pt	patient
RIT	repeat infection timeframe
RN	registered nurse
SBP	systolic blood pressure
SSI	surgical site infection
SUTI	symptomatic urinary tract infection
UA	urinalysis
UC	urine culture
UTI	urinary tract infection
VAE	ventilator-associated event
VRE	vancomycin-resistant Enterococci
WBC	white blood cell count
WHO	World Health Organization

Introduction

BY JULIE M. RICHARDS, MSN, RN, CIC, FAPIC AND KATHLEEN MCMULLEN, MPH, CIC, FAPIC, FSHEA

Infection prevention and control (IPC) in healthcare has existed for decades. However, it seems that the IPC profession gets spotlighted largely when public health emergencies occur. Some examples of public health emergencies are the human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) discovery in the 1980s, Ebola, swine flu (H1N1), and, most recently, the COVID-19 pandemic. Infection preventionists (IPs) ensure that healthcare personnel and healthcare organizations do everything possible to prevent the spread of infections.[1] IPs also specialize in identifying healthcare-associated infections (HAIs) in healthcare. HAIs are infections that patients get while or soon after receiving health care.[2] Investigating and preventing HAIs is a principal job function of all IPs.

Some IPC departments have researched the strategy of centralizing or consolidating HAI surveillance to improve accuracy and efficiency. Their findings suggest that implementing a centralized surveillance program (CSP) can have significant benefits. A CSP likely increases the validity of surveillance data and, more importantly, it increases the amount of time that facility IPs can dedicate to activities that promote HAI prevention, such as performing IPC observations, educating and consulting with personnel, creating and revising IPC policies and procedures, and assisting other committees.

Introducing a CSP for hospital HAIs is pivotal to enhancing patient safety and public health outcomes. Traditionally, surveillance for HAIs has been a manual and time-consuming process. A centralized system that maximizes the use of information technology resources facilitates uniform collection, analysis, and reporting of infection data across the healthcare organization, enabling early detection of trends and potential outbreaks. The uniformity of this system ensures that IPs at healthcare organizations can apply guidance and requirements from the Centers for Disease Control and Prevention's National Healthcare Safety Network (NHSN), thereby promoting standardized HAI definitions and criteria. Standardized information, in turn, fosters better IPC practices and allows IPs to benchmark their healthcare organization's performance against national or regional standards.

Establishing a successful CSP requires a robust technology infrastructure capable of handling the vast data generated by hospitals to identify HAIs. This infrastructure should include electronic health record integration, secure data storage, and, potentially, analytic tools for processing and interpreting infection data using defined criteria. Data-mining systems can assist IPs in detecting potential HAIs by providing real-time alerts of possible or confirmed infections. Hospitals must have the necessary technology and trained personnel to accurately and promptly report data. The CSP should also be designed to ensure that private patient information is handled securely and data are anonymized where necessary.

A successful CSP also depends on developing and applying clear guidelines and standardized protocols for reporting HAIs within the facility and to NHSN and other public health authorities. These protocols must define what constitutes an infection, how data should be collected, and the timelines for reporting.

An equally important key to CSP success is ongoing training and education for both facility IPs and CSP personnel. Healthcare organizations must invest in training and education efforts so facility IPs and CSP personnel can maintain high reporting standards and stay informed about protocol updates. Regular audits and feedback loops are also necessary to ensure compliance and identify areas for improvement in the surveillance system.

This guide provides information for implementing CSPs. The first step in creating this guide was identifying seasoned IPs as authors for each section. These contributors developed sections based on current research and the implementation of CSPs at facilities.

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Scope of a Centralized Surveillance Program

BY MICHELLE W. KING, MT(ASCP), MPH, CIC

A centralized surveillance program (CSP) can make the workflow of the infection prevention and control (IPC) department more efficient and cost-effective. Centralized surveillance may help alleviate issues related to infection preventionist (IP) staffing shortages, consistent healthcare-associated infections (HAI) reporting, and increasing IPC demands in healthcare facilities. The traditional surveillance methods for HAIs are manual, time-consuming, and prone to error and subjective interpretation. Manual collection of clinical information suffers from the premise that "the more you look, the more you find," and this method has limited interrater reliability when applying case definitions.[1] IRR involves having multiple raters assess the same set of items and then comparing how the raters rated each item. Implementing an IRR program can assist the IPC department in improving surveillance, standardization, and confidence, offering a path for continuous improvement in healthcare. IRR is discussed in a later chapter of this guide.

Currently, the Centers for Medicare & Medicaid Services (CMS) have conditions of participation (CoPs) that apply to most acute care hospitals in the United States. These CoPs include the incidence of HAIs at the hospital, among other measures of the quality of care. CMS calculates HAI measures using infection data from charts, reports, and other sources. The database that collects these HAIs is operated by the National Healthcare Safety Network (NHSN). IPs enter data into the NSHN database on the following HAI measures: central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), ventilator-associated event (VAE), surgical site infection (SSI), colon surgery (COLO), hysterectomy surgery (HYST), methicillin-resistant *Staphylococcus aureus* bloodstream infection (MRSA BSI), and *Clostridioides difficile* infection (CDI). In addition, many states have mandatory reporting requirements for HAIs. Some healthcare facilities do not participate in CMS reimbursement but will still have mandatory HAI reporting. The IP must collaborate with the facility's compliance department, which is crucial in interpreting and implementing regulatory requirements, to determine the organization's HAI requirements. HAI surveillance will be the focus of our scope for a CSP.

Strengths and Weaknesses of Centralized Surveillance

Reviewing the strengths and weaknesses of a CSP versus a traditional surveillance model helps determine the quality improvement value of the program. In a conventional surveillance model, each IP performs surveillance of all the HAIs from their assigned areas in a healthcare facility. In the CSP model, designated individuals do all the HAI surveillance and reporting for the healthcare facility, whereas facility IPs focus on promoting and supporting IPC initiatives throughout the organization; this arrangement enhances the overall effectiveness of these initiatives. A CSP seems best suited to larger facilities with multiple IPs on staff.[2]

The following are strengths of a CSP:

- Methods for case investigations and reporting HAIs can be standardized, with more consistent results across cases.
- Interrater reliability increases.
- The program is cost efficient.[3]
- Use of data abstractors may reduce the surveillance workload for IPs.[4]
- HAI surveillance and mandated reporting can continue during disruptive events (pandemics, census surges, natural disasters, etc.).[5]
- Facility IPs can focus their time on harm-reduction activities, such as unit-based rounding, collaborative projects, professional development, and other activities.

The following are weaknesses of a CSP:

- Local IPs may lose some skills in identifying an HAI using NHSN criteria due to not using this skill as often.
- CSP staff may lose interest in surveilling only one HAI type.
- Local IPs are unaware of the facility outcomes and may feel disconnected from units if they are not the ones researching the potential infection and reporting it.
- Nursing unit directors may not know which staff member (the local IP or the CSP staff) to discuss all types of HAIs.
- Staff coverage is more difficult if IPs and CSP staff are specialized and not cross-trained.

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Communication

BY BETH R. WALLACE, MPH, CIC, FAPIC

Communication among team members is critical when implementing a centralized surveillance program (CSP). This is true whether the CSP is located at the facility where healthcare is delivered or if CSP personnel are off site. With today's technology, members of the CSP team and facility infection preventionists (IPs) can collaborate and communicate effectively even if they are separated by many miles.

After a CSP is implemented, facility IPs will continue to play a pivotal role in the surveillance of healthcare-associated infections (HAIs) as they will review findings from the CSP and collaborate on decisions such as whether an infection should be reported as an HAI. It is important that their role in surveillance is recognized and appreciated by their colleagues in the CSP. Consistent, clear, and timely communication facilitates trust. Inconsistent, vague, and delayed communication undermines confidence, and such communication problems may lead the facility team to second-guess the surveillance work done by the CSP.

When establishing a CSP, the CSP team and facility IPs should agree upon communication expectations. For example, both the CSP staff and the facility IPs should have the same expectations about the following:

- What tools/forms will be used to communicate surveillance findings
- Timelines for analyzing infection cases and communicating the findings
- Criteria to determine whether an infection meets the definition of an HAI
- Who will initiate communication in specific types of situations
- How feedback will be given and received
- How notifications are communicated to organization stakeholders when an HAI is identified

An identified process for resolving disagreements regarding infection case findings is critical. This process may involve the whole team coming together to discuss the infection events and decide on the appropriate action, but it should be clear to all participants in the process who is responsible for making the final determination. Communication must occur whether the CSP staff are on-site or off-site. It is hoped that a CSP will expedite event identification, but this advantage can be lost if communication is not punctual. Timely, proactive communication of events by the CSP to the facility IPs is crucial. For example, when running or reviewing NHSN reports, facility IPs never want to be caught off guard by

unexpected infection rates or trends. Proactive communication from the CSP will reassure the facility IPs and give them confidence in the effectiveness of the CSP. Timely event notification also empowers facility IPs to promptly investigate incidents and facilitate swift and effective infection prevention and control actions.

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State Regulatory Requirements

BY STEVEN J. SCHWEON, RN, MPH, MSN, CIC, LTC-CIP, CPHQ, FSHEA, FAPIC

The Centers for Disease Control and Prevention (CDC) defines a state mandate for data reporting as "a state legislative or regulatory requirement (enacted by the state's government or promulgated by a state agency) requiring hospitals (and other healthcare facilities) in the state's jurisdiction to report HAIs to the National Healthcare Safety Network (NHSN)".[1] Infection preventionists (IPs) protect against HAI transmission by identifying and reporting HAIs to ensure accurate and precise analysis with the outcome data.

To understand state surveillance requirements, it is helpful to first gain a national perspective. The Deficit Reduction Act of 2005 (DRA) authorized the Secretary of Health and Human Services to identify hospital-acquired conditions (HACs) that "...could reasonably have been prevented through the application of evidence-based guidelines."[2] Under this law, CMS would not reimburse hospitals for treatment of these conditions if they were not present on admission. This was the first time Medicare reimbursement was linked to healthcare quality. The DRA was followed in 2010 by the Patient Protection and Affordable Care Act of 2010,[3] which further linked Medicare payment to quality outcomes by requiring hospitals to report certain HAIs to CMS through CDC's NHSN,[4] and established Value-Based Purchasing and Hospital-Acquired Condition (HAC) Reduction Programs to provide incentives or penalties based on hospital quality performance. The goal of these programs was to encourage hospitals to implement optimal care practices to reduce their HAI rates and improve patient safety.

Hospital quality metrics are a set of standards developed to quantify healthcare processes, patient outcomes, and organizational structures. As a result, the CMS HAC Reduction Program is a Medicare value-based purchasing program that determines hospital payments based on how they perform on certain measures, including infection prevention. The program encourages hospitals to implement best practices to reduce HAI rates and improve patient safety. Since January 2011, CMS has required that acute care hospitals paid under Medicare submit HAI data to CDC's NHSN.

Although the requirements have evolved over time, as of FY 2025, the HAC Reduction Program specified five required HAI surveillance measures to be reported to NHSN:

- Central line-associated bloodstream infection (CLABSI)
- Catheter-associated urinary tract infection (CAUTI)
- Surgical site infection (SSI) for abdominal hysterectomy and colon procedures
- Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia
- *Clostridioides difficile* infection (CDI).[5]

The validity and reliability of the submitted NHSN surveillance data, the publication of these data in the public domain, and their connection with infection trending and hospital reimbursement are factors that shape a healthcare institution's reputation with the public, its standing in the healthcare industry, and its relationships with third-party payers.

In the early 2000s, several states began to pass laws requiring state HAI reporting mandates through a variety of approaches. For example, Pennsylvania chose to perform 100% of HAI surveillance through the NHSN reporting system. The state recognized the potential surveillance burden on facilities and required hospitals to assess whether an electronic surveillance system was feasible to support the surveillance process.[6]

Once the federal Medicare HAI requirements via NHSN were implemented in 2011, most states deferred to NHSN as their reporting mechanism. When setting up a CSP, it is important to understand the state surveillance and reporting requirements under which your facility operates.

For summary information on individual state's infection reporting requirements, visit the CDC Health Department HAI/AR Programs page at https://www.cdc.gov/healthcare-associated-infections/programs/.

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Virtual Surveillance

BY SHAHRZAD DARVISH, MSN, RN, CIC

Virtual surveillance for identifying healthcare-associated infections (HAIs) is done through electronic health records (EHRs) and systems equipped with programs that may detect any HAIs. The systems use microbiological laboratory testing results, detection of infection-related keywords, deviations from standard vital signs, and other ancillary service results and documentation, such as radiological information, to detect HAIs. All of this work can be done remotely, without surveillance personnel being physically present in the hospital or related buildings.

The benefits and risks of virtual surveillance for various scientific purposes have been evaluated for years. The Centers for Disease Control and Prevention (CDC) have used virtual surveillance to monitor information on disease outbreaks worldwide, with desirable results.[1] Virtual surveillance leads to the collection and analysis of real-time data, and can accelerate interventions, messaging, and possibly solutions.

Over the past several decades, infection prevention and control (IPC) programs have reaped the benefits of electronic surveillance systems. Using virtual surveillance to detect the occurrence of HAIs has significantly enhanced hospital-based IPC programs, leading to improved practices and patient safety. These benefits are mainly due to the expertise of infection preventionists (IPs), who are specially trained individuals with the knowledge to discover HAIs.

Virtual infection prevention is a new frontier. As was demonstrated in the context of the COVID-19 pandemic, there is a critical need for IPC experts. Resources in this field are scarce, and virtual infectious disease healthcare epidemiology services may help organizations comply with laws and regulations. The field of healthcare epidemiology must now leverage evolving models and virtual surveillance to provide expertise across diverse healthcare systems, thereby maximizing the reach and efficiency of our knowledge and making a more significant difference in patient safety.[2] This potential of virtual infectious disease healthcare epidemiology services should inspire a sense of optimism and a feeling of progress among healthcare professionals.

While the potential of virtual surveillance for IPC programs is promising, the debate around its effectiveness continues. In a systematic review, researchers examined 11 web-based infectious disease surveillance systems, and they concluded that these systems have evolved to complement traditional national surveillance systems, serving as an effective public health tool.[3] This balanced view encourages further research and discussion on the topic. The need for additional research should instill a sense of urgency among policymakers, highlighting the necessity of their involvement in shaping the future of healthcare surveillance.

Additional information about virtual surveillance, including cleaning and normalizing electronic data, such as results from laboratory sources for use in these virtual and electronic processes can prove helpful. Paper-based patient charts and those collected by labor-intensive counting methods are not amenable to virtual surveillance.[4] IPC programs must ensure that EHR data are usable before moving to virtual surveillance processes. The resources required to accumulate the data and promptly interpret them can seem overwhelming.[4] Fortunately, EHRs have advanced to the point that virtual surveillance is now a viable option that is actively used by healthcare systems around the United States.

Along with the challenges of establishing computer systems suited to data collection, analysis, and reporting, organizations hoping to use virtual surveillance must be prepared to manage a virtual surveillance workforce. As the world adjusts to the reality of the post-COVID-19 workplace, many companies are learning the best ways to support remote workers. Fortunately, we can learn from the healthcare systems that have been implementing virtual surveillance over the last decade. The first consideration is how technology for virtual workers is set up and used. If personnel work from home, they will need secure, office-like setups in their homes, with technology provided and supported by the healthcare organization. Security measures to protect patient privacy must be carefully planned. For example, organizations may limit or eliminate the ability of workers to print from the EHR. However, personnel doing surveillance work may be accustomed to having printed copies of HAI definitions and, in some cases, using hard copies of information from the EHR for comparison. The healthcare organization will need to set expectations that virtual staff will work effectively without printing from the EHR. Access to two or three monitors/screens may help facilitate work without printing. Organizations may wish to provide a secure space where workers can go if printing is necessary. This space could also be used during internet outages as an alternative workspace, always ensuring security of patient information.

Another important personnel consideration is how to support the work lives of virtual employees. Managers should ensure frequent communication with these employees. Encounters must be arranged intentionally when there is no in-person office space that allows for random interactions. The leader of the virtual staff should therefore have frequent standing appointments with individual employees and with the team overall. Separate meetings support each employee's specific needs, while team meetings allow additional interaction to support team dynamics and communication. For virtual surveillance staff, these team meetings are an excellent way to discuss challenging cases, new surveillance definitions, or adaptations to updates and changes in the EHR system. Having a method for team interaction on an as-needed basis is also helpful. Group chats that all team members can access are beneficial to ensure the staff feel supported, to provide a shared record of questions and situations that concern the team, and to decrease concerns about isolation. This emphasis on communication should make healthcare professionals feel connected and supported in their work.

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Outsourcing a Centralized Surveillance Program

BY KRISTIN SIMMONS, SM(ASCP)[c], CIC

One of the potential benefits of establishing a centralized surveillance program (CSP) for healthcare-associated infection (HAI) surveillance is that the surveillance can be performed by trained remote workers instead of being done on site. The work can also be subcontracted to companies that offer CSP rather than a facility-employed infection preventionist (IP). At present, a few companies provide packages for remote HAI surveillance that can help ease the time-consuming burden of chart review on facility-based IPs. Recent studies have shown that around 45% of an IP's time is spent on surveillance and the identification of infections,[1,2] and implementation of an automated or CSP has resulted in significant time savings for facility-based IPs,[3-6] who can then dedicate more time to infection prevention and control (IPC) activities such as rounding. For the facility, outsourcing HAI surveillance could achieve the same results as implementing an internally managed CSP or using highly automated surveillance software: IPs could spend less time in the office performing surveillance activities and more time on the healthcare units/departments.

The services provided by an outside contractor are usually customizable. These services can be as basic as reading daily microbiology results to identify potential HAIs, which are then referred to the facility-based IPs for additional investigation, confirmation, and/or reporting, or as comprehensive as full-service surveillance, including identifying and reporting HAIs and managing a facility's National Healthcare Surveillance Network (NHSN) numerator and denominator data and NHSN reporting plan. The payment structures for these remote surveillance packages vary but are generally based on the NHSN reporting plan, the total number of cultures reviewed, or the hours that the contracted party spends investigating potential HAIs.

There are several potential benefits to using a contractor for CSP. First, as previously mentioned, with the contractor doing the bulk of the chart review and investigation, the local IPs have many working hours available to dedicate to meaningful IPC activities at their facilities rather than spending that time at a desk.[3,4,5,7] For smaller facilities with only one IP wearing multiple "hats" regarding job responsibilities, giving them back time in their day could be invaluable.[1]

A second potential advantage is that remote CSP services are not affected by the facility's local job market. If a facility has an open IP position they cannot fill, a remote surveillance contract can help bridge that gap until a suitable hire is found.[5] A recent survey of IPC programs in the United States showed that 25% of responding programs had vacancies. Of those that had recently filled a vacancy, 24% of programs reported that the vacancy had been open for 3 to 6 months, and 15% reported vacancies lasting 6 to 12 months.[8] Given that the search for a suitable candidate can be a protracted process, it is critical to find a way to continue surveillance while a position is open.

A third potential benefit of using a remote surveillance program is that it could allow a hospital or system to expand its reporting plan beyond the CMS-mandated reporting,[9]

potentially leading to the identification of other IPC opportunities. Such opportunities can improve the quality and safety of care, and provide cost savings by preventing additional HAIs or facilitating early identification of patterns and clusters.

A temporary contractor may also be helpful when the facility-based IP is a novice or has underdeveloped surveillance skills and requires training to become independently responsible for surveillance.[5] Studies have shown that achieving and maintaining surveillance skill competence is difficult for IPs under normal circumstances.[10,11] If the facility makes the contractor responsible for competent surveillance and for having an internal system to assess interrater reliability (IRR) and provide consistent and accurate application of NHSN definitions, that arrangement can remove a substantial training burden from the employing facility.

While outsourcing remote surveillance can be beneficial in some circumstances, there are a few potential drawbacks and challenges that require careful consideration. A common concern is that if the local IPs are not involved in their facility's HAI surveillance, they will be less familiar with infections within their organization and may miss patterns/clusters and opportunities for IPC and quality improvement.[5]

Another concern is that the surveillance skills of IPs could deteriorate if they do not use them regularly. This concern can be mitigated by encouraging IPs to participate in case studies and the NHSN annual training to keep their skills sharp.[10,11]

Facilities must also determine their comfort level regarding the delegation of surveillance work to a contractor. The desired scope of surveillance by the contractor (from only reading microbiology reports to complete control over HAI determinations and NHSN submission/maintenance) will affect the amount of work that may be duplicated by the facility IP. Organizations that desire extensive employee oversight over HAIs may choose to confirm findings submitted by the contractor; that approach can help validate IRR, but it will also mean that multiple people will perform the same task.

In the early days of surveillance automation, concerns were raised that removing the manual surveillance portion of an IP's daily job could reduce the IP full-time equivalents (FTEs) that an organization requires. Still, experts believe that even as technology advances, the increased scope of IPC work will lead facilities to need more IPs, not fewer.[11]

From an infrastructure perspective, outsourcing surveillance requires that the contractor have access to all the necessary patient information. This means a facility must have a secure, Health Insurance Portability and Accountability Act (HIPAA)-compliant process to make its electronic health records (EHRs) and any surveillance program accessible to outside parties.[5] Depending on the stringency and collaborative skills of an organization's healthcare information security team, the process of obtaining access for an outside contractor could be lengthy.

When considering outsourcing HAI surveillance, it is crucial to weigh all potential benefits against possible drawbacks. An organization's yearly program evaluation and risk assessment can be valuable tools in determining where the most opportunity for improvement lies and whether contracting surveillance services will help in those areas. Cost is an inescapable reality that must also be considered since the IPC program must make a convincing business case to support its request to outsource surveillance. The vendors should have the resources to help calculate the potential cost of their services and the approximate time savings for the facility IPs. The business case should compare the cost of an outsourcing contract to the costs of hiring additional FTEs for surveillance; other business case considerations

include the local availability or scarcity of IPs trained in surveillance as well as the facility's capacity to train novices in-house. By carefully considering all these factors, an organization can make an informed decision about outsourcing its HAI surveillance.

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Competency Training for Centralized Surveillance

BY SHAHRZAD DARVISH, MSN, RN, CIC

As technology improves, more tasks that humans once did are being performed by machines. Whether the work is done by a machine or human, a level of competency must be met to ensure that the outcome of the task is meaningful and reliable. Competency is applying and demonstrating appropriate knowledge, skills, and behaviors. It involves more than just taking a course, passing a test, or completing a technical checklist. It means that a person processes and acts on information in a manner that ensures they can consistently demonstrate desired behaviors, whatever the situation.[1]

The role of the centralized surveillance program (CSP) team in decreasing the incidence of healthcare-associated infections (HAIs) is pivotal, and competency in identifying health-care-associated infections (HAIs) based on National Healthcare Safety Network (NHSN) criteria is paramount, as NHSN HAI data are shared nationwide and lead to interventions to decrease the incidence of HAIs.

The competency of infection preventionists (IPs) in surveillance has traditionally been evaluated through continuing education provided by the Centers for Disease Control and Prevention (CDC) and NHSN. Being certified in infection control (CIC) is another indicator that an IP is competent in infection prevention and control. However, ongoing research is needed to verify whether CIC certification is necessary to demonstrate that CSP team members have the competency to identify HAIs. They could perhaps demonstrate competency for this work by completing HAI modules and practicing with real-life scenarios and infection events. Also, participation in interrater reliability (IRR) activities can help identify opportunities for improvement, assess competency, and provide a general overview of the overall IPC program on HAI surveillance.

HAI surveillance requires consistency and accuracy. Wright et al. investigated how well IPs and other healthcare professionals applied surveillance criteria to case studies and found that among this cohort of voluntary participants, the accuracy of their responses was suboptimal.[2] These findings highlight the crucial need for continuing education, competency development, and auditing in healthcare. The performance of IPs specifically underscores the importance of ongoing learning and skill development in the IPC field; IPs must stay committed to their professional growth and work continually to improve IPC practices.

Professional development in IPC has traditionally been divided into two essential components: skills and knowledge. Several competency models have been used to develop advanced practice education programs in IPC. These include models from the Association for Professionals in Infection Control and Epidemiology (APIC), World Health Organization (WHO), and Infection Prevention Society (IPS), which outline defined IPC skills to advance practitioners from novices to experts within three to five years.[3,4,5]

Many IPC issues are site specific. Although excellent site-specific training courses are available, much of the knowledge needed in routine IPC practice is gained while observing colleagues or being mentored.[6] The solutions to site-specific challenges depend at least in part on local knowledge and expertise from other professionals locally or from centralized sources.

A market survey by APIC demonstrated an increased focus on certification requirements as it continues to validate one's competency within the profession.[7] IPs with the CIC credential may have a more robust understanding than other practitioners of the evidence for certain IPC practices. They are more likely to recommend implementing evidence-based practices in the hospitals where they work, especially when the lead IP is certified.[8]

The value of CIC can be classified in four thematic categories where certification is understood to have a positive effect: certification process and standards; professionalism, competency, and career growth; patient care, safety, infection prevention, and control; and regulatory compliance. While research has demonstrated the perceived value and influence of certified IPs, more studies are needed to explore the impact of IPs with the CIC credentials on the incidence and prevention of HAIs.[9]

Individuals without the CIC credential can identify HAIs. Training on NHSN definitions and ongoing education are critical to any individual performing HAI surveillance. Data abstractors are professionals who can be trained to perform their functions well. The CIC credential is not mandatory, but it may be helpful to identify individuals with knowledge of HAI surveillance and the prevention of HAIs. There has been talk about possibly developing specialized certification focused on surveillance. This certification could assist CSPs and demonstrate the competency of surveillance personnel who do not hold CIC.

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Interrater Reliability (IRR) Through Standardization

BY KRISTIN SIMMONS, SM(ASCP), CIC, AND BETH R. WALLACE, MPH, CIC, FAPIC

As humans, what we see in a given situation is shaped by our individual perspectives and experiences. Our differences are part of what makes us human, after all. Evidence-based research and practices tend to lessen subjective differences in healthcare practices, including in surveillance of healthcare-associated infections (HAIs).

Infection preventionists (IPs) are individuals with specialized training in infection prevention and control (IPC). One of the primary skills of an IP is to perform surveillance in healthcare institutions for HAIs. HAIs are associated with medical devices, complications following surgery, transmission between patients and healthcare personnel, overuse of antimicrobials, and more,[1] and it takes training, practice, consultation, and continuing education to evaluate evidence and reliably identify them. Even after the IP has become proficient in HAI discovery, there can still be discrepancies between the surveillance findings of different IPs. In other words, one IP may think that an infection event is an HAI, while another IP may conclude that the event does not meet HAI criteria. The implementation of interrater reliability (IRR) can be helpful in addressing such discrepancies. IRR involves having multiple raters assess the same set of items and then comparing how the raters rated each item. Implementing an IRR program can assist the IPC department in improving surveillance, standardization, and confidence, offering a path for continuous improvement in healthcare.

What Is Interrater Reliability?

IRR measures the agreement between subjective ratings by raters, judges, or appraisers. When applied to HAI surveillance, it measures how often, given the same information, different individuals looking at an infection event would agree that it does or does not meet established National Healthcare Safety Network (NHSN) criteria for an HAI. The requirements for applying NHSN definitions are intended to be entirely objective, removing any variability due to personal interpretation of laboratory test results or clinical documentation in a patient's chart.[2] Therefore, the main variables leading to poor IRR in HAI identification stem from human factors, including how well a trained individual can read and correctly interpret the NHSN definitions and how well they can apply this information and navigate the available medical chart information to reach the correct conclusion.

It should be noted that IRR measures agreement among raters, not the accuracy of the rating. If two individuals reach the same incorrect conclusion, the IRR is 100% even though their ratings are wrong. The human factors that contribute to low IRR can be mitigated by adherence to a well-designed, standardized process for investigating potential HAIs. This emphasis on standardized processes should instill a sense of security and confidence in the objectivity of the work of IPs. However, a commitment to continuing education is essential to maintain and increase overall accuracy. Numerous sources are available for continuing

education, including the annual NHSN training conference and videos, participation in *American Journal of Infection Control (AJIC)* case studies, and, in cases of disagreement or uncertainty, contacting the NHSN email support team for expert "final rulings." Healthcare organizations should encourage IPs to pursue these ongoing learning and improvement opportunities as ways to ensure that their skills and knowledge are up to date. Another informal training method is to have a team of IPs review a possible infection event and use standardized NHSN criteria to label it as an HAI or not an HAI. This is a way to practice using the definitions and discussing rationale among peers.

Why Is Interrater Reliability Important in Centralized Surveillance Programs?

IRR is of particular concern when assessing healthcare outcome quality measures, including HAIs. A reasonable degree of confidence that multiple individuals performing surveillance for HAIs would come to the same conclusion is a necessity. However, Wright et al. found only 62.5% of volunteer participants correctly identified infections in NHSN case studies, a finding that highlights the broad need for improved IRR in the application of HAI definitions.[3]

Recognizing and overcoming deficiencies in identifying HAIs using NHSN definitions is imperative to increase efficiency and confidence in the IPC department. By establishing a centralized surveillance program (CSP) composed of trained individuals responsible for HAI surveillance and reporting, healthcare organizations may improve the standardization of processes for identifying HAIs and increase IRR agreement. However, when a healthcare organization transitions to a CSP, stakeholders may have doubts as to whether HAI cases are being over or underreported. An IRR program can help ease the transition and provide confidence in the data reported.

An IRR program can help the CSP improve standardization by identifying variations in how raters interpret aspects of the NHSN HAI definitions or other variables. Some variables that affect IRR may be related to the clinical documentation providers write. NHSN's definitions are for surveillance, not clinical diagnosis. A rigorous IRR program can also assess how medical record abstraction is performed and whether standard electronic health record (EHR) fields can or should be leveraged to improve the application of NHSN definitions.

An IRR program can also be a valuable educational tool for CSP staff and for IPs who do not routinely conduct surveillance. IRR findings should be transparently shared among all team members to improve surveillance and documentation efforts.

Finally, the most compelling reason to perform IRR is to prepare for internal and external data validation. Internal data validation, which can be accomplished with an IRR program, is a recommended component of using NHSN for HAI surveillance and reporting.[4] It assures the facility that its NHSN data, surveillance, and reporting are complete and accurate. The validated data is the HAI events entered into NHSN by the IP. State health departments perform varying degrees and types of external data validation.[5] Additionally, the Centers for Medicare & Medicaid Services (CMS) subject facilities participating in value-based purchasing programs to HAI validation.[6] A robust internal IRR program for HAI surveillance positions hospitals to be well prepared for state or CMS audit and validation procedures.

How to Implement an Interrater Reliability Program

Implementation of an IRR program can begin at any time. However, it is advised that an IRR program be initiated as soon as possible to detect trends.

To achieve the highest possible IRR, the IPs making final determinations on HAIs should have a comprehensive knowledge of the NHSN definitions, be proficient at navigating the hospital system's EHR, and follow an established process designed to lead the IP to the correct conclusion by eliminating alternative possibilities. The NHSN Patient Safety Component (PSC) manual should be the primary resource material when designing a standardized protocol, which should then be tailored to the scope of the specific surveillance program. At a minimum, standard surveillance work should include the "big six" CMS-mandated HAIs. In some cases, the IP may need to include other types of NHSN-defined infections if they are pertinent to a given case (e.g., a ventilated patient with a potential central line-associated bloodstream infection [CLABSI] that could be secondary to pneumonia [PNU] or a ventilator-associated event [VAE]). Several of the NHSN PSC chapters include flowcharts that help to structure a case investigation by eliminating alternative conclusions.

In many cases, an HAI workup will begin with a positive culture. However, surgical site infections (SSIs) may be identified from signs and symptoms or imaging alone.

SSI surveillance includes patients who were discharged but return to the healthcare facility within 30 days of a colon (COLO) or hysterectomy (HYST) surgery. This type of surveillance is usually accomplished through a daily or weekly report from the EHR or third-party surveillance software. If the SSI surveillance plan includes any surgical procedures where the surveillance period is 90 days, the reporting system must accommodate data for that time span. The IP should have automated reports of past surgical patients who have returned to the healthcare facility (outpatient or inpatient). The automated report would prompt the IP to open the EHR for the returning patient and see why they returned.

For most other CMS-mandated HAIs (CLABSI, catheter-associated urinary tract infection [CAUTI], *Clostriodiodes difficile* infection [CDI], methicillin-resistant *Staphylococcus aureus* bacteremia [MRSA BSI]), a culture or positive laboratory test result is required to meet the NHSN definition, so that is a logical event to use as a starting point for an investigation. The MRSA BSI and CDI measures are based exclusively on laboratory results; no interpretation is needed from trained individuals. Still, if a program wants to evaluate those events for breaches in best practice, a workflow should be designed to identify and investigate hospital-onset cases.

After a positive culture is identified, the standardized workflow should be designed to quickly eliminate ineligible results (such as excluding organisms, undercount cultures) and infections outside of the established surveillance plan (e.g., urine or blood cultures without an associated device, SSIs for procedure types not in the plan). Once the culture has been determined to be an eligible indicator of a potential HAI, the standardized workflow should lead the investigator through additional steps to confirm that an infection meets NHSN criteria and rule out any alternative sources for the infection (e.g., CLABSI versus a secondary bloodstream infection [BSI]).

Sample customizable templates are included in the Tools and Resources section of this document. Each hospital system should tailor their documents to their reporting plan while considering the following:

- **The audience.** The process should be documented in a manner that the least experienced person on the team can comprehend and follow.
- **Facility idiosyncrasies.** The process should account for any quirks in a system's current surveillance setup. Examples could include having more than one surveillance program or EHR in use across a system, incompatibilities between elements of the patient's medical record, or any regularly seen deficiencies in clinical documentation caused by human or systemic failure.

To measure IRR, a hospital or health system should determine a percentage of events to be overread, defined as an independent review by two or more parties. Up to 100% of events may be reviewed; the appropriate percentage will depend on resources, case volume, and, when available, historic IRR data for individuals performing surveillance. In addition to overreading infection events, overreading non-events that have been ruled out provides an additional layer of IRR oversight. Another individual who performs surveillance or a supervisor should work through the event/non-event being overread, using the same trigger and workflow as the original individual, to see whether they would reach the same HAI determination. IRR scoring can include each case or rule-out as a whole, or scoring can be based on individual components that make up the HAI determination.

All individuals in the IPC department performing HAI surveillance should demonstrate competency by completing the NHSN module for HAIs, identifying HAIs, and the HAI reporting plan for the organizations.

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Financial Considerations

BY MICHELLE W. KING, MT (ASCP), MPH, CIC

The monetary impact of centralized surveillance programs (CSPs) and healthcare-associated infections (HAIs) involves several factors. Payor contract incentives and publicly reported outcomes affect the healthcare system's brand. For instance, when an HAI occurs, it not only affects the patient's health but may also tarnish the reputation of the facility, leading to the likelihood that potential patients will seek care elsewhere. For facilities participating in the Hospital Inpatient Quality Reporting Program, reduction of reimbursement dollars from the Centers for Medicare & Medicaid Services (CMS) are at risk if the hospital does not successfully report the selected quality measures; among those measures is the requirement to report select HAI surveillance data to the National Healthcare Safety Network (NHSN). The Hospital Inpatient Quality Reporting (IQR) Program is a pay-for-reporting program for acute care hospitals. Under this program, CMS requires subsection (d) hospitals to submit data on quality measures to CMS each year. Subsection (d) hospitals are acute care hospitals that are paid under the Inpatient Prospective Payment System. Subsection (d) hospitals exclude the following types of hospitals: children's, inpatient psychiatric, long-term care, rehabilitation hospitals and the 11 Prospective-Payment System Exempt cancer hospitals.[1] For 2025, the increase in operating payment rates for general acute care hospitals paid under the Inpatient Prospective Payment System (IPPS) that successfully participate in the IQR program and are meaningful electronic health record (EHR) users is 2.9%.[2] If hospitals fail to successfully participate in the report to IQR program and/or are not meaningful EHR users, their payment update will be decreased.[2]

With a centralized surveillance program (CSP), improved standardization and surveillance accuracy could potentially lead to an increase in the number of HAIs that are identified and must be reported. That risk can be a significant consideration with implications for reimbursement. However, improved standardization in surveillance could also decrease regulatory financial risk by reducing surveillance errors. Furthermore, if facility-based infection preventionists (IPs) are no longer burdened by HAI surveillance, they can spend more time focusing on improvements in infection prevention and control (IPC) practices at the bedside and that should lead to a corresponding reduction in the incidence of HAIs.

Whether the facility uses an HAI surveillance vendor or hires new FTEs to perform system-wide surveillance, the budgetary impact of a CSP will vary, with costs and benefits depending, in part, on the availability of reproducible and accessible data. Continuous collaboration among technology vendors, internal information technology (IT) personnel, and IPs is crucial to ensure the success of centralized surveillance. This ongoing collaboration is what makes each professional feel integral to the process of delivering exceptionally safe, high-quality patient care.

Making a business case for implementing a CSP is essential; it is imperative that the organization's financial department understand the many advantages of having a CSP and the expected return on investment in a CSP. Every facility needs to fund IPC operations to fulfill mandatory reporting requirements and promote patient safety. However, the financial costs of HAIs for an organization can vary and may be difficult to calculate. Looking at the most

recent research on the financial burden can help the IPC department and others estimate the costs of HAIs for their organization as part of the business case.

Another point to make in a business case is the financial risk that an organization takes on when HAI reporting is completed by one IP. If that IP were to leave the position, there may not be anyone else trained to perform the mandatory reporting function and/or other IPs on staff would need to shift their focus from their other responsibilities to work on surveillance. In contrast, if a CSP were implemented, the reporting would be completed even when a local IP position was vacant.

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Future Implications of Centralized Surveillance

BY LITA JO HENMAN, MPH, CIC, FAPIC, AND JULIE M. RICHARDS, MSN, RN, CIC, FAPIC

Implementing a centralized surveillance program (CSP) can bring many benefits, but it is a significant shift for a healthcare organization. Surveillance, which typically consumes the highest proportion of the infection preventionists' (IP's) time, is a complex task that requires a specialized skill set. The time of any IP is finite, and time spent on surveillance is time that is unavailable for other activities. Given the elevated demand for IPs and the anticipated large numbers of experienced IPs leaving the field in the next several years, it is more critical than ever before to judiciously prioritize infection prevention and control (IPC) activities that will help push the rates of healthcare-associated infections (HAIs) as low as possible. A CSP can be an important part of this strategy, but there will be challenges such as resistance to change and a need for training. Therefore, when a CSP is launched, plans should be implemented to help ensure a successful transition, including required training and support for IPs with shifting roles. The goal is to maintain the quality of IPC practices, even in the face of these challenges.

Historically, IPs have performed routine surveillance and reporting of both required and campus-specific HAIs, even when there is a centralized surveillance structure. However, no regulatory or other requirements prohibit adjunct personnel from doing these surveillance tasks within the IPC department. These adjunct personnel, who may come from nontraditional backgrounds such as medical coding or other ancillary healthcare professions, could be immersed in focused surveillance training designed to leverage their specific skill sets and experience. This approach not only expands the pool of potential IPs but also brings in diverse perspectives and skills, enriching the field of IPC. Furthermore, personnel who have a specialized role, spending 100% of their time on surveillance and applying epidemiological definitions to rule in or out possible HAIs, will probably perform the work with greater accuracy and efficiency than is achieved in the current model.

Advantages of CSP

Creating a role that specifically and solely focuses on HAI surveillance and reporting, especially with the widespread use of electronic health record (EHR) and surveillance systems, would provide an additional entry point into the field of IPC. Constructing an entry-level, focused surveillance role allows individuals who may not meet the current educational or experience requirements to enter the field, and that could provide a deeper bench of possible candidates to consider when there is an opening for an IP. Thus, this type of entry-level surveillance position might be one avenue to help ease the current staffing strain seen with many IPC departments.

Another advantage for implementing CSP on a broader scale is that it will allow IPs to focus their time and valuable skills more fully on activities other than surveillance. According to the APIC Mega Survey 2020 report by Pogorzelska-Maziarz et al., IPs spend only 16%

of their time on activities controlling and preventing infections.[1] When a CSP frees up time for IPs to pursue nonsurveillance activities, it will be important for organizations to identify the activities with the highest positive impact on IPC goals so that facilities can ensure that their IPs have the competencies needed to effectively achieve IPC priorities.

Since the beginning of IPC, surveillance for possible HAIs has been an essential and time-consuming part of the IP's role.[2] Moving away from this model can provoke adverse reactions from some IPs, who might feel that that their role is being diminished. These adverse reactions could include worries about job insecurity, a sense of loss of control, or a perception that their expertise has been devalued. However, this shift also presents an opportunity for IPs to focus on activities that have a higher IPC impact, thereby enhancing their professional satisfaction and the quality of care. Acknowledging that adverse, positive, or mixed reactions are all valid responses to change, working to ensure a common understanding of the IP's unique expertise and value in other practice areas, and providing needed support and training will be critical to a successful transition. IPs understand that on many hospital units, the patient care team includes medical assistants/patient care techs, licensed practical nurses (LPNs), and registered nurses (RNs) working together, each focusing on aspects of care that are within their scope of practice while leaving other tasks to fellow members on the team. When implementing a CSP, it may be helpful to emphasize that the intent is to apply this type of collaborative approach to cover the growing list of responsibilities in an ever-evolving IPC department.

To facilitate sustainable change in IPC practices, IPs must interact extensively with the personnel who provide hands-on patient care and critical ancillary services such as reprocessing instruments and cleaning patient care environments.[3] Education of healthcare personnel is an essential responsibility of the IP;[4] however, the work of IPs must extend beyond information-focused educational methods to also include behavior modification. While it is important to ensure that all healthcare personnel know and understand what actions are needed to decrease the risk of HAIs and occupational infections, education alone is rarely sufficient to change behavior.[5] Shifting to a CSP model is likely to free up an average of 8 to 10 hours per week for most IPs currently responsible for surveillance and reporting HAIs.[1] As a result, IPs can dedicate more time to influencing behavior change to improve IPC practices, patient outcomes, and the safety of healthcare workers. Some IPs are experienced in this type of work, but others will likely require additional skills and training, along with support and resources, to take on these responsibilities.

The Future of CSP and IPC

As healthcare facilities shift routine HAI surveillance to a CSP model, professional organizations can support IPs in their transition by providing resources, such as an extended career ladder with specialized surveillance roles, sample job descriptions, focused training, and competency models. These types of resources help IPs and their employers identify new avenues for professional growth and development and may inspire IPs to embrace the changes enthusiastically, knowing they are not alone in this transition. Furthermore, the support and resources should reassure IPs and boost their confidence in the transition, making them feel more secure and confident in their roles.

The creation of new training modules and resources that increase IP knowledge and skills in behavior modification, including experiential learning and other behavior modification methods, would help meet an unmet need in the current training of most IPs.[6] Local

professional chapters could provide this training in small group settings where IPs would feel comfortable trying a new skill.

Additionally, research to objectively measure the impact of changes related to the restructuring of IP roles and IPC departments should be planned and implemented. By providing a solid foundation for defining best practices, this research reassures stakeholders that the changes are evidence based. Research also helps identify unintended consequences, ensuring that we have a comprehensive understanding of the implications of centralized surveillance. This commitment to research and evidence-based practice should instill confidence in IPs and their employers about the validity and effectiveness of the changes.

The impetus for implementing CSP models is to ensure that fully trained and experienced IPs have time to address IPC priorities other than surveillance in the future. It is up to the IP professional community to boldly map out a vision of how IPC would ideally change for the better if the critical and time-consuming task of HAI surveillance and reporting were to be carved out of their daily work. What could be accomplished if large portions of the IP's time and expertise were focused on projects and tasks to decrease infection risks? What tools, support, and knowledge would be required for that vision to be successfully implemented? As this change in workflow is implemented, what metrics are the most important to measure nationally to identify best practices based on various outcomes? These and other vital questions will evolve and develop as central surveillance models are more widely implemented.

The CSP team plays a crucial and valued role in IPC. They are responsible for various functions that require interaction with computer systems and electronic health records (EHRs). These functions include applying surveillance definitions for HAIs, reviewing patients' cases for infection risks and preventability, and reporting data. The reporting data may include HAIs, specific organisms, concerning conditions, and selected vaccination levels, to local, state, and federal health authorities. The team's work is instrumental in identifying and preventing the spread of infections within healthcare facilities, making them an integral part of the healthcare system.

Considerations for CSP

Some essential items to consider when implementing a CSP are the qualifications of the personnel who staff the CSP team, how they will interact with the facility IPs, and the working location(s) of the CSP personnel. Many CSPs are staffed with experienced IPs, usually with Certification in Infection Control (CIC). Other CSP staff have job descriptions that reflect the functional work of the job, such as data abstraction or clinical quality measure specialists. Decisions regarding which job descriptions to include are based on the team's needs and the pool of candidates for these positions. Some healthcare organizations use the CSP team as an adjunct to the facility IP teams. In some cases, the CSP team is used as an entry point for recruiting future IPs. In these cases, an IP-related job title (such as clerk) would be warranted to set up a career ladder toward IP. The recruitment pool can be widened for these programs by assigning more general job titles, and having a CIC credential would be unnecessary.

The location where CSP work is completed depends on the previously discussed decisions regarding job descriptions and interactions with facility IPs. A CSP team member who needs to be prepared to flex into a facility IP role should routinely be near or at that facility. A CSP team member who is not trained for the facility IP role could efficiently complete the

role from their home or an alternative setting. However, some interaction with facility IPs is essential to build relationships, and these relationships could be enhanced with at least periodic in-person interactions.

Orientation and training for any position can be a challenge, but it is a crucial step in ensuring the competence of the CSP team. In general, the orientation for new CSP staff members without experience can follow methods currently used to train new IPs. However, the techniques for maintaining competency for CSP staff will be distinctive. Some ideas for ongoing training include required participation in the National Healthcare Safety Network (NHSN) annual training, providing work time to read all new definitions and modules, and instituting a sign-off process when new items and updates are published. In addition, some CSPs hold routine meetings with all CSP staff to discuss difficult decisions and any case details submitted to NHSN for adjudication. When a CSP has multiple team members, personnel could be assigned to concentrate on specific types of infections. This approach may increase efficiency, but it also may lead to challenges when a staff member leaves the CSP team (permanently or temporarily) and no one else on the CSP team has expertise in the HAIs covered by that individual. An excellent way to maintain efficiency and program continuity is to rotate assignments for infection types among different CSP staff members, thereby ensuring high levels of competence and consistency throughout the CSP team.

High-quality communication between the CSP team and facility IPs is crucial for success. Effective communication will encompass routine exchanges of information about cases as well as processes for further adjudication and other opportunities for the CSP team to share insights into their EHR reviews with the facility IPs.

The basic level of communication between the CSP and facility IP teams will concern the details of individual patients determined to have or not have an HAI, with the most critical piece being communications about those who have an HAI. It is vital to have a standardized process for the quick and real-time communication of HAIs. Organizations may use the EHR to communicate this information; but this method may not allow the CSP team to expand on all the essential considerations of the case. Many current CSPs have standardized case review forms or worksheets to communicate details about the signs/symptoms, cultures, documentation from healthcare personnel, and definition criteria used to identify HAIs. Other CSPs use standard text sections (such as smart phrases) in the EHR to explain these details. It is essential to establish a standardized, transparent, and efficient process for communication between the CSP team and facility IPs about specific cases to ensure that all necessary information is shared and understood, fostering a sense of connection and teamwork.

The next step to facilitate communication is to hold meetings to discuss the cases. These meetings may include only the CSP and facility IP teams, or they may involve additional facility personnel. Meetings to review cases provide a great forum to discuss definitions, understand the case determinations, and help CSP teams understand how IPC actions reduce the incidence of these infections. Inevitably, there will be disagreements about outcomes in certain cases. It is advised that leaders of the CSP and facility IP teams agree upon a process of adjudication to resolve such disputes. The method of adjudication should be fair, transparent, and expeditious—there is little to be gained by delaying these determinations. This process ensures that all parties have a voice in decision-making and that disagreements are resolved promptly and respectfully.

Once the CSP has been designed and implemented, several actions can be taken to ensure that both the CSP and facility IP teams operate at an optimal level. These actions include interrater reliability (IRR) and validity assessments of the CSP team, productivity assessments of the CSP team members, and steps to ensure that facility IPs maintain competency in surveillance practices. The latter is important for patient safety, the IP's professional development, and the facility's oversight of the CSP.

It is essential to regularly verify that the CSP team's application of NHSN or other internal facility definitions is both valid and reliable. Validity means patients who do and do not meet HAI definitions are correctly identified; IRR measures whether CSP staff are applying the subjective parts of the definitions similarly to ensure appropriate data trending. Validity and IRR should be evaluated formally, but informal assessments are also valuable sources of information. Communication channels should be established for feedback from both formal and informal evaluations.

Informal assessments of validity and IRR happen as part of surveillance process operations. In every program, the CSP team communicates to the facility IPs about infections that have been identified. In many programs, standardized communications, including documentation in the EHR or separate forms/worksheets filled out by the CSP team, as discussed earlier, facilitate review by facility personnel of the identified infection. The case review process, which generally involves the facility IPs and other healthcare personnel, is by its nature a validity and reliability assessment process. While reviewing cases, frontline healthcare personnel will do a clinical assessment, and comparing their clinical conclusions with the surveillance assessment may challenge the validity of surveillance findings. The case review process may also identify IRR concerns, as the facility personnel may remember prior cases and raise questions about variations among cases in the interpretation of some of the more-subjective parts of clinical documentation.

Another critical informal assessment of the CSP team occurs in the Centers for Medicare & Medicaid Services (CMS) validation process. All hospitals are randomly selected at some point for this validation process. CMS-based reviewers select a small number of target charts for review and compare their findings on the presence of HAI with those reported to NHSN and CMS. This review is not overly rigorous and is usually a year or two retrospective. However, it is effective at identifying incorrect surveillance assessments in many cases. Facilities that "pass" this validation can feel reassured that their processes are correct.

Methods of review

There are generally two different methods of review: having multiple CSP team members review the same cases or having CSP team members and frontline IPs review them. After the separate reviews are completed, the results are compared for concordance or discordance. When either method is used, the number of cases selected for review should be determined beforehand. It is unlikely that an accurate statistically significant measurement is needed to determine this number, and the people designing the evaluation process should consider how it will affect workloads. Some programs perform about five formal assessments per month or quarter and suggest that agreement more than 90% would define agreement by CSP team and local IPs.

Alternatively, a formal assessment program could leverage the resources from NHSN to set up an internal surveillance validity process. One caution to note about a formal assessment program is that disagreements regarding surveillance definitions can sometimes be incon-

sequential. The best example of an inconsequential dispute involves likely cases of surgical site infection (SSI) cases and determining which organ space definition is genuinely met. In some complicated cases, multiple organ-space site definition can be met. In these cases, effort should not be spent adjudicating which site definition is most appropriate. If these types of inconsequential disagreements should surface, focus on the critical fact that the reviewers agree about whether an infection is an SSI, regardless of which definition element is used.

Leaders and managers need to be able to adequately assess the work processes and workloads of employees. CSP teams frequently work from home or in other workspaces outside of the hospital. An organization that is considering implementing a CSP will expect there to be a process to track and evaluate the productivity of the team and its members. The productivity metrics should be designed to evaluate the impact of many items that could change productivity after the CSP is implemented, including new definitions or surveillance metrics, new employees, and changes in the EHR system or other tools.

Productivity assessment methodologies can be split into two groups: those that are data-focused and those that are task-focused. Formal data-focused productivity assessment generally requires that the CSP leader have access to information about the timing of the case review process. Some EHR systems can produce reports on many of the alerts reviewed by CSP personnel as well as the amount of time spent reviewing each alert. If that type of report is not possible, organizations can generate generalized productivity information by tracking the number of cases reviewed over a long period and dividing divide that number by the amount of time to determine the average time spent per case. For either type of assessment, it is essential to consider the differences between an alert that determines the presence of an HAI versus an alert that determines an absence. In most cases, a review that determines an alert is not an HAI can generally be completed much more quickly than a review that identifies an HAI.

Ultimately, the most critical assessment of productivity is that the job is completed in a timely manner. Organizations will assess the productivity of the CSP team by checking whether all surveillance is completed by a deadline. For example, the expectation may be that all cases from a calendar month are completely uploaded to NHSN by the 10th or 15th of the following month. A team's work could also be monitored based on completion-time points or case-definition-time points. For example, a completion-time expectation might be that all new cases will be preliminarily evaluated before the end of a workday, or all new alerts will be reviewed before the next batch of alerts is identified. A case-definition-time expectation might be that all 30-day SSI surveillance will be completed within 35 days of the procedure and all 90-day SSI surveillance will be completed within 95 days.

When a CSP is considered, facility IPs may worry that their surveillance skills will decline due to lack of practice, and that the ability of new IPs to learn surveillance will be hampered. Organizations that implement CSPs should have a plan to ensure that facility IPs have opportunities to master and maintain their surveillance competencies through education and training.

CSP team members can play an important role in the training and orientation process for new IPs. Many organizations require that time is allotted for education, case review, and questions in the new IP's initial orientation phase. This training should cover how potential infections are identified, the process of working up infections to determine the presence or absence of HAIs, and the process for communication between the CPS team and the facility

IPs. This orientation may be more effective if the new individual reviews definitions and the NHSN basic training beforehand. Effectiveness can also be maximized when cases that illustrate essential surveillance concepts are preselected for use as part of the training.

Once IPs are competent in surveillance, they require continuing education to maintain competencies and to help them adjust to the continuous changes in surveillance definitions. Many IPC departments have a standard process where IPs review new definitions in a group education format, in addition to encouraging IPs to participate in NHSN training and webinars. Several organizations hold regular meetings for IPs to discuss infections, such as weekly meetings to review recent cases. Focusing these meetings on cases rejected as HAIs and cases that were accepted may further help IPs improve or maintain their surveillance skills. Similarly, challenging cases discussed with NHSN or found in journal articles may also be worthwhile topics for continuing education.

Using a CSP team can increase the efficiency of IP programs while still maintaining the facility IPs as experts in surveillance. A program designed thoughtfully with these items in mind and administered intentionally can significantly improve the functionality of infection prevention in your healthcare organization.

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Tools and Resources

The following tools and resources were created by healthcare organizations that have implemented centralized surveillance programs (CSPs) for healthcare-associated infections (HAIs). These tools and resources can be used as customizable templates or examples to help other organizations develop robust CSPs. However, organizations will need to modify them to suit their facilities and their infection prevention and control (IPC) departments, giving particular consideration to the capabilities of their electronic health record (EHR) system and data-mining technology. Individual organizations granted permission to use the resources presented herein.

Centralized Surveillance Program Plan Example

Purpose: The CSP is intended to improve the efficiency and effectiveness of the organization's IPC programs. This is accomplished by identifying a core group of staff to complete HAI case identification (also termed surveillance) and other appropriate reporting processes.

Program Benefits: Centralized surveillance allows the chart review process of determining the presence of an HAI to be managed by trained abstractors rather than the frontline IP. This process is in place at many of the larger healthcare systems around the United States. There are several benefits, including:

- Increased reliability and validity of HAI data, as the training for this work is rigorous and includes annual updates
- Decreased likelihood of federal penalties for lack of reporting, incorrect reporting, and unintentional reporting of inflated HAI numbers
- Improved prevention of HAI by allowing frontline IPs to engage with coworkers and focus on interventions

Risk Mitigation: The program is designed to address potential unintended consequences of this centralization and to monitor prospectively to ensure reliability and validity.

Risk	Mitigation Strategy
CSP Staff: Maintenance of Surveillance Expertise	**New staff:** Completion of all training videos and quick learns from NHSN (https://www.cdc.gov/nhsn/training/patient-safety-component/index.html). **Annual education:** Completion of NHSN annual training videos within 2 weeks of release; includes discussion within the team. **Ongoing education:** Participation in all subject-matter-relevant webinars from NHSN, CDC, or APIC, and case reviews published in AJIC within 2 months of publication; includes discussion within the team.

Risk	Mitigation Strategy
CSP Staff: Interrater Reliability (IRR)	**Internal process:** The team will complete a semi-annual analysis of at least 5 cases. All members will review the cases the CSP team leader identified from a selection of recent complex cases. Results will be blinded (when necessary) during team review and discussion; however, the CSP leader will keep individual performance records and offer additional coaching as needed. The goal will be >90% every 6 months. **External process:** The CMS validation process will be stringently reviewed. The CSP team will share any identified learning opportunities, and future IRR processes will highlight those cases.
IP Staff: Maintenance of Surveillance Skill	**New IPs:** Completion of individual introductory training based on facility requirements. The organization's minimum standard is 5 hours of online learning/reading or in-person training sponsored by an external agency. Introductory training will be supplemented by the organization's new IP monthly lunch and learns, where surveillance classes will be facilitated by the CSP team (under development). **Annual education:** Completion of ongoing training based on facility requirements, with an organization minimum standard of 2 hours of online learning/reading or in-person training sponsored by an external agency. **Ongoing education:** Completion of case reviews published in AJIC within 2 months of publication, discussion with CSP staff members encouraged Any case that meets the HAI definition will be referred to [a] hospital IP for final determination. This review process will maintain knowledge of the definition.
Communication between CSP and IP Teams	The CSP team will complete a worksheet for surveillance criteria and other relevant epidemiological investigation data points to save additional chart review from frontline staff. Any disagreements in the HAI determination made by the CSP staff will be managed via email or virtual meeting with the hospital IP team and CSP staff members. Further disagreement will be elevated to the leader of the CSP team or organizational IP leaders for final determination. (NHSN may be consulted when necessary, and the IPC team may take the lead on writing the email unless [this task is] deferred to a CSP team member.) CSP team members will ensure all identified HAIs are loaded into NHSN at the end of the surveillance period.

Program Structure and Function:

- CSP staff report to an organization leader and are integrated into an organization-wide team, which together ensures coverage for all acute care and critical access hospitals.
- The team determines and maintains a coverage chart by type of HAI and facility to ensure transparency for hospital IP teams.
- Processes for case identification, workflows, and communication with frontline staff should be established.

  Additional caveats for CLABSI:

  - All reports intended to identify potential CLABSI are reviewed daily for HAI (on working days) [or], at a minimum, at least every 2 workdays.
  - If the CLABSI appears to possibly be a secondary source but is not found on that review, communicate with frontline IP (share with IP the opportunities you see for IPC to discuss when reviewing with frontline staff for sources to culture, signs and symptoms to document, etc.).

  For all cases: If the case determination looks to be discordant with anticipated clinical interpretation,

  - [CSP staff will] reach out to [an] IP to discuss (in addition to moving the case along with the workflow pathway). Ensure [that] CSP staff members maintain a presence that conveys an understanding of the impact of NHSN definitions not aligned with clinical interpretation.
  - CSP should offer suggestions and education to be conveyed to clinical staff on documentation practices or other improvements that will help surveillance definitions align with clinical interpretation.
  - CSP should offer and anticipate being present for discussion with clinical staff on NHSN rules, caveats, etc.

  Note that high priorities for surveillance are CLABSI, CAUTI, and C. diff. VAE/pneumonia and SSI are lower priority.

  - Goal [is] to complete high-priority surveillance (including worksheet) within 5 days of alert [and to complete] low-priority [surveillance] within 10 days. If delays are due to cultures pending finalization or waiting for notes, communicate with IPs.

- Consultation with NHSN:

  If the CSP has questions about the clinical situation, interpretation of results, etc., the following process should be followed

  - Step 1: Use CSP Teams chat or email to discuss the case with staff. Response from 2 other CSPs is necessary, and consensus between the response signals team agreement (additional CSP silence is [considered to be] consent).
  - Step 2: If disparate responses or team is unclear, consultation with NHSN is encouraged.
    - NHSN guidance should be carefully interpreted to apply to that specific case and circumstances only.
    - Use caution applying that guidance to other cases, especially when that guidance could unfairly impact our hospitals over others.

Soft Metrics for Centralized Surveillance FTE Determinations

- Number of facilities
  - Acute
  - Ambulatory surgery centers (choosing to send data into NHSN)
- Number of options submitted to NHSN
  - Federally mandated HAIs
  - State-mandated HAIs
  - Optional HAIs, for example:
    - Disease-specific certifications (such as hips/knees)
    - [Types needed] To meet specific insurer requirements to be a program of distinction
    - Topics of interest, such as ventilator-associated [events]
  - Other mandated metrics submitted via NHSN (depends on the level of submission and oversight responsibilities from this team):
    - Antimicrobial use/antimicrobial use and resistance (AU/AUR)
    - CMS respiratory data
    - Team member COVID vaccination data
    - Specific skilled nursing facility (SNF) data
  - Other mandated reporting requirements (again, depends on the level of submission and oversight responsibilities from this team):
    - Communicable disease reporting

- Volumes
  - Number of lab tests to review
  - Number of surgeries to review
- Individuals involved in HAI review
- Consider the turnaround-time expectations for HAI determination (from potential to investigation complete and sent to the facility for review, plus secondary review before sending)
- Level of electronic support

Evaluation of Healthcare Organization for CSP Example

22 acute care facilities (3500 beds)

6 ASCs participate in NHSN

HAIs:

- Submit the 6 federally mandated HAIs for acute care
- No additional state requirements for most (3 facilities must also submit CABG, hips/knees)
- Optional: Submit Ventilator-associated, Hips and Knees
- Work up all other potential HAIs enough to send to [a] Peer, except for those where MRSA is the organism ([those cases are] worked up to NHSN definitional level as an internal metric)

Other mandated metrics:

- Oversight for AU/AUR, team member COVID vaccination data, SNF data, but not submission
- Submission and oversight of CMS respiratory data

Other mandated reporting requirements: Communicable disease reporting [is] primarily done by a non-IP-track med-tech on this team.

HAI review involvement expectations:

- Primary and secondary review by this team initiates documentation of findings on the investigation tool for the specific HAI type, then [the team] sends them to facility-focused IP and facility stakeholders for review and investigation for opportunities.
- Surveillance IP does sit on facility HAI review meetings to assist with understanding NHSN definitions, etc.
- All follow the same process flow, which is clear to follow so that others can easily cover.

Turnaround times:

- Goal is within 6 weeks, from potential to complete primary and secondary reviews and sent to facility IP and other stakeholders.

  However, currently sitting at 12 weeks as volumes continue to climb; in the process of requesting additional FTEs.

Electronic support:

- EHR is EPIC and is standard across all facilities but 3 (on Cerner).
- EPIC facilities also have the IP module, Bugsy.

Currently, 7 surveillance IPs are assigned to cover all HAIs for one or more facilities. All are CIC. All facilities have some allotment of these 7 FTEs (included in the facility IP FTE count). However, the new FTEs look at other, non-IP options (for data submission and oversight, MRSA bacteremia/CDI submissions, and denominator uploads such as surgeries) and perhaps different assignment strategies.

Selling [CSP] to the System

- Not more FTEs, a redistribution of FTEs (even able to be leaner).
- Gain expertise in following NHSN definitions (previously, one facility had failed CMS validation 3 times in a row; with centralized surveillance [it is] being passed with 100% compliance).
- With the focus on reducing HAIs, the ability to identify and review closer to the event was emphasized.
- IPs at the facility can focus on all things IPC and be visible and present in the building with team members. Otherwise, mandated reporting (at a computer) was the priority and was reactive (putting out fires) vs. proactive. Leveraged poor survey outcomes regarding IPC standards at that time (lots of findings and surveyors relaying insufficient IP support at the facility level).
- At the onset, the job descriptions for surveillance IPs and facility-focused IPs were the same. With increased system understanding, the expansion [of job descriptions] to other roles on the team.

Selling [CSP to] the IPs

- Much more difficult:
  - Concerns about losing expertise in HAI definitions
  - Concerns about ‘what I will do instead?’
- Initially:
  - Created road maps of expectations/work
  - Partnerships with surveillance IP and facility-focused IP on individual cases and conduct case studies, etc., to allow those who wish to stay “fresh” to participate

- Over time:
  - Provided opportunities for focused education around high-level disinfection (HLD), sterile processing department (SPD), construction, water quality, etc.
  - Created opportunities to lead system-wide teams and complete/run improvement projects
  - Provided opportunities for enhanced visibility recognition and responsibility

HAI Surveillance Work Standard Example

PROCESS: HAI IDENTIFICATION TURNAROUND TIME
ROLE(S) PERFORMING TASKS: Surveillance Infection Preventionist, Site Infection Preventionist

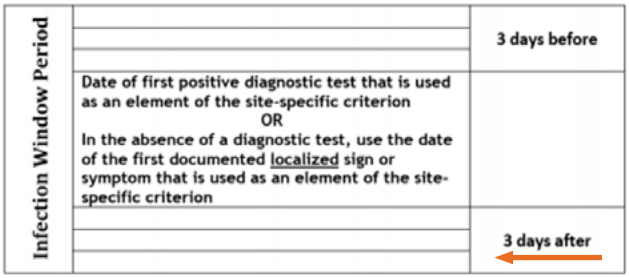
WORK STANDARD	Location:	Department:
Document Owner: Infection Prevention Surveillance Team	**Origination Date:**	**Date of Last Review/ Revision:**

Summary: This work standard describes the expected turnaround time for HAI identification

The review process for HAIs will begin once the cultures are finalized and the infection window period (IWP) is closed.

SSIs have an additional time where procedures are followed for 30 days or 90 days. Once cases are identified, the surveillance IP will share with the site IP and/or site IP manager for further dissemination.

INFECTION WINDOW PERIOD



Case review begins the day after the infection window period ends.

Exceptions to the standard:

- Increased cases at a site out of the norm
- Difficult cases that require emailing NHSN
- CLABSI cases with fungi, slow-growing organisms, or hard-to-identify organisms

CAUTI, CLABSI, C. DIFF

Infection	Expected Case Turnaround Time*	Comments
CAUTI	2-3 days	No notifications for non-cath UTIs or secondary BSIs.
CLABSI	3-5 days	No notifications for Excluded or MBI cases.
HO *C. diff*	1-2 days	No notifications for non-HO *C. diff* unless a cluster is identified.

*Once cultures are finalized and IWP is closed; it does not include weekends or holidays

Monthly data will be completed by the 15th of the following month.

MDRO

Infection	Frequency of Review	Expected Case Turnaround Time*	Comments
MRSA	Weekly	Not applicable (NA)	No notifications unless a cluster is identified; NICU cases.
VRE	Weekly	NA	No notifications unless a cluster is identified.
ESBL	Weekly	NA	No notifications unless a cluster is identified.
CRE	Weekly	1-2 days	Notifications sent for all HA CRE/CRA, any CP-CRO, and clusters.

*Once cultures are finalized and IWP is closed; it does not include weekends or holidays

Monthly data are completed by the 15th of the following month.

SSI

SSIs are reviewed starting the second week of each month for the surveillance period.

The table below can also be followed for our NHSN non-focus procedures.
Expected turnaround time for an individual case:

Procedure Classification	Focus Procedure	Monthly Data Completion	Comments
30 Day	COLO, HYST	15th of the following 2nd month	Notification of deep and organ/space. No notification of superficial unless a cluster is identified.
60 Day	CSEC, LAM	15th of the following 2nd month	No notifications unless a cluster is identified.
90 Day	BRST, CBGB, CBGC, CRAN, FUSN, FX, HER, HPRO, KPRO	15th of the following 4th month	No notifications unless a cluster is identified.

*Specific procedures can be identified for trends, clusters, or project work. These will include notification for all levels of infection.

Reference

2024 HSN Patient Safety Component Manual
https://r.search.yahoo.com/_ylt=Awriq09ZxmVnOgIAg0JXNyoA;_ylu=Y29sbwNiZjEEcG-9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1735932762/RO=10/RU=https%3a%2f%2fwww.cdc.gov%2fnhsn%2fpdfs%2fpscmanual%2fpcsmanual_current.pdf/RK=2/RS=cI-QdZn7b6Myl23DcutRUgexRztc-

CLABSI Surveillance Work Standard Example

PROCESS: NHSN Surveillance: CLABSI
ROLE(S) PERFORMING TASKS: Infection Preventionists

WORK STANDARD	Location:	Department:
Document Owner: Infection Prevention	**Origination Date:**	**Date of Last Review/ Revision:**

Summary: This work standard describes the process of completing CLABSI surveillance.

DETAILS

1. SURVEILLANCE IP will review new/current NHSN Patient Safety Component definitions prior to beginning CLABSI surveillance at the start of the new year or when new to CLABSI surveillance process.

   NHSN chapters to review include:

   - Chapter 2: Identifying Healthcare-Associated Infections (HAI) for NHSN Surveillance

- Chapter 4: Bloodstream Infection Event (Central Line-Associated Bloodstream Infection and Non-central Line-Associated Bloodstream Infection)
- Chapter 6: Pneumonia (Ventilator-Associated [VAP] and Non-ventilator-Associated Pneumonia [PNEU]) Event
- Chapter 7: Urinary Tract Infection
- Chapter 17: CDC/NHSN Surveillance Definitions for Specific Types of Infections
- NHSN Organism List

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2. SURVEILLANCE IP will perform chart review on all patients in the "System Possible CLABSI" folder on Epic Bugsy report and make a CLABSI determination (i.e., CLABSI, Secondary, Present on Admission (POA) BSI/CLABSI, or ruled out*).

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3. SURVEILLANCE IP can utilize a worksheet for CLABSIs, Secondary Site Infections, and POA cases. The review form does not need to be filled out for simple ruled-out cases (e.g., contaminant, no eligible central line, etc.).

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4. SURVEILLANCE IP will create Infection Case for all possible CLABSI cases.

   Infection Case for Confirmed CLABSI (LCBI-1, LCBI-2, LCBI-3, MBI, Excluded CLABSI), including POA

   Investigation Form:

   - Inf. date: Auto-populates with culture date. You will need to manually update for LCBI-2 and LCBI-3 with first date of sign/symptom, if needed. This also applies to secondary site infections.
   - Class: HAI (if present on day 3 or after on admit) or Not an HAI (if POA only).
   - Primary: Bloodstream Infection (BSI).
   - Associate Results: Auto-populates first culture. Manually add all blood culture results within IWP and/or RIT.
   - Associate Department: Auto-populates. Confirm the correct department and update as needed.
   - Associate Devices: Add all applicable central line devices.
   - Click "Done Investigating" and you will be taken to the Abstraction Form.
   - Abstraction Form:
   - Laboratory: Select applicable organism type: Common Commensal or Recognized Pathogen.
   - Risk Factors: Select "Yes" or "No," as applicable. For Central Line, add the insertion date and time for first eligible central line.
   - Signs & Symptoms: Select all applicable symptoms (Fever auto-populates) if the organism is a Common Commensal.
   - Underlying Conditions for MBI-LCBI (MBI CLABSI only): Select applicable condition(s).
   - Event Details: Post-procedure BSI = "No"; MDRO Infection Surveillance = "No"; COVID-19 Status = Select status applicable during this admission.

- Outcomes: Auto-populates if patient died. Need to answer "BSI contributed to death," as applicable.
- Pathogen Selection: Click addition sign to move all applicable organisms from "Available Pathogen" to "Selected Pathogen."
  - If the same organism is listed in the "Available Pathogen" section more than once, add the most-resistant organism to "Selected Pathogen."
  - Only move Common Commensal organisms to "Selected Pathogen" if they meet LCBI-2 criteria.
- Override Data: Auto-populates. Update as applicable.
- Key Infection Attributes: Auto-populates.
- Click "Done Abstracting."
- Case Comments: Can be added while entering Investigation Form, Abstraction Form data, or after case is done abstracting. Note: Comments can be updated without reopening the case. Include the following information: CLABSI determination, attributed unit, included organism(s), culture date(s), pertinent symptoms, exclusion reason, Date of Event, RIT, review date, and reviewer name or initials. For complex cases (multiple organisms, MBI organisms that do not meet MBI criteria), it is also helpful to include information to support/explain your determination.

  > *Case Comment Examples:*
  >
  > LCBI-1 for Unit X. Enterococcus faecium grew in blood on 11/15/19. Patient did not meet MBI criteria (no BMT or current neutropenia) and the BSI could not be attributed as a secondary infection. DOE: 11/15/19, RIT: 11/27/19 11/30/19, Reviewer name
  >
  > LCBI-2 for BH 3 South. Staphylococcus epidermidis grew in blood on 4/24/20. Pt had a fever (102) on 4/23/20. BSI could not be attributed as a secondary infection. DOE: 4/23/20, RIT: 5/6/20 – 5/10/2, name
  >
  > MBI-LCBI-1 for SH ICU. Enterococcus faecium (VRE) grew in blood on 11/17/20. Pt had allogeneic BMT on 7/15/20 and >1L of diarrhea during IWP. BSI could not be attributed as a secondary infection. DOE: 11/17/20, RIT: 11/29/20 – 12/7/20, name
  >
  > Excluded LCBI-1 for UU U4C. Candida parapsilosis grew in blood on 5/25/20. ECMO was initiated on 5/14/20 and in place on the DOE. BSI did not meet MBI criteria and could not be attributed as a secondary infection. Staphylococcus epidermidis (x1) grew in blood on 5/28 and is not eligible to be included in infection case. No RIT due to exclusion. - 6/4/20, name

Infection Case for Secondary Bloodstream Infection

Investigation Form:

- Inf. date: It auto-populates with the culture date. You will need to manually update it with the first date of the sign/symptom, as needed.
- Class: HAI (if present on the 3rd or more hospital day) or Not an HAI (if POA only).
- Primary: Select applicable infection type (ex., UTI, PNEU, SSI, or other eligible secondary- site infection). Note: secondary infections are listed under body systems (ex: IAB or GIT will be Gastrointestinal for "Primary").

- Secondary: Bloodstream Infection (BSI).
- Associate Results: Auto-populates first culture. Manually add all blood culture results within IWP and/or RIT.
- Associate Department: Auto-populates. Confirm correct department, update as needed.
- Associate Devices: Leave blank unless you are doing SUTI for primary.
- Click "Done Investigating" and you will be taken to the Abstraction Form.

Abstraction Form:

- Specific Event: Will change depending on the Primary Infection (ex. SUTI, PNU, SSI, IAB, etc.) selected. Select appropriate event based on criteria met
- Fill out applicable information on form.
- Signs & Symptoms: Select all applicable symptoms (Fever auto-populates). Note: when reviewing labs, look at actual lab numbers and definition. Do not just go by Epic flag (ex. NHSN considers leukocytosis as ≥ 12,000. pic flags WBC as abnormal at ≥ 15,000 for pediatrics, so cross-check when the patient was ≥ 12,000).
- Laboratory Testing: Select all applicable testing.
- Event Details: MDRO Infection Surveillance = "No"; Post-procedure infection = "No"; COVID-19 Status = Select applicable status for current hospitalization.
- Outcomes: Secondary BSI = "Yes."
- Pathogen Selection: Click addition sign to move all applicable organisms from "Available Pathogen" to "Selected Pathogen."
- Override Data: Auto-populates. Update as applicable.
- Key Infection Attributes: Auto-populates. Update as applicable.
- Click "Done Abstracting."
- Case Comments: Can be added while entering data to Investigation Form, Abstraction Form, or after the case has been abstracted. Note: Comments can be updated without reopening the case. Include the following information: primary infection type (ex. SUTI1a, PNU2, IAB3a, etc.), attributed unit, included organism(s)/cultures, culture date, pertinent symptoms and/or imaging, DOE, RIT, review date, and reviewer name or initials. For complex cases, it is helpful to include information to support/explain your determination.

> *Case Comment Examples:*
>
> PNU2 with secondary BSI. Pseudomonas aeruginosa grew in blood on 10/24/21. The patient had fever, leukopenia, new cough, tachypnea, dyspnea, increased O2 requirement, and crackles. CXR/CT showed consolidation and ground-glass opacities. Pt was treated for aspiration pneumonia on 10/25/21. DOE: 10/21/21, RIT: 11/3/21
> 11/2/2021 name
>
> GIT 2c with secondary BSI. Candida guilliermondii, Clostridium sp (not perfringens), and Trichosporon dermatis/mucoides grew in blood on 10/11/21. Pt had abdominal pain/tenderness, fever (100.9), and emesis. Abd X-ray showed pneumatosis and splenic infarct on 10/12. ID notes that bacteremia is secondary to abdominal/gut

infection source in the setting of typhlitis and give antimicrobial recommendations, which are ordered by another provider.
DOE: 10/8/21, RIT: 10/22/21
10/18/2021 name

Infection Case for Ruled-Out Case

- A "ruled-out" CLABSI is a case that does not meet basic CLABSI criteria: no eligible central line, not an inpatient, 1 positive blood culture or non-consecutive positive blood cultures, or no signs/symptoms for common commensals.

Investigation Form:

- Inf. date: Auto-populates with culture date. You will need to manually update with first date of sign/symptom, as needed.
- Class: Not HAI.
- Primary: Not a Relevant Infection – CLABSI.
- Associate Results: Auto-populates. Add any additional results, as applicable.
- Associate Department: Auto-populates. Confirm the correct department, update as needed.
- Associate Devices: Leave blank.
- Abstraction Form will not appear.
- Case Comments: Can be added while entering Investigation Form or after the case investigation is complete. Notes: Comments can be updated without reopening the case. Include the following information: The reason the case was ruled out (ex. contaminant, ineligible central line, etc.), organism(s)/cultures, culture date, review date, and reviewer name or initials.

  Case Comment Example:

  The patient had Staphylococcus (x2) on 1/1/2023. The patient did not have any signs or symptoms (fever, chills or hypotension) during IWP. Does not meet CLABSI criteria. Name, Infection Prevention, 1/1/2023

- For simple rule-out cases (ex. only 1 common commensal), you do not have to create [an] Infection Case. You would mark as a Review – Contaminant; write in the review notes.

  Contaminant. Staphylococcus epidermidis *(x1) grew in blood on 1/01/2023. 1/01/2023/2021, name, Infection Prevention*

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5. After completing the Infection Case, SURVEILLANCE IP will mark as reviewed on the "System Possible CLABSI" Epic Bugsy report. Include applicable Reason and Comment:
   - Confirmed CLABSI: Reason: "Infection Case Created," Comment: CLABSI determination, RIT.
   - Secondary CLABSI: Reason: "Infection Case Created," Comment: Secondary, RIT.
   - POA BSI/CLABSI: Reason: "Present on admission," Comment: BSI or CLABSI determination, RIT.
   - Ruled out: Reason: "Contaminant" or "Does not meet NHSN criteria," Comment: NA.

6. SURVEILLANCE IP will add all Confirmed CLABSI cases (LCBI, MBI, and Excluded)

7. SURVEILLACE IP will email CLABSI notification to SITE IP for review for LCBI-1, LCBI-2, or LCBI-3.
   - Email subject line: "A Healthcare Associated Infection was identified on your unit: Contains PHI."
   - Copy (CC) surveillance team member, surveillance manager, Site IP manager, and IP Director on email.
   - Document the date of the notification.
   - Site IP will review and, if they agree with the classification, will send CLABSI notification to unit leaders.

8. Prior to the 15th of the month, the SURVEILLANCE IP will complete all CLABSI surveillance for the previous month and complete all cases in Epic Bugsy.

9. SURVEILLANCE IP will export CLABSI cases from Epic Bugsy and import into NHSN monthly. See workflow for exporting.

CLABSI Review Notes

1. CLABSI DOE:
   a. Will always be the blood culture collection date for LCBI-1.
   b. LCBI-2, LCBI-3, and other primary infection DOE will always be the date the first element occurs for the first time during the BSI IWP, whether that be a sign or symptom or the positive blood specimen.

2. LCBI-2 Hypotension: NHSN guidance says to refer to facility policy for hypotension definition. Historically, there has not been a policy to define this, so we use AHA BLS definitions:

   Adult: < 90/60); NICU: The general rule is gestational age should be the lowest mean blood pressure with a goal of ~5+ GA for mean BP. So for a 31 weeker, mean BP should not be below 31 with goal ~36. MAP= [SBP + (2 x DBP)]/3.

   Use below for peds patients not in the NICU:

   For the PALS guidelines, hypotension is characterized by the following:
   - For term neonates (0 to 28 days of age), SBP < 60 mm Hg
   - For infants from 1 month to 12 monts, SBP < 70 mg Hg
   - For children >1 year to 10 years, SBP < 70 mg Hg + (2×age in years)
   - Beyond 10 years, hypotension is defined as SBP < 90 mg Hg

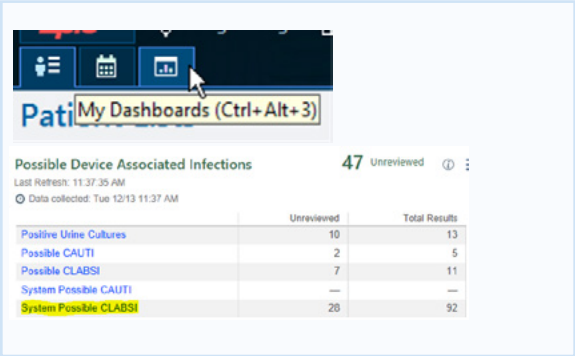
3. Primary UTI, SSI, and MDRO infections are also followed for HAI surveillance. If one of these infections is possible notify proper individuals.

EPIC NOTES: CHART REVIEW

1. Results Review: Microbiological culture results, Imaging, Cardiology, Hematology
2. Summary: Bed Tracing, Infection Monitoring (Temperature, WBC)
3. Flowsheets: flowsheet (Central lines in place, appropriate dressing changes), IV Assessment, Vitals (Temperature, pulse rate, blood pressure, pain)
4. Chart Review: MD/Nursing notes (additional signs/symptoms)

EPIC NOTES: INFECTION CASES

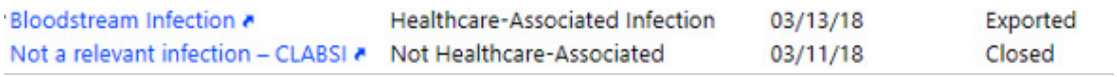
1. Open Epic and navigate to "System Possible CLABSI" report
   - "My Dashboards" on top left-hand side of screen
   - "Possible Device Associated Infections" on left side of screen.
   - The report below automatically runs for the current day. Note: you can go to Options > Edit Report Settings to adjust the date range.



   - Cases that have already been reviewed will have a checkmark in the "Reviewed" column. Cases that have already been reviewed but have updated lab results will have an empty checkmark in the "Reviewed" column. Review the lab results and update the CLABSI infection cases as necessary.

2. How to Create an Infection Case
   - Click on the patient you want to review.
   - Click the "Create Infection Case" button at the top of the report. You can also right-click on the patient and select "Create Infection Case." This will open the patient's medical record and create an infection case.

3. Mark cases reviewed in CLABSI List
    - Select the patient(s) or line(s) you want to review.
    - Click “Review (Comment)” near the top of the screen. Add comments according to #5 above.
    - A check mark will appear in the Reviewed column when complete.
    - Can select multiple lines at once by holding Shift or Ctrl.
4. To review or edit cases that already have an Infection Case:
    - Select the patient you want to review. Infection Cases will be listed in the “Infection Cases.”



Bloodstream Infection	Healthcare-Associated Infection	03/13/18	Exported
Not a relevant infection – CLABSI	Not Healthcare-Associated	03/11/18	Closed

    - To review a case: Click “View” on the desired Infection Case. This will not open the medical record. It will show the Infection Case information for the selected patient below the CLABSI list.

Infection Cases — Create new

Bloodstream Infection	Healthcare-Associated Infection	01/26/23	Exported	View	Void
Vancomycin-Resistant Enterococci	MDRO - Hospital Onset	01/06/23	Closed	View	Void
Bloodstream Infection	Healthcare-Associated Infection	01/03/23	Exported	View	Void

    - To edit a case: Click on the hyperlink infection name (ex. Bloodstream Infection) This will open the medical record. Review the Infection Case and add or change information, as needed.
    - If a Infection Case is opened unintentionally: Select the appropriate case and select “Void.”

RESOURCES

1. National Healthcare Safety Network (NHSN): Bloodstream Infections (BSI) Events website
2. Facility-specific shared folders and intranet

CDI Surveillance Work Standard Example

PROCESS: NHSN Surveillance: *Clostridioides difficile* infection (CDI)
ROLE(S) PERFORMING TASKS: Surveillance Infection Preventionist, Site Infection Preventionist

WORK STANDARD	Location:	Department:
Document Owner: Infection Prevention	**Origination Date:**	**Date of Last Review/ Revision:**

Summary: This work standard describes the process of completing CDI surveillance for Acute Care Hospitals (including Acute Rehab and Mental Health units) and notifying IPs for HO-CDI cases.

DETAILS

1. Surveillance Infection Preventionist (IP) will review NHSN LabID surveillance definitions prior to beginning CDI surveillance at the start of the new year or when new to CDI surveillance.

   NHSN Chapters to review include:

   - Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance
   - Multidrug-Resistant Organism & Clostridioides difficile Infection (MDRO/CDI) Module
   - FAQs: Multidrug-Resistant Organism & Clostridioides difficile Infection (MDRO & CDI)

2. Surveillance IP will review patients in the Epic ICON report "Clostridioides difficile" under NHSN LabID Event Reporting.
   - IP will review for all inpatient locations and select outpatient locations

3. Surveillance IP will line-list events in the "Current HAI workbook" in the Surveillance Team Microsoft Teams folder. Do not include outpatient labs (i.e., clinics).

4. Surveillance IP will abstract each case in the Epic ICON LabID report and enter the required fields:

   - Pulled automatically in Epic: Collection Date; Admission Date; Recently discharged from same facility; Associate Department; Associate Results.
     - Always validate these entries, as Epic has pulled incorrect data before due to multiple transfers or surgical admissions.
     - To review admissions: Chart Review > Encounters > click on Admissions.
   - Manually enter: Last physical overnight location; Recently discharged from same facility; Recently discharged from another facility.

Case Comments: Dot phrases can be used as a template for CO-Cdiff, HO-Cdiff, and CO-HCFA, Incident and Recurrent. Examples below.

Example (CO): (dot phrase) ..SURVCOCDIFF
CO Incident -
C diff PCR, GDH, and toxin + on UU EMERGENCY DEPT on 8/20/24
Symptoms include diarrhea, fever, and elevated WBC
Laxatives were not administered in the 48 hrs prior to test
Testing met standard testing criteria
No known admission to this facility or an outside facility in the past 28 days
Patient does not have a prior history of C diff
The BPA did not fire.
8/21/2024
Name, Infection Prevention

Example (CO-HCFA): (dot phrase) ..SURVCOHCFACDIFF
CO-HCFA Incident -
C diff PCR, GDH, and toxin + on SH EMERGENCY DEPT on 8/21/24
Symptoms include diarrhea and abdominal pain.
Laxatives were not administered in the 48 hrs prior to test
Testing met standard testing criteria
Patient was admitted to this facility from 8/6/24 to 8/8/24
Patient does not have a prior history of C diff
The BPA did not fire.
Name, Infection Prevention
August 22, 2024

Example (HO): (dot phrase) ..SURVHOCDIFF
HO Incident for unit UR 5 MED SURG
C diff PCR, GDH, and toxin + on 8/21/24
Symptoms include diarrhea and elevated WBC.
Laxatives were not administered in the 48 hrs prior to test
Testing met standard testing criteria
No known admission to this facility in the past 28 days
Patient does not have a prior history of C diff
The BPA did not fire.
Name, Infection Prevention
August 22, 2024

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5. BMT Screening
   - Patients admitted to these units (ONLY these units) are screened for C. diff within 72 hours of admission.
   - Only review for recent admissions, previous C. diff tests, and last overnight stay; review for symptoms or laxative use if they are CO or CO-HCFA cases.
     - Treat HO cases on this unit the same as a patient on any other unit.
   - Mark “1” in BMT screening column (column AN).

6. For all HO-incident cases:
    - Refer to HO CDI Cluster Response work standard.
    - Surveillance IP will send HAI notification (found in "Current HAI workbook") to site IP. Site IP will forward the notification to unit contacts.

7. Refer to CDI INVESTIGATION_HO CASES for additional follow-up if multiple HO cases occur on a single unit.

NOTES

- In line list, list "HO-recurrent" cases as "recurrent, recurrent"; otherwise, they will pull into PowerBI as HO-incident cases.
- Surgery/peri-op shows up as admission. Epic will add it as a recent discharge from the facility, but you'll need to manually remove this from the LabID event.
- Observation units, urgent care, and emergency departments are not considered inpatient admissions and should not be included in prior current hospital admits or discharges from another healthcare facility. Treat these as outpatient visits from a surveillance standpoint.
- Psychiatric Units and Inpatient Rehab Facilities (i.e., Mental Health units and Acute Rehab) are considered transfer units and a continuation of patient days. IP will need to manually change the admit date for these.
- For previous toxin date, include ONLY positives from that same facility.
- If patient has had recent C. diff test prior to this positive test, manually change Appropriate Testing? (Column AK) to "No."
- For HO-incident notification, I include relevant notes such as other GI conditions, laxative start/stop dates, tube feeds, and date when patient first met standard testing criteria.
- Look back at symptoms (WBC, abdominal pain, fever) and laxative use 48 hours prior to test order date.
- Diarrhea look back is a minimum of 3 loose stools in 24 hours.
- CO-HCFA(≤28 days since previous discharge from an inpatient location), day of discharge is day 1.
- If the PCR is positive and the reflex testing is invalid, a LabID event needs to be created. (NHSN goes by the last valid test; if it is positive, it counts as a positive test.)

RESOURCES

1. Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance
   https://www.cdc.gov/nhsn/pdfs/pscmanual/2psc_identifyinghais_nhsncurrent.pdf
2. FAQs: Multidrug-Resistant Organism & Clostridioides difficile Infection (MDRO & CDI)
   https://www.cdc.gov/nhsn/faqs/faq-mdro-cdi.html
3. Multidrug-Resistant Organism & Clostridioides difficile Infection (MDRO & CDI) Module
   https://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf

CAUTI Surveillance Work Standard Example

PROCESS: NHSN Surveillance: CAUTI
ROLE(S) PERFORMING TASKS: Surveillance Infection Preventionist, Site Infection Preventionist

WORK STANDARD	Location:	Department:
Document Owner: Infection Prevention	**Origination Date:**	**Date of Last Review/ Revision:**

Summary: This work standard describes the process of completing CAUTI surveillance for Acute Care Hospitals.

DETAILS

1. Surveillance Infection Preventionist (IP) will review new/current NHSN definitions at the start of the new year, or when new to performing CAUTI surveillance.

   NHSN chapters to review include:

   - Chapter 2: Identifying Healthcare-associated Infections (HAI) for NHSN Surveillance
   - Chapter 7: Urinary Tract Infection (Catheter-Associated Urinary Tract Infection [CAUTI] and Non-Catheter-Associated Urinary Tract Infection [UTI]) and Other Urinary System Infection [USI]) Events

2. Surveillance IP will review patients in the "System Possible CAUTI" report in Epic Bugsy.

3. Surveillance IP may utilize a tool for complicated cases.

4. Surveillance IP will create Infection Case for all confirmed and ruled-out CAUTI cases:
   - For cases easily not meeting criteria (e.g., those that do not require chart review: >2 organisms, urogenital flora, qualifying organism <100K CFU/mL, or yeast species only), an infection case is not needed, and the result can be simply marked as reviewed in the Bugsy report.

5. **Infection Cases for non-catheter-associated UTIs (ex. SUTI-POA, SUTI 1b, non-catheter-associated ABUTI):**
   - Inf. Date: auto-populates based on culture date (may need to change based on symptoms).
   - Class: HAI (if present on the 3rd or more hospital day) or Not a HAI (if POA only).
   - Primary: UTI.
   - Investigation Form:
     - Associate Results: Auto-populates first culture. Manually add all urine and blood culture results within IWP and/or RIT.
     - Associate Department: Auto-populates. Confirm correct department, update as needed.

- Associate Devices: add any applicable urinary catheters (i.e., all catheters that are continuous per NHSN definitions; do not have a calendar day in between).
- Case Comments can be added while entering Investigation Form, or Abstraction Form data, or after case is done abstracting. Note: Comments can be updated without reopening the case. Include the following information: determination (SUTI 1b, POA-SUTI, or non-catheter-associated ABUTI), attributed unit, included organism(s), pertinent symptoms, applicable Foley insertion date/removal, Case Comments: Include Date of Event (DOE), and RIT. For complex cases (multiple organisms, attributed unit criteria), it is also helpful to include information to support/explain your determination.

  > *Smartphrase .NHSNCAUTI can be used to enter comments.*
  >
  > Example: POA SUTI 1a for unit RH ED. Patient presented to RH ED on 11/16 and was admitted to an inpatient location on 11/17. >100K Enterococcus faecalis grew in urine on 11/19/22. Symptoms include fever documented on 11/18/22. Indwelling urinary catheter was in place from 11/16/22 - 11/19/22 and from 11/19/22 - present. SS 11/23/22

- Abstraction Form:
  - Specific UTI Event: Asymptomatic bacteremic (ABUTI), Symptomatic (SUTI), or Urinary system infection (USI)
  - Risk Factors: Choose in place, removed, or neither. If in place add "urinary catheter status with insertion date/time."
  - Signs & Symptoms: <Select all applicable.>
  - Laboratory & Diagnostic Testing: Select "Positive urine culture of at least 10^5 CFU/mL…" and "Organisms identified from blood specimen" (for ABUTI and secondary BSIs).
  - Event Details: Post-procedure UTI = "No."
  - MDRO Infection Surveillance = "No."
  - COVID-19 Status = Select applicable status for current hospitalization.
  - Outcomes:
    - Secondary BSI = as applicable depending on blood culture results.
    - Died: Auto-populates if patient died. Need to answer, "UTI contributed to death", as applicable.
  - Pathogen Selection: Click addition sign to move all applicable organisms from "Available Pathogen" to "Selected Pathogen."
    - If the same organism is listed in the "Available Pathogen" section more than once, add the most-resistant organism to "Selected Pathogen."

6. **Infection Cases for Non-UTIs/CAUTI:**
   - Inf. Date: Auto-populated with culture date (cross-check infection date).
   - Class: Not HAI.
   - Primary: Not a relevant infection – CAUTI.
   - Investigation Form:
     - Associate Results: Auto-populates first culture. Manually add all culture results within IWP and/or RIT.
     - Associate Department: Auto-populates based on collected location.
     - Associate Devices: Add any applicable urinary catheters.
   - Case Comments: Applicable Foley insertion/removal dates, any other patient information, etc. Smartphrase .NHSNCAUTI can be used as a template for the comment.

     > Example: Not a CAUTI - Patient admitted 11/10/22. Patient had a Foley in place from 11/11/22 - 11/15/22. +UC with >100K Escherichia coli on 11/14/22. Patient was afebrile, asymptomatic, and did not have a BSI. Does not meet NHSN criteria. SS 11/17/22. Abstraction Form will not appear.

7. **Infection Cases for Confirmed CAUTIs:**
   - Inf. Date: Auto-populates based on culture date (may need to change based on symptoms).
   - Class: HAI (if present on the 3rd or more hospital day) or Not a HAI (if POA only).
   - Primary: UTI.
   - Secondary: Add BSI if applicable.
   - Investigation Form:
     - Associate Results: Auto-populates first culture. Manually add all culture results within IWP and/or RIT.
     - Associate Department: Auto-populates. Confirm correct department, update as needed.
     - Associate Devices: Add all applicable urethral urinary catheters (i.e., all catheters that are continuous per NHSN definitions; do not have a calendar day in between).
   - Case Comments: Can be added while entering Investigation Form, or Abstraction Form data, or after case is done abstracting. Note: Comments can be updated without reopening the case. Include the following information: CAUTI determination, attributed unit, included organism(s), pertinent symptoms, applicable Foley insertion date/removal, Date of Event (DOE), and RIT. For complex cases (multiple organisms, attributed unit criteria), it is also helpful to include information to support/explain your determination.

     > Example: SUTI 1a for unit UU U7C. >100K Escherichia coli grew in urine on 12/6/22. Symptoms include urinary frequency and lower abdominal pain documented on 12/7 and 12/8, respectively. Indwelling urinary catheter was in place from 11/29/22 - 12/5/22. SS 12/12/22

- Abstraction Form:
  - Specific UTI Event: Asymptomatic bacteremic (ABUTI), Symptomatic (SUTI), or Urinary system infection (USI)
  - Risk Factors: Urinary catheter status with insertion date/time.
  - Signs & Symptoms: <Select all applicable.>
  - Laboratory & Diagnostic Testing: Select "Positive urine culture of at least 10^5 CFU/mL…" and "Organisms identified from blood specimen" (for ABUTI and secondary BSIs).
  - Event Details: Post-procedure UTI = "No."
  - MDRO Infection Surveillance = "No."
  - COVID-19 Status = Select applicable status for current hospitalization/
  - Outcomes:
    - Secondary BSI= As applicable depending on blood culture results.
    - Died = Auto-populates if patient died. Need to add "UTI contributed to death," as applicable.
  - Pathogen Selection: Click addition sign to move all applicable organisms from "Available Pathogen" to "Selected Pathogen." If the same organism is listed in the "Available Pathogen" section more than once, add the most resistant organism to "Selected Pathogen."

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8. After completing the Infection Case, SURVEILLANCE IP will mark as reviewed on "System Possible CAUTI" Epic Bugsy report. Include applicable Reason and Comment:
   - Confirmed SUTI or ABUTI: Reason: "Infection Case Created," Comment: SUTI or ABUTI determination.
   - Non-catheter-associated UTIs: Reason: "Infection Case Created," Comment: Determination.
   - **Non-UTIs/CAUTI:** Reason: "Does not meet NHSN criteria," Comment: No UTI symptoms.

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9. SURVEILLANCE IP will add SUTI 1a and ABUTI to a shared folder.

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10. SURVEILLACE IP will email CLABSI notification to SITE IP for review for SUTI 1a and ABUTI. Email subject line: "A Healthcare Associated Infection was identified on your unit: Contains PHI."

    Copy (CC) surveillance team member, surveillance manager, Site IP manager, and IP Director on email.

    Document the date a notification was sent.

    SITE IP will review and, if they agree with the classification, will send CLABSI notification to unit leaders.

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11. Prior to the 15th of the month, SURVEILLANCE IP will complete all CAUTI surveillance for the previous month and will complete all cases in Bugsy.

12. SURVEILLANCE IP will export CAUTI data from Epic Bugsy report and import into NHSN monthly. See workflow for exporting

CAUTI Review Notes

- CAUTI DOE: Will always be the date the first element occurs for the first time during the IWP, whether that be a sign or symptom or the positive culture.
- Primary UTI, SSI, and MDRO infections are also followed for HAI surveillance. If one of these infections is possible notify the following individuals:

  CAUTI and/or C. diff:
  ESBL and/or SSI:
  MRSA and/or SSI:
  CRE:
  VRE:

2024 HAI Workbook **details:**

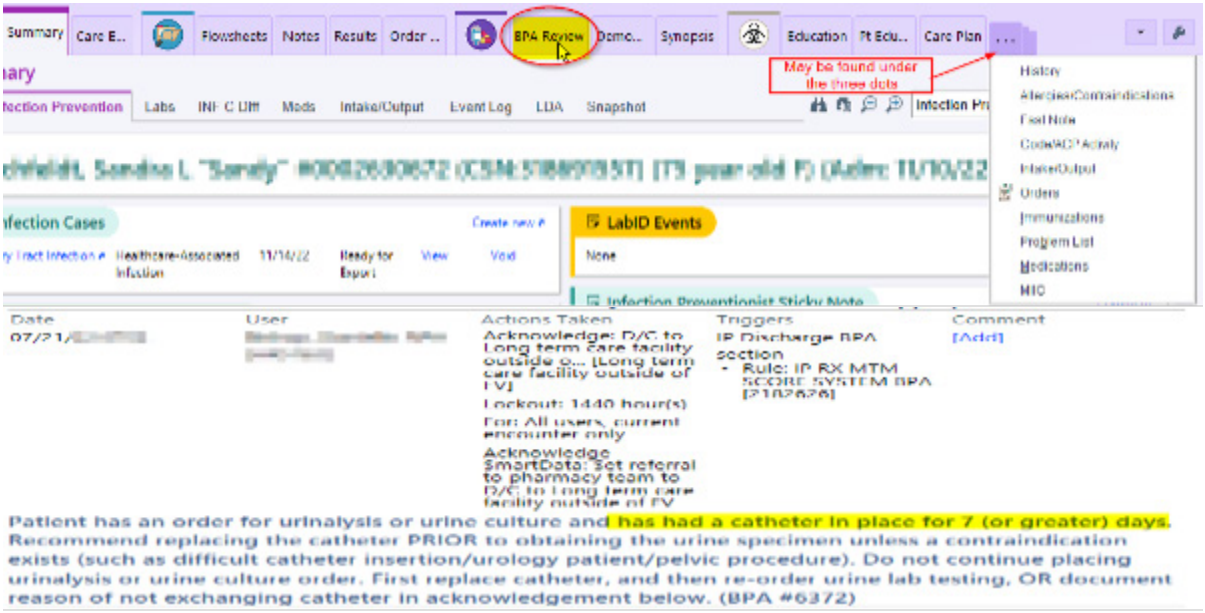
- Foley BPA : Review 7 Day Catheter Warning to Provider BPA report.
  - BPA measures Foleys in hours, not calendar days, like NHSN; if provider orders UA/UC while is Foley is place ≤ 168 hours, the BPA will not fire.
- To check for pan-culture: Review if patient had urine, blood, sputum all collected within same day (typically within 1-2 hours of each other but needed within the same day).

EPIC Notes: CHART REVIEW

1. Results Review: Microbiological culture results, Imaging, Cardiology, Hematology.
2. Summary: Bed Tracing, Infection Monitoring (Temperature, WBC).
3. Flowsheets: LDA NAV flowsheet (Urinary Catheters and Care), Intake/Output flowsheet, Vitals (Temperature, pulse rate, blood pressure, pain).
4. Chart Review: MD/Nursing notes (additional signs/symptoms).
5. CVA tenderness/flank pain/suprapubic tenderness: Vital Signs-Pain/Comfort and/or Adult PCS-Genitourinary flowsheets.

BPA Review:

- Will only fire if the urinary catheter has been in place for 7 days or greater.



RESOURCE

National Healthcare Safety Network (NHSN): Patient Safety Component Manual
https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual_current.pdf

Checklist for Implementation of a Centralized Surveillance Program

- Identify the scope of the program—which infection types, which locations.
  - Consider piloting the program at a small number of hospitals.
- Personnel
  - Develop job description(s)—consider a ladder approach.
  - Determine [whether positions will be] virtual, in-person, or mixture.
- Orientation
  - Determine how CSP staff will be trained.
- Ongoing competence
  - Plan for expectations on continuing education.
- Daily work process
  - Create workflows for the process of identifying potential HAIs.
  - Identify surveillance timing expectations.
  - Determine what level of documentation of chart review results will be needed.
    - » Standard worksheets for each infection type are suggested.
  - Develop a process to monitor the productivity of CSP.
- Communication
  - Develop a process for CSP to communicate infections to the frontline IP team.
  - Develop a process for dialogue on disagreement with the interpretation of HAI determination.
  - Clarify how NHSN will be used for discrepancy resolution.
- Interrater reliability
  - Develop a plan for ongoing assessment of reliability within team members.
  - Include the CSP team in the CMS validation process.

Spreading knowledge. Preventing infection.