

ICAR Activity A4

HAI Outbreak Detection, Reporting, and Investigation

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ELC HAI Grantees Meeting
November 17, 2015

Outline

- ❑ **DHQP Prevention and Response Branch**
 - Role in HAI Outbreak Investigations
 - Resources Provided
- ❑ **ICAR A4 Activity**
 - Detect
 - Report
 - Investigate
 - Communicate
- ❑ **Self Assessment**
- ❑ **Reporting**

HAI OUTBREAK INVESTIGATION

Support from DHQP Prevention and Response Branch

Importance of HAI Outbreak Investigations

- ❑ **Early intervention to prevent additional cases**
 - Identify source and scope
 - Identify product and device issues
 - Implement control measures
- ❑ **Facilitate earlier diagnosis and treatment**
 - Contact those who are potentially exposed
 - Make the medical community aware
- ❑ **Reduce morbidity and mortality**
- ❑ **Preserve healthcare resources**
- ❑ **Prevent future outbreaks**
 - In the facility
 - In other healthcare facilities

Role of DHQP Prevention and Response Branch (PRB) in HAI Outbreak Response

- ❑ **Investigate and respond to emerging infections and related adverse events among patients and healthcare personnel**
- ❑ **Provide consultation to health departments**
- ❑ **Conduct Epi-Aid investigations**
- ❑ **Coordinate response across DHQP**
 - Clinical and Environmental Microbiology Laboratory
 - Blood, Organ, Other Tissue Safety (BOOTS)
- ❑ **Work with other groups at CDC**
- ❑ **Reach out to other federal agencies**
 - FDA
 - CMS
- ❑ **Utilize partnerships with professional organizations**
 - Disseminate Information
 - Obtain outside expertise

How CDC Helps Resolve Outbreaks in Healthcare Facilities

Milestones in an Epi-Aid Investigation



CDC receives a call or e-mail from a facility or health department



CDC epidemiologist gathers initial information and provides consultation on case finding, lab testing and infection control



Health department extends a formal invitation for CDC to help lead an on-site team



CDC Epidemic Intelligence Service Officers arrive on-site and help gather additional information from interviews, case/chart reviews, observations and environmental sampling



The team analyzes this information to identify risk factors for infection and help develop control measures



CDC recommends new or revised measures and steps to prevent more patients from becoming infected or harmed



Health department and facility implement recommendations and check to ensure the control measures are working



Following the conclusion of the on-site investigation, group communications continue to review what has worked and make adjustments as needed

CDC reviews the situation for lessons learned and takes steps to prevent similar outbreaks



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

DHQP Prevention and Response Activities

Type	2014 #	2015 YTD #
Response (total, including Epi-Aid)	88	79
Epi-Aid	12 (includes Ebola deployments)	7

* Citations, references, and credits

2014 Highlights

- **PRB staff and EISOs participated in 88 response activities**
 - **Variety of settings**
 - **Acute care (40)**
 - **Ambulatory care (34)**
 - **Long-term care (6)**
 - **31 different states, including 3 multistate activities**
 - **6 foreign countries (Guinea, Kingdom of Saudi Arabia, Liberia, Nigeria, Switzerland and the United Arab Emirates)**
 - **12 Epi-Aids**

2014 Highlights

- **Wide variety of organisms**
 - **Bacterial (38)**
 - Gram negative (18) – 13 unique genera
 - CRE (9)
 - NTM (5)
 - **Viral (34)**
 - HCV (13)
 - HBV (11)
 - Ebola (4)
 - **Fungal (5)**
 - *Aspergillus spp* (2)
 - *Rhizopus spp* (1)

<http://www.cdc.gov/hai/outbreaks/>

Healthcare-associated Infections

- Data and Statistics
- Types of Infections
- Diseases and Organisms
- Preventing HAIs
- Map: HAI Prevention Activities
- Research
- Patient Safety
- Outpatient Settings
- Laboratory Resources
- Outbreak and Patient Notifications
- Widgets, Buttons and Badges



Outbreak Investigations in Healthcare Settings

CDC works with health departments and federal agencies, such as the United [Food and Drug Administration \(FDA\)](#), to protect patients and stop outbreaks from spreading in healthcare facilities. Often, these outbreaks are the result of either failures in infection control practices or contaminated equipment or medications.

During some outbreak situations, CDC sends experts to work side-by-side with facility and health department staff. For example, state health departments may contact CDC and request assistance through a process known as an [Epi-Aid](#). Typically, these efforts include on-site assistance, laboratory support and additional consultation with experts at CDC headquarters. CDC advises the public about what they can do to protect themselves, provides recommendations to the medical and public health community about how to prevent future infections, and works closely with policymakers, regulatory agencies and industry to learn how to prevent similar outbreaks in the future..

In addition to formal Epi-Aid investigations, CDC routinely provides consultation and laboratory assistance to healthcare facilities and health departments that are working to solve outbreaks or investigate infection control breaches and other adverse events.

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- [Infographic: How CDC Helps Resolve Outbreaks in Healthcare Facilities](#) [PDF - 60 KB]
- [Outbreak and Patient Notification Resources for Healthcare Facilities and Health Departments](#)
- [Outbreaks and Patient Notifications in Outpatient Settings](#)
- [Diseases and Organisms in Healthcare Settings](#)

Healthcare

- Hand Hygiene
- HICPAC
- Injection Safety
- Medication Safety
- MRSA
- National Healthcare Safety Network (NHSN)
- Nursing Homes and Assisted Living
- Sepsis
- Sharps Safety
- Transplant Safety

2014-2015 Epi-Aid Investigations Supported by CDC's Division of Healthcare Quality Promotion

- ▶ [Blood and Wound Infections in Nursing Home Patients](#)
- ▶ [Hepatitis Infections Among Patients at an Outpatient Facility](#)
- ▶ [Bloodstream Infections in a Nursing Home](#)
- ▶ [Infections Among Cancer Patients](#)
- ▶ [Rare CRE Found in Hospital Patients](#)

Reminder, for your general HAI Outbreak and Response needs, DHQP is always available for consultation...

... and especially interested in hearing about:

- **Acute care settings:**

- **Clostridium difficile Infections (CDI)** in special populations and novel strain infections
- Clusters and outbreaks in **long-term acute care (LTAC) settings**

- **Dialysis settings:**

- **Hepatitis B reverse seroconversions and reactivations**
- **Clusters of Gram negative bloodstream infections**

- **Long-term care facilities (LTCF)**

- Clusters and Outbreaks in LTCF

- **Outpatient settings**

- Alternative medicine clinics
- Unsafe injection practices

- **Nontuberculous Mycobacteria (NTM)**

- Cases, clusters, transmission of **Carbapenem-resistant Enterobacteriaceae (CRE)**

→ haioutbreak@cdc.gov

ICAR A4 ACTIVITY

Assess outbreak reporting and response in healthcare settings

How has your state health department supported HAI-related outbreak response during this funding period (8/1/13-7/31/14)?

Answer Choices	Responses
N/A - the state health department did NOT support HAI-related outbreak response activities	1.92% 1
Dedicated staff time to HAI-related outbreak response activities	90.38% 47
Developed education, trainings, tools, and/or resources to assist with HAI-related outbreak response activities	75.00% 39
Supported training of state health department staff in response to HAI-related outbreaks	53.85% 28
Supported facility/provider training sessions on HAI-related outbreak response	53.85% 28
Supported on-site investigations of HAI-related outbreaks	65.38% 34
Paid consultants to provide expertise in HAI-related outbreaks to the state health department	5.77% 3
Developed or maintained a system/process for the reporting of HAI-related outbreaks to state health department	73.08% 38
Provided laboratory services to support HAI-related outbreak activities	57.69% 30
Other (please specify) Responses	7.69% 4
Total Respondents: 52	

ICAR Activity A4

Assess and improve HAI outbreak reporting and response

- Evaluate capacities to detect, report and investigate
- Across setting types

Evaluate Your State Health Departments Activities and Capacity

- ❑ **The process should be self reflective**
- ❑ **Utilize HAI Advisory Committee**
- ❑ **Review tracking system and internal documentation**
- ❑ **Examine HAI outbreak:**
 - Detection
 - Reporting
 - Investigation
 - ... and Communication
- ❑ **Can also query healthcare providers**

Detection

- ❑ **What are your state's reporting requirements for outbreaks and specifically HAI outbreaks?**
- ❑ **Is the language of the requirements clear to provide consistency?**
- ❑ **How are these requirements documented and communicated?**
- ❑ **Are they distributed to facilities across the healthcare spectrum as well as laboratories?**
- ❑ **Can your HAI Advisory Committee help improve uptake and understanding of reporting requirements?**

Reporting Requirements

- ❑ **HAI and infectious disease reporting requirements variable**
 - What, when and how to report
 - Healthcare provider vs. health facility vs. laboratory
- ❑ **Outbreak definitions that are specific to healthcare settings**
 - Variable/flexible to account for mode of transmission and type of infection?
- ❑ **Other types of adverse events which may pose serious infection risks**
 - Consider CMS Survey & Cert Memo from 2014

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Center for Clinical Standards and Quality/Survey & Certification Group

Ref: S&C: 14-36-All

DATE: May 30, 2014



Center for Clinical Standards and Quality/Survey & Certification Group

Ref: S&C: 14-36-All

DATE: May 30, 2014

TO: State Survey Agency Directors

FROM: Director
Survey and Certification Group

SUBJECT: Infection Control Breaches Which Warrant Referral to Public Health Authorities

Memorandum Summary

- ***Infection Control Breaches Warranting Referral to Public Health Authorities:*** If State Survey Agencies (SAs) or Accrediting Organizations (AOs) identify any of the breaches of generally accepted infection control standards listed in this memorandum, they should refer them to appropriate State authorities for public health assessment and management.
- ***Identification of Public Health Contact:*** SAs should consult with their State's Healthcare Associated Infections (HAI) Prevention Coordinator or State Epidemiologist on the preferred referral process. Since AOs operate in multiple States, they do not have to confer with State public health officials to set up referral processes, but are expected to refer identified breaches to the appropriate State public health contact identified at:
<http://www.cdc.gov/HAI/state-based/index.html>

Reporting – Considerations

- ❑ **Are all facility types instructed on what and how to report?**
- ❑ **Does the state health department have a database for recording and reviewing HAI outbreaks?**
- ❑ **If the database is for all outbreaks, can HAI outbreaks be extracted?**
- ❑ **Determine what types of outbreaks are consistently reported and identify any gaps in reporting that may be present**
- ❑ **Utilize HAI Advisory Council to assess gaps in reporting and determine priority areas for improvement**
- ❑ **As an additional option consider engaging providers to assess their understanding and triggers to contact the local or state health department**

Investigation

- ❑ **What is the investigative authority of the health department?**
 - Who shares that authority? Is it situation dependent?
- ❑ **What is the capacity to investigate HAI outbreaks?**
- ❑ **What staff are available to provide consultation?**
- ❑ **What staff are available to conduct on site investigation?**
- ❑ **What expertise is available for HAI outbreak investigations?**
- ❑ **What are the strengths as well as the gaps in response activities in different healthcare settings? ...for different types of outbreaks?**
 - Pathogens/modes
 - Device-related infections
 - Injection safety breaches
 - Reprocessing breaches

...Communication

- ❑ **How are HAI outbreaks communicated internally (e.g., state and local health departments)?**
- ❑ **Are there mechanisms in place for communication with survey and certification staff? Professional boards?**
- ❑ **Are there mechanisms in place to communicate information regarding HAI outbreaks and emerging pathogens to healthcare providers across the state?**
 - Health alerts
 - Partnership with professional organizations
- ❑ **How are external communications managed? Under what circumstances does the public have access to information regarding investigations?**

A.4 Reporting Metric

- ❑ **Measure A.4: Completion of an evaluation of outbreak detection and response activities**
- ❑ **Every 12 months**
- ❑ **Facilitate discussion with HAI Advisory Council**
- ❑ **Data elements:**
Summary report of capacities related to detection, reporting, and investigation of HAI outbreaks and emerging threats for each healthcare facility category

Self Assessment



Evaluation of Response Activities in Multiple Healthcare Settings

Setting	Detect	Report	Investigate	Communicate
Acute Care Hospitals	Green	Green	Yellow	Green
Long Term Care Facilities	Red	Green	Green	Yellow
Dialysis Facilities	Green	Yellow	Green	Red
Outpatient Care	Red	Yellow	Yellow	Red

Data to detect a potential outbreak in Setting X?

No = Red

Yes, but incomplete = Yellow

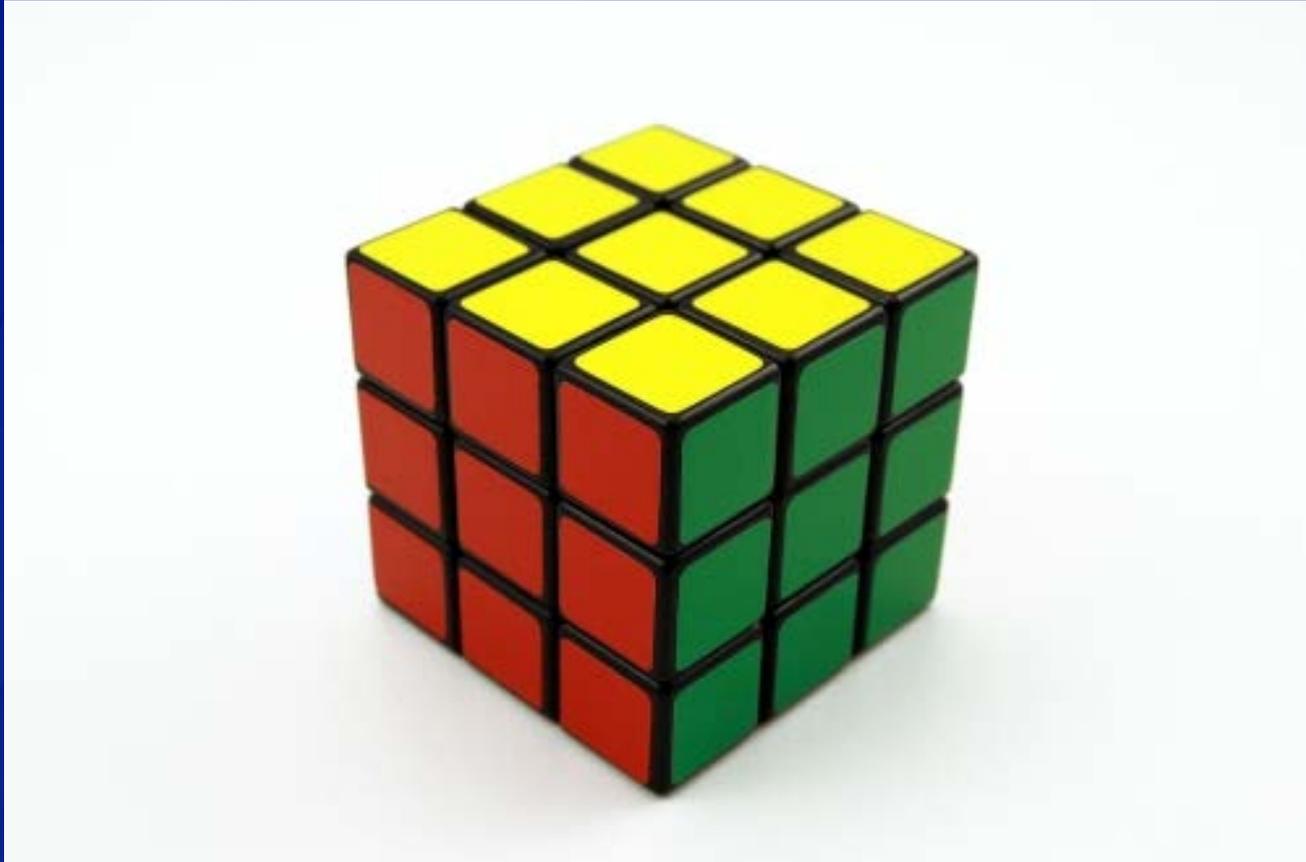
Yes, complete = Green



Evaluation of Investigation Capacity by Pathogen Type and Mode of Transmission

Setting	MDRO	C diff	BBP	CLABSI	SSI	ILI	GI
Acute Care Hospitals	Green	Green	Yellow	Green	Yellow	Green	Green
Long Term Care Facilities	Green	Green	Green	Green	Red	Green	Green
Dialysis Facilities	Red	Yellow	Green	Red	Green	Green	Green
Outpatient Care	Green	Red	Red	Yellow	Yellow	Green	Yellow

Putting it All Together



Activities of Focus

- ❑ **Work with HAI Advisory Committee**
 - Get outside input on clarity, understanding, and adherence to reporting requirements
 - Help identify gaps in HAI Outbreak investigation activities
- ❑ **Review HAI Outbreaks investigated**
 - Identify potential gaps in outbreak reporting
 - Assess level of response to different types of outbreaks in different settings
- ❑ **Assess clarity of reporting requirements and how thoroughly these requirements are communicated**
- ❑ **Ensure both internal and external communication pathways are in place**
- ❑ **Can potentially assess healthcare provider and facility understanding and adherence to reporting requirements**

HAI Outbreak Council

- ❑ **Mission: To improve practices, policies, and processes at the local, state, and federal levels for detection, investigation, control, and prevention of outbreaks in healthcare settings.**
- ❑ **Vision: Local, state, and federal partners collaborating effectively to reduce the burden of healthcare-associated infection (HAI) outbreaks in the United States.**
- ❑ **Governance Committee Membership**
 - ASTHO (Association of State and Territorial Health Officials)
 - CDC / Division of Healthcare Quality Promotion
 - CSTE (Council of State and Territorial Epidemiologists)
 - NACCHO (National Association of County and City Health Officials)
- ❑ **Modeled on the Council to Improve Foodborne Outbreak Response (CIFOR)**
- ❑ **Kickoff – Winter 2015-16**

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for Emerging and Zoonotic Infectious Diseases

Division Name in this space

