HAI Outbreak Response: A Tabletop Exercise

Division of Healthcare Quality Promotion
Prevention and Response Branch

CSTE Sunday HAI Workshop
June 9, 2013

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

Nothing to Disclose

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion
Exercise Objectives

- Discuss role of local and state health departments in responding to reports of communicable disease outbreaks and conducting investigations in outpatient settings

- Review important strategies used to conduct an investigation in an outpatient setting

- Discuss how local, state and federal policy may affect how health departments approach outbreak investigations
Day 1 - Morning

Your state health department was notified by a local health department about three patients who were admitted to a nearby hospital this week with joint infections due to culture-confirmed *Serratia marcescens*.

The initial report came from the hospital’s infection preventionist (IP) after learning that all three patients received care at the same outpatient pain clinic in the week prior to hospitalization.
Questions

- Does this report meet the definition for a reportable disease?

- What actions should be taken by the local health department at this point? By the state health department?
Day 1 - Afternoon

Staff from the local health department meet with the hospital IP to review the medical records and interview the patients at the hospital.

The record review and interviews confirm that all three patients received steroid injections on the same day at the same outpatient clinic.
Day 1 - Afternoon

The local health department suspects the infections are linked and were acquired at the time of the outpatient procedures.

They consult you at the state health department regarding these findings and next steps. You discuss the need to gather additional information about the clinic and schedule a site visit.
Questions

- What initial information should you gather about the pain clinic?
- What other agencies or entities should be notified at this stage of the investigation?
- What authorities in your state perform site visits in medical practices?
Day 2

A site visit is scheduled at the outpatient pain clinic. The plan is for the local health department epidemiologist to be accompanied by a state communicable disease epidemiologist and a state licensing inspector.
Questions

- What are the priorities of the site visit?
- What preparations does the site visit team need to make in advance of the visit?
- What infection control policies and procedures should the site visit team plan to review?
- What could the site visit team do if the facility refuses to let the team do the site visit or observe procedures?
Day 3 – Site Visit

The site visit team arrives at the clinic and meets with the clinical manager to discuss the purpose of the visit.

The clinic is located in a suburban, middle class neighborhood in a free-standing building. The facility has a waiting room, an office/registration area, four exam rooms with sinks, and two clinician offices and a bathroom. The clinic sees between 40-60 patients a day and is open 5 days a week from 9:00 – 5:00 PM.
Day 3 – Site Visit

The team learns that the clinic’s physician owns the business license for the clinic, and that it is not affiliated with any other medical facilities. The physicians and nurses are professionally licensed. The staff is comprised of a physician, nurse practitioner (clinical manager), one registered nurse, one licensed practical nurse and three medical technicians. The physician sees patients one afternoon a week and the other staff are full time employees.
Questions

- What additional information is important to know about the clinic and staff?
- What documentation would help you learn more about the clinical activities performed by the clinicians?
- How would you confirm the medical licensure status of the clinical staff?
There are no job descriptions available for review.

The team is told that the nurse practitioner, nurses and medical technicians perform most of the clinical activities, including medication preparation and some intramuscular injections.

However, the nurse practitioner and physician perform the medical evaluations and more invasive injection procedures.
Questions

- What type of infection control training is needed in this setting? What type of documentation would you look for?

- What employee health and infection control policies would you look for in this setting?
Site Visit Update #2

Infection prevention and employee health policies and practices are discussed with the clinical manager. Infection control training is offered by the facility and each employee is offered the hepatitis B vaccine. The clinical manager also tells you that employees are encouraged to stay home when sick.

There are no written facility-specific employee health policies or procedures.
After the initial meeting with the clinical manager, the team focuses on the areas where the injection procedures are performed, using CDC’s outpatient infection prevention checklist to help direct and focus observations.

Questions

- Based on the information you have learned, what infection prevention practices would you target in your assessment of this setting?

- What records or other documentation would you be interested in reviewing?

- What specific concerns do you have at this point about the clinic’s infection control practices?
Site Visit Update #3

The facility has a Bloodborne Pathogens Exposure Control plan but no other clinical policies. Hand hygiene and PPE supplies are found throughout the facility. You observe staff consistently using PPE and performing hand hygiene when caring for patients. No environmental cleaning or sterilization procedures were observed. Medications are stored in either a locked cabinet or designated medication refrigerator. Injections are prepared in the procedure rooms. The nurses state that both single and multi-dose vials are used.
After reviewing office recovery logs and patient records, it is determined that the clinic keeps a daily log that includes the patient’s name, appointment time, clinician and purpose of visit. The nurse or medical technician documents vital signs, medications, and presenting symptoms in the patients’ charts; and the physician documents the diagnosis, office treatments and recommendations. No temperature logs are found on the refrigerator. Open, undated vials of medications are found in the medication refrigerator.
The Exam Room

White-Comstock, CDC
Questions

- What information about the medications used on the three hospitalized cases should you collect?

- What information should you gather about the roles of the clinical staff?

- What concerns do you have thus far about the office practices?
Site Visit Update #4

You learn that the hospitalized patients received knee injections using two different medications, a steroid and an anesthetic agent.

You meet with the registered nurse to discuss injection practices. He tells you the medications used for joint injections come in multi-dose vials, and the patients probably received the medication from the same vial since they were all administered on the same day. You ask him to show you how the injections are prepared.
The nurses takes you to a small room where the laboratory procedures are performed. He reaches in the refrigerator and removes two vials. He takes you in an exam room where the medications are prepared and administered. He begins demonstrating the following procedure.
Injection procedure:
- Assembles the medication and alcohol pads on the countertop by the sink.
- Opens a sealed package containing a sterile needle and syringe.
- Wipes stoppers of both medication vials with an alcohol pad.
- Inserts the sterile needle and syringe into the anesthetic vial to draw up a typical dose of medication.
- Inserts the same needle and syringe into the steroid medication vial and draws up a dose of medication.
- The medication syringe is recapped and placed on the countertop until the injection is ready to be administered by the NP or physician.
- He explains that the injection site is prepared using alcohol and the medications are injected into the patient using the syringe containing the two medications.
- He places both vials back in the medication refrigerator.
Questions

- What concerns do you have about the nurse’s injection practices?
- What additional information about the medications should you collect?
Site Visit Update #5

You discover that one of the medication vials is packaged as a multi-dose vial and the other packaged as a single-dose vial. The nurse tells you that the vials are discarded when they expire or when they are empty. He tells you that all of the nurses and medical technicians prepare medications in the same manner.

You note that the medications in question are manufactured by two well-known commercial pharmaceutical companies.
The nurse tells you that most of their patients do well after the injections, but sometimes patients continue to have pain or develop infections. He said that he has only seen two injection site infections in the two years he has been there and both occurred within the past month.
Questions

- What information should you collect about these two additional cases?
- What is your hypothesis at this point? Why?
Cultures were not obtained from the two patients who reported infection at the site of their injections. These two patients did receive their injections in the same week as the three hospitalized patients.

The team suspects that all of the infections are related to poor injection practices. They are concerned that other patients may have been exposed.
Questions

- How would you go about identifying other potential cases?
- How should patient notifications be conducted?
- Who should follow-up on the notifications efforts?
- What other entities should be involved in the investigation?
The investigation team meets with the clinical manager, nurses and physician to discuss the findings thus far. The facility is cooperative and willing to take the steps necessary to prevent infections in their patients.

The facility compiles a list of patients for the investigators and agrees to assist in notifying them of a possible exposure.
Questions

- What policy/practice changes would you recommend to the facility?

- Does this situation warrant communication with professional licensing board(s) or other entities? If so, who?

- How will you facilitate follow-up?
Final Thoughts #1

- The role of local and state health departments is critical in conducting successful investigations in outpatient settings. It is important to define these roles prior to an event to ensure a successful outbreak response.

- Local, state and federal partners should be identified prior to the development of an outbreak to facilitate cooperation and collaboration during an investigation.
Final Thoughts #2

- The steps involved in conducting an outbreak investigation in outpatient settings are the same as with other investigations; however, challenges exist that should be identified and used to inform outbreak response and related protocols.

- The role of policy on local, state and national levels in eliminating healthcare-associated infections in outpatient settings should be continually evaluated.