

Participant Guide

Healthcare Associated Infections – A Hospital Based Tabletop Exercise focusing on the MDRO *Candida auris* (*C. auris*)

EXERCISE OVERVIEW

Exercise Name	Healthcare-Associated Infections Tabletop - <i>Candida auris</i> (<i>C. auris</i>)
Exercise Dates	October 2023 through May 2024
Scope	This exercise is a tabletop, with 8 planned exercises offered in 8 Regions for the duration of 4 hours each across the state of Iowa. Exercise play is limited to partners that would be involved in the response and mitigation of an outbreak of <i>C. auris</i>
Focus Area(s)	Prevention, Protection, and Response
Capabilities	Planning; Operational Coordination; Infrastructure Systems; Logistics and Supply Chain Management; Operational Communications; Public Health, Healthcare and Emergency Medical Services; Situational Assessment
Objectives	<p>Goal 1: Increase awareness among Iowa hospitals and their partners about emerging multi-drug resistant organisms (MDRO) threats.</p> <p>Objectives –</p> <ol style="list-style-type: none"> 1. Describe the characteristics of the <i>C. auris</i>, i.e., prevalence, mode of transmission, treatment, and prevention. 2. Recognize the current emerging threat of MDRO to global, federal, state, and local public health. <p>Goal 2: Increase the readiness and preparedness of Iowa hospitals and their partners to quickly identify, respond to, contain, and develop future prevention strategies for an emerging MDRO event.</p> <p>Objectives –</p> <ol style="list-style-type: none"> 1. Identify local and state partners needed to effectively address an MDRO event and continuously maintain these partnerships, including coordinating an effective and efficient response. 2. Review evidence-based planning and response strategies appropriate to the participants' situations. 3. Identify the principles of Incident Command System to an MDRO event. 4. Explain the process of requesting additional resources through the local, state and federal partners including the Strategic National Stockpile program. <p>Goal 3: Assist in identifying materials needed to allow individual facilities to successfully conduct similar MDRO response exercises in the future.</p> <p>Objectives –</p> <ol style="list-style-type: none"> 1. Acknowledge evidence-based literature and apply these to update the current biological response plan. 2. Identify types of communication venues such as social media sites and webinar platforms commonly used by the participants. 3. Determine technological and personnel resources needed to enable future exercise presentations.

Threat or Hazard	Biological - multidrug-resistant organism (MDRO): <i>Candida auris</i>
Scenario	Interactive, discussion-based exercises that will focus on the awareness and response of hospitals related to multidrug-resistant organism (MDRO) threats. MDROs are bacteria that resist treatment with more than one antimicrobial. They are found mainly in hospitals and long-term care facilities and are often spread from patient to patient through hands of healthcare workers.
Sponsor	University of Iowa Public Health Research and Policy, University of Iowa Carver College of Medicine, Iowa State Hygienic Laboratory, and the Iowa Department of Health and Human Services
Participating Organizations	Hospitals, their partners and those responsible for community emergency preparedness including Infection Prevention & Control, Emergency Preparedness, Public Health, Medical/Physician Administration, Emergency Management Agencies, Nursing Administration, Clinical Support, Healthcare Administration, Clinical Laboratory, Housekeeping and Emergency Medical Services. Appendix L has full list of participating agencies.
Point of Contact	Vickie Miene, Interim Director, Iowa Institute of Public Health Research and Policy, University of Iowa College of Public Health, N571-B CPHB, 319-384-1511, Vickie-miene@uiowa.edu , Iowa City, IA., 52242

Agenda

Welcome and Introductions (15 minutes)
Review of Exercise, Goals & Objectives (20 minutes)
Input 1 – Ground Zero, the First Patient (15 minutes)
Input 2 – It’s Confirmed! (20 minutes)
Input 3 – Admissions and Transfers. Oh My! (25 minutes)
Input 4 – Facility Assessments (20 minutes)
BREAK – (15 minutes)
Input 5 – Developing and Implementing a Screening Plan and Communication Plan (20 minutes)
Input 6 – Screening Results and Follow Up Communication (20 minutes)
Input 7- Long Term Action Plan(10 minutes)
BREAK – (15 minutes)
Hotwash – (25 minutes)
Closing Comments and Next Steps (10 minutes)
Adjourn

EXERCISE OVERVIEW AND GUIDELINES

Through the use of guided scenarios, the tabletop exercise will allow you to practice responding to an MRDO outbreak in your organization and within your jurisdiction. The practice will give you insight into strategies necessary for effective response, allowing you to look for gaps in plans and how to address these gaps.

This tabletop exercise is divided into eight inputs and the summation and review (hotwash).

Remember, there are no right or wrong answers in the completion of the exercise. The entire purpose is to allow you to practice responding to the outbreak. NO ONE fails in the process. Learning and planning for these events is a continuous process where you will always learn how to prepare and respond.

Ground Rules for the Exercise

- This is an open **no-fault environment** - varying viewpoints, even disagreements, are expected
- Base your responses on **existing plans**, policies, procedures, capabilities, and resources
- Please assume the exercise **scenario is plausible**, and events occur as they are presented
- Decisions are **not precedent setting**; consider different approaches and suggest improvements
- There is **no “hidden agenda”** nor are there any trick questions.
- Issue identification is not as valuable as suggestions and recommended actions that could improve response efforts; problem-solving efforts should be the focus.
- It's OK to ask for help or clarifications.
- During the exercise, you should play the role you would be responsible for during an actual outbreak.

Facilitation of the Tabletop Exercise

This exercise follows the FEMA format. Facilitators are for assisting you as follows:

- Set the stage and facilitate the exercise;
- Assist the group by offering technical advice, question them about their role(s), direct their learning and help them focus on the task at hand;
- Facilitate entire group during the discussion sessions;
- Provide training on the materials presented as needed, and;
- Evaluate how the group(s) is doing during each input.

The facilitators are NOT present to give answers, as there are no right or wrong answers. They are present to guide the process.

THE EXERCISE -

INPUT I – Ground Zero, the First Patient

15 minutes

NOTE: Hospital based players are employed by Memorial Hospital.

Refer to Appendix A: Mrs. Adam's Medical History

The infection preventionist at Memorial Hospital has been notified that a blood culture on Mrs. Adams, drawn on July 6, 2023, is growing *Candida haemulonii*. The infection preventionist is concerned since a recent Epi Update had an article that showed *Candida auris* could be misidentified as *C. haemulonii*. The infection prevention team determined that an investigation should be started.

In general, *C. auris* is spread in healthcare settings by person-to-person spread on healthcare providers contaminated hands and by contact with contaminated environmental surfaces or equipment. *C. auris* had not been isolated in this hospital and it is rare in this catchment area, and it can spread silently and rapidly in healthcare settings. The primary goal is to prevent the spread of this yeast.

Objectives for Input I Operational Period

What should be accomplished during this operational period?

Things to Think About

- What is your role at this point?
- What should the infection preventionist do and in what priority?
- What should the microbiology laboratory do? To what Iowa HHS/SHL guidance should the laboratory refer?
- What guidance(s) are available to guide actions? (Iowa HHS/SHL, Infection Control Plan, Reportable Disease Guidelines)
- What are some key questions that should be asked, i.e., should planning a containment strategy be started?
- Who or what partners should be contacted or informed at this point?
- Where would you find information or guidance that might be needed?

You can record your answers for future use on the worksheet at the end of your packet.

INPUT 2 – It’s Confirmed!

20 minutes

Refer to:

Appendix B: Contact Summary

Appendix C: *C. auris* Patient Transfer Flow Diagram

Mrs. Adams’s sputum culture had heavy growth of KPC-*Klebsiella pneumoniae*. She is transferred to a single room that day.

3 days later, the infection preventionist is notified by the Iowa HHS Hospital Acquired Infection (HAI) Program that the yeast has been confirmed to be *C. auris*.

Given the confirmation of *C. auris*, Infection Control and Prevention staff are concerned that Memorial Hospital receives and discharges in- and outpatients to and from numerous facilities in their catchment area. Upon review of their policies and procedures, it they aren’t clear how internal and external information should be handled. They know that information must be provided in a timely manner, delivered accurately, presented at a level that is understandable to the audience and reach all appropriate people. But they are not sure who should be given information and what information they should receive. They also wonder whether or not hospital legal counsel should be included.

Objectives for Input 2 Operational Period

What needs to be accomplished during this operational period?

Things to Think About

- Which components of Mrs. Adam’s history are particularly relevant and/or concerning?
- Given Mrs. Adam’s history, which partners that should be notified of the *C. auris* identification?
- Does the CDC or Iowa HHS already have “canned” messages that can be used to communicate this information?
- Could prior *C. auris* isolates been misidentified? If so, what should be done?
- What steps should be taken to determine if transmission has occurred?
- What preliminary recommendations should be given to patient care staff and any other partners who have interacted with Mrs. Adams?
- What preliminary recommendations should be given to staff regarding prevention of *C. auris* spread?
- Will there be challenges to implementing prevention recommendations? If yes, what challenges should they anticipate?

INPUT 3 –Admissions and Transfers! Oh My!

10 minutes

Refer to:

Appendix B: Contact Summary

Appendix D: *C. auris* Flowchart

Appendix E: Referral Transfer Network *C. auris*

Considering Mrs. Adams's medical history and her transfers between the Golden Rehabilitation Center and Memorial Hospital, part of the internal investigation should determine the extent of possible contact with other patients, staff and visitors. Infection Prevention and Control staff begin contact tracing, which is made a bit more difficult given the numerous facilities with which Memorial Hospital shares patients.

Objectives for Operational Period 3

What should the objectives be for this operational period?

Things to Think About

- Who should be notified about the *C. auris* results? Why or why not?
- Who would be responsible for coordinating the tracking and notifications?
- Who would oversee the containment response?
- Who is responsible for implementing proper containment procedures?
- At this time, should incident command be activated?
- Who would be responsible to ensure that staff have access to sufficient PPE for?
- Who is responsible for reviewing housekeeping including disinfection plan?

CDC's guidance document - Goals of initial containment response include:

1. Identify affected patients.
2. Ensure appropriate control measures are promptly implemented to limit further spread.
3. Determine if transmission within a healthcare facility and dissemination to other facilities are occurring (Tiers 1-2).
4. Characterize novel organisms or mechanisms to guide further response actions, patient management, and future responses.
5. Coordinate response with ongoing prevention activities (e.g., MDRO education, infection prevention and control improvement initiatives, routine colonization screening, and improved interfacility communication) in the region.

<https://www.cdc.gov/hai/mdro-guides/containment-strategy.html>

INPUT 4 – Facility Assessments

25 Minutes

Refer to Appendix E: Referral Transfer Network *C. auris*

Refer to Appendix F: ICAR Assessment

Staff from the Iowa HHS HAI Program arrange to visit Memorial Hospital to assess infection prevention practices by conducting an in-person Infection Control and Response (ICAR) assessment to assess the risk for transmission and to recommend specific steps for containment.

They noted that:

- 1) Hand hygiene compliance varies by unit
- 2) Some staff exit a patient's room wearing gloves, get supplies from the supply closet, and then re-enter the patient's room
- 3) Gowns are not easily accessible
- 4) Some alcohol hand rub dispensers are empty or non-functional
- 5) Gait belts are used on > 1 patient and washed at the end of the day in a clothes washer and then dried in a drier.
- 6) Housekeeping uses a quaternary ammonium-based product for cleaning and disinfecting surfaces

Staff from the HAI division also visit Golden Gate Rehabilitation Hospital to assess infection prevention practices, assess the risk for transmission, and recommend specific steps for containment.

They note issues with hand hygiene and personal protective equipment use that are similar to those seen at Memorial Hospital. In addition, they identified issues with cleaning and disinfecting equipment in the PT gym:

1. Mrs. Adams and 4 other patients did PT in the gym.
2. PT equipment, including parallel bars, were wiped with wipes containing a quaternary ammonium disinfectant.
3. Staff did not allow adequate drying time.
4. At times, staff missed some pieces of equipment when disinfecting surfaces between patients.

Objectives for Operational Period 4

What should the objectives be for this operational period?

Things to Think About

- What should be communicated to care providers and staff in the involved facilities?
 - Facts about *C. auris*
 - Ways to prevent transmission
- If you were a Memorial Hospital staff member, what information would you want the transferring facility to share with you regarding a patient they were transferring to you who is known to have *C. auris*?
- Is the situation something the public should be informed about?
- How should Memorial Hospital staff handle questions if contacted by the media for information about the situation?
- What should be communicated to patients and family members?
 - Facts about *C. auris*?
 - Prevention measures being implemented?

- The new signs on patients' doors?
- What information should be shared?
- What would you (players) want to know?
- If incident command has not been activated, should it be done now?
- Should there be a joint IC?
- What platforms should/could be used to circulate information?
- Would Just in Time (JIT) training be appropriate? If so, who should receive it?
- Given the size of the outbreak, will all facilities have enough PPE?
- If not, how do they get more?
- What is the probability of requesting activation of the SNS?

INPUT 5 – Developing and Implementing a Screening & Communication Plan

30 minutes

Refer to:

Appendix C: *C. auris* Patient Transfer Flow Diagram

Appendix D: *C. auris* Flowchart

Appendix E - Referral Transfer Network *C. auris*

Staff from the Iowa HHS HAI Program think there is a high likelihood that significant transmission has occurred. They recommended that patients of Memorial Hospital and residents of the Golden Rehabilitation Center be screened for *C. auris* colonization.

Persons at highest risk of being colonized or infected with *C. auris* are:

- Persons who have been hospitalized **outside** of the U.S. (at least an overnight stay in **last 12 months**), especially in countries with known *C. auris* cases. (Map: www.cdc.gov/fungal/candida-auris)
- Persons cared for in post-acute care facilities, especially those with ventilator units
- Persons colonized or infected with carbapenemase-producing bacteria (e.g., “CPO”)
- Persons who have been hospitalized or been in a post-acute care facility (especially those with ventilator units) in **hot spots in the US** <https://www.cdc.gov/fungal/candida-auris/tracking-c-auris.html> AND <https://www.cdc.gov/hai/mdro-guides/containment-strategy.html>)

[CDC guidance](#) indicates that facilities should consider screening patients who are at high risk for *C. auris*, including:

- **Close healthcare contacts** of patients with newly identified *C. auris* infection or colonization
- **Patients who have had an overnight stay in a healthcare facility outside the U.S. in the past year**, especially if in a country with documented *C. auris* cases
- Strongly consider screening when patients have had such inpatient healthcare exposures outside the United States **and have infection or colonization with carbapenemase-producing Gram-negative bacteria. *C. auris*** co-colonization with these organisms has been observed regularly.

Objectives for Operational Period

What should the objectives be for this operational period?

Things to Think About

- Using the information provided and Mrs. Adam’s case history, which patients should be screened for *C. auris* colonization? Consider both hospitals and long-term care facilities. If yes, who and why?
- What information should be provided to patients, family members and residents?
- How should patients be informed about screening?
- Would patient consent be needed for screening?
- Who might give push back about screening, such as administrators (cost) or staff (labor intensive). How would this be handled?
- Who would be responsible for initiating the screening process and obtaining the specimens?
- How would screening be prioritized? Consider recording on the worksheet.
- Who should receive the results of the screening?
- What swabs would you use and what sites would you swab?
- Where would the swabs be sent for testing? And how would results be received?

INPUT 6 – Screening Results and Follow-Up Communications

20 minutes

Refer to Appendix G: *C. auris* Flowchart

The screening results from Memorial Hospital indicate *C. auris* has spread within the facility. The joint information center decided that a communication plan should be implemented so that essential information can be disseminated within the hospital and to all other affected entities.

The following recommendations from Iowa HHS are communicated to:

Memorial Hospital

- Continue contact precautions
- Inform downstream facilities
- Consider active screening on all admissions
- Continue screening until you have two consecutive negative rounds

Golden Rehabilitation Hospital

- Continue contact precautions
- Screen new admissions that meet risk criteria
- Continue screening until you have two consecutive negative rounds

Cy Hawk Retirement Castle, Bridges LTCF & Callaway LTCF

- Utilize enhanced barrier precautions for all residents who meet the criteria.
- Continue contact precautions for residents who are infected, and the infection cannot be contained.
- Screen new admissions that meet risk criteria.

Local Public Health (LPH) Departments in the Region

- Expectation is to communicate to Iowa HHS if a facility reports a *C. auris* detection to LPH
- Iowa HHS will let LPH know when there are new detections in their area

Objectives for Operational Period

What should the objectives be for this operational period?

Things to Think About

- Are there issues and/or questions to discuss with the Iowa HHS HAI Program? If so, what are they?
- Should staff members, residents, family members, and partners receive updated information? If so, what information should they receive and how will it be communicated?
- Who in your institution is responsible for developing and implementing an action plan to address the spread of *C. auris*? Is this information included in current response plans?
- Do your response plans require some staff to fill more than one role? If so, do they understand the responsibilities of their roles?
- Should Incident Command be used? If so, is it designed to be scalable?
- Does local public health have the resources to support the screening?
- Who will be performing the screening tests? How will results be communicated?

INPUT 7 – Long Term Action Plan

10 minutes

Facilities that share patients with Memorial Hospital are notified with the suggestion that new admissions that meet risk criteria from this point forward have screening testing completed. Iowa HHS HAI team revisits Memorial Hospital to evaluate whether infection prevention and control practices are improving. The team decided to do additional point prevalence screenings 2 weeks apart to determine if there is further transmission. This will be continued until two consecutive point prevalence screenings do not identify additional cases of *C. auris* colonization.

Objectives for Operational Period

What should the objectives be for this operational period?

Things to Think About

- How is a cluster defined in your response plans?
- Who is collecting data and how are data analyzed to determine the extent of spread, whether spread continues, and effect of mitigation procedures?
- How should *C. auris* be reported to Iowa HHS?
- Are the MDRO infection prevention and containment policies and procedure current? Is there a system in place for review and updates?
- Have staff members received education on *C. auris* prevention and containment? Who should this include?
- Is there any other messaging that should be shared within the facilities, with partners and/or with the public? Who is responsible for preparing and delivering these messages?
- If Incident Command has been activated during the outbreak, is there an exit strategy in the response plans?

HOTWASH [25 MINUTES]

Topic/Issue	Facilitator Notes/Questions
Hotwash	<p>The facilitator should hand out a participant feedback form to capture the responses in writing and aggregate them in the After-Action Report. Provide a brief overview of the purpose of the hotwash:</p> <ul style="list-style-type: none"> • The purpose of the hotwash is to debrief the exercise and provide participants with the opportunity to discuss their general observations <ul style="list-style-type: none"> ○ Are there any other issues you would like to discuss that were not raised? ○ What strengths did you observe in relation to meeting exercise objectives? ○ What areas should be examined further or need additional work (areas for improvement)? ○ Was the exercise beneficial? Did it help prepare you for follow-on testing? ○ What did you gain from the exercise? ○ How can we improve future exercises and tests? <p>Evaluators are to record responses for summarization after the exercise. These responses should be used to improve the next exercises and as “lessons learned” for the final report.</p>

CLOSING COMMENTS [10 MINUTES]

Slide #	Topic/Issue	Facilitator Notes/Questions
Thank You slide	Closing Remarks	<ul style="list-style-type: none"> • Call upon Dr. Herwaldt, Vickie Miene or other senior ranking participant in exercise to provide closing remarks • Provide information about next steps and how the information will be used

END EX [ADJOURN]

APPENDIX A

MRS. ADAMS' MEDICAL HISTORY

Memorial Hospital Medical History

Patient Name: Abigail Adams

Today's Date: July 10, 2023

DOB: September 29, 1951

History Prior to Current Hospital Admission

In early June, patient visited family in India. She developed a UTI and was hospitalized there for 5 days. Treated with piperacillin/tazobactam. Discharged on ciprofloxacin. Patient recovered.

Patient was admitted to Memorial Hospital 11 days ago on June 27 after she slipped off a curb and broke her ankle. The ankle was surgically fixed. No complications were reported.

On June 30, four days later, the patient was discharged from Memorial Hospital and transferred to Golden Rehabilitation Hospital to receive physical therapy for the ankle. 7 days later she developed the symptoms noted for transfer to the hospital.

Current Hospital Admission

July 6

Patients is a 72 y.o. female. She has been transported to Memorial Hospital via ambulance from the Golden Rehabilitation Center. Presentation consists of fever, cough, SOB, fatigue and weakness. Initial dx is R. lower lobe pneumonia. Immediately treated with vancomycin and piperacillin/tazobactam.

July 7

Patient remains febrile. Blood, sputum and urine cultures collected and sent to the hospital clinical laboratory.

July 8

Sputum culture was positive for heavy growth of KPC *Klebsiella pneumoniae*. Patient was transferred to a single room.

July 9

Blood culture grew a yeast species.

July 10

The VITEK 2 yeast ID card identified the yeast isolated from the blood culture as *C. haemulonii*. Since the VITEK2 method may misidentify *C. auris* as another yeast species, the organism was sent to the State Hygienic Lab for confirmation further testing.

July 13

The patient's blood culture isolated was confirmed to be *C. auris*.

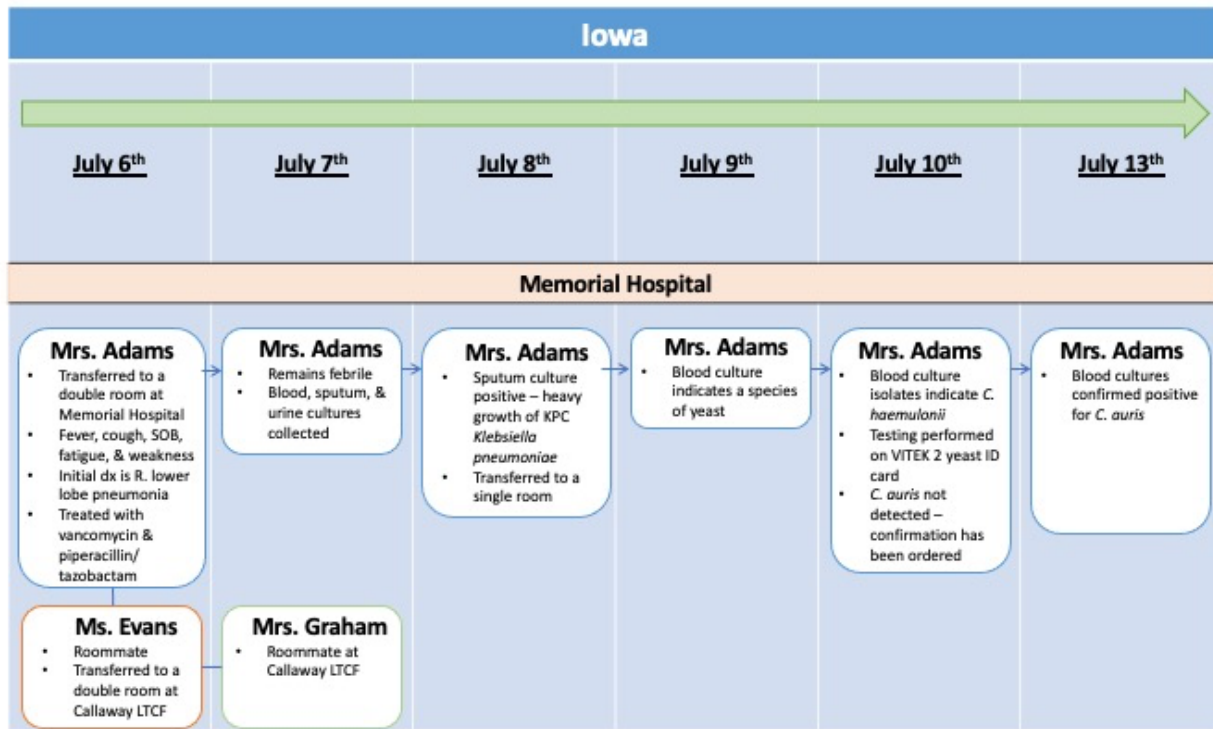
APPENDIX B

CONTACT SUMMARY

	Memorial Hospital	Golden Rehabilitation Hospital	Memorial Hospital
Mrs. Adams	Placed in double room	Placed in double room	Placed in double room
Mrs. Baldwin	Roommate to Mrs. Adams for 3 days. Discharged to Achieve LTCF Shared room with Miss Fisher		
Ms. Conner		Roommate to Mrs. Adams for 7 days	
Ms. Evans			Roommate to Mrs. Adams Transferred to Callaway LTCF Placed I double room
Mrs. Dawson	Admitted to Mrs. Adam's former double room. Transferred to Bridges LTCF		
Miss Fisher	Shared room with Mrs. Baldwin at Achieve LTCF		
Mrs. Graham			Roommate to Ms. Evans

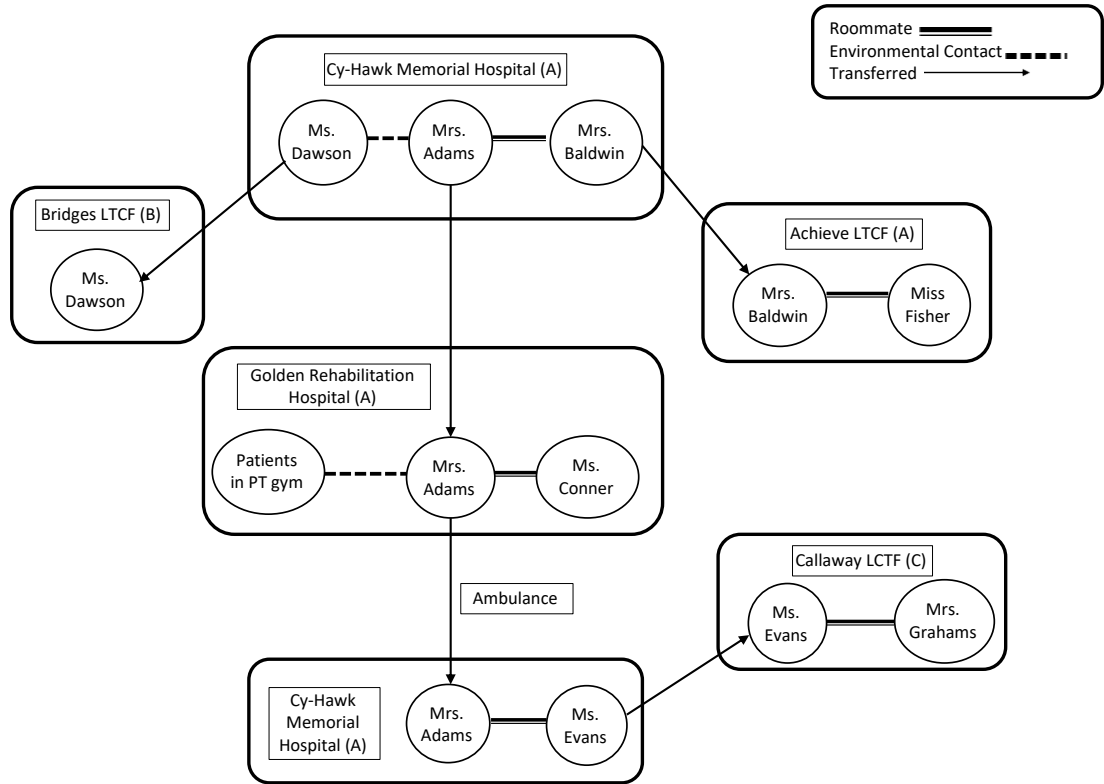
APPENDIX C

C. auris PATIENT TRANSFER FLOW DIAGRAM



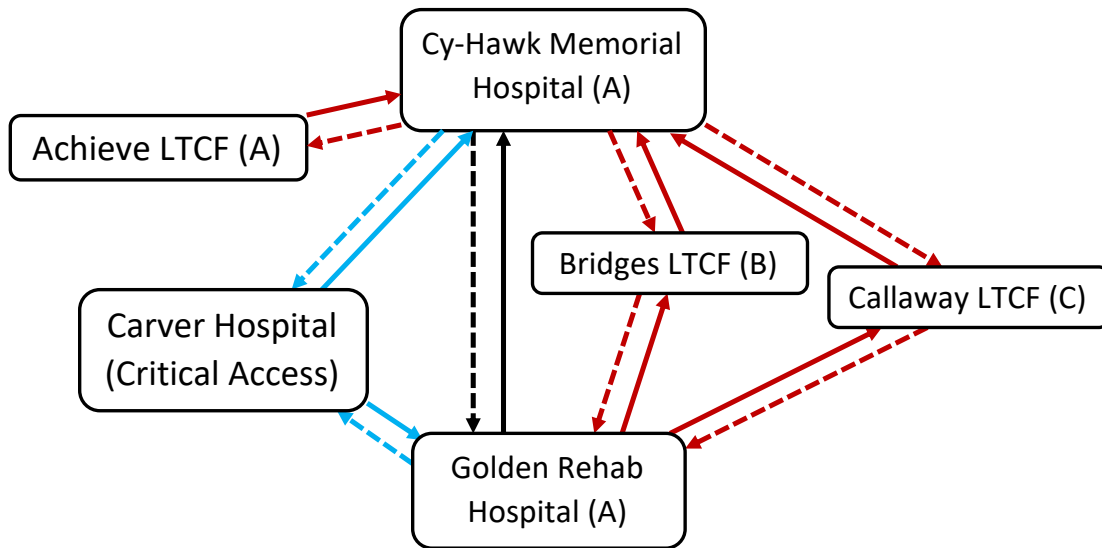
APPENDIX D

C. auris FLOWCHART



APPENDIX E

REFERRAL TRANSFER NETWORK *C. auris*



APPENDIX F

ICAR ASSESSMENT – MEMORIAL HOSPITAL PAGE I

Record ID 10

Page 1

Recommendations Summary

The following are a summary of all the recommendations made for your facility during the ICAR process. If there was no recommendation made for a specific policy or protocol, it is not included in this summary. Complete data for all responses is included after this summary as well as additional information boxes with additional resources.

Hand Hygiene

Facility specific recommendations for SUPPLIES: Some alcohol hand rub dispensers are empty or non-functional. Ensure EVS is checking that dispensers are full and functional at least once per day.

Facility specific recommendations for HAND SANITIZING STATIONS: _____ Some alcohol hand rub dispensers are empty or non-functional. Ensure EVS is checking that dispensers are full and functional at least once per day.

Personal Protective Equipment

Facility specific recommendations for SUPPLIES: _____ Store gowns in places that are easily accessible to staff. Such as near the entrance of treatment rooms.

Environmental Services

Facility specific recommendations for REUSABLE/NON-DISPOSABLE EQUIPMENT CLEANING AND DISINFECTION: Clean and disinfect gait belts between patients, avoiding using the same belt on multiple patients before without taking steps to clean and disinfect it.

Facility specific recommendations for CLEANING PRODUCTS: Utilize a cleaning product from the EPA List P: Antimicrobial Products Registered with EPA for Claims Against Candida Auris.

Sterilization and Disinfection of Reusable Devices

Facility specific recommendations for STERILIZATION TRAINING: _____

General Recommendations and Thoughts

The following are few general recommendations for your facility based on this assessment.

Thank you for allowing me to complete an assessment at your facility. Feel free to contact me about any of the recommendations in this assessment. I am more than happy to discuss strategies to strengthen infection prevention and control at your facility anytime.

APPENDIX F

ICAR ASSESSMENT – MEMORIAL HOSPITAL PAGE 2

Andrew's Test Zone
Record ID 10
Page 2

Guidelines And Resources

NOTE: If a hyperlink in this Guidelines and Resources section is listed on a single line, clicking directly on it should take you to that resource. If a hyperlink is split between two lines, Adobe cannot correctly convert the hyperlink. In these instances, copy and paste the text of the hyperlink into your internet browser to access the resource.

Based on this infection control assessment, it is recommended you integrate the following Quick Observation Tools (QUOTs) for Infection Prevention into your infection prevention and control program to enhance your ability to assess and audit staff compliance with IPC policies and protocols:

[-] Dirty Area:
<https://www.cdc.gov/infectioncontrol/pdf/QUOTS/Reprocessing-Dirty-Area-Disinfection-Sterilization-P.pdf>

Based on this infection control assessment it is recommended you review the following infection prevention and control resources:

[-] Guideline for Hand Hygiene in Healthcare Settings: <http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>

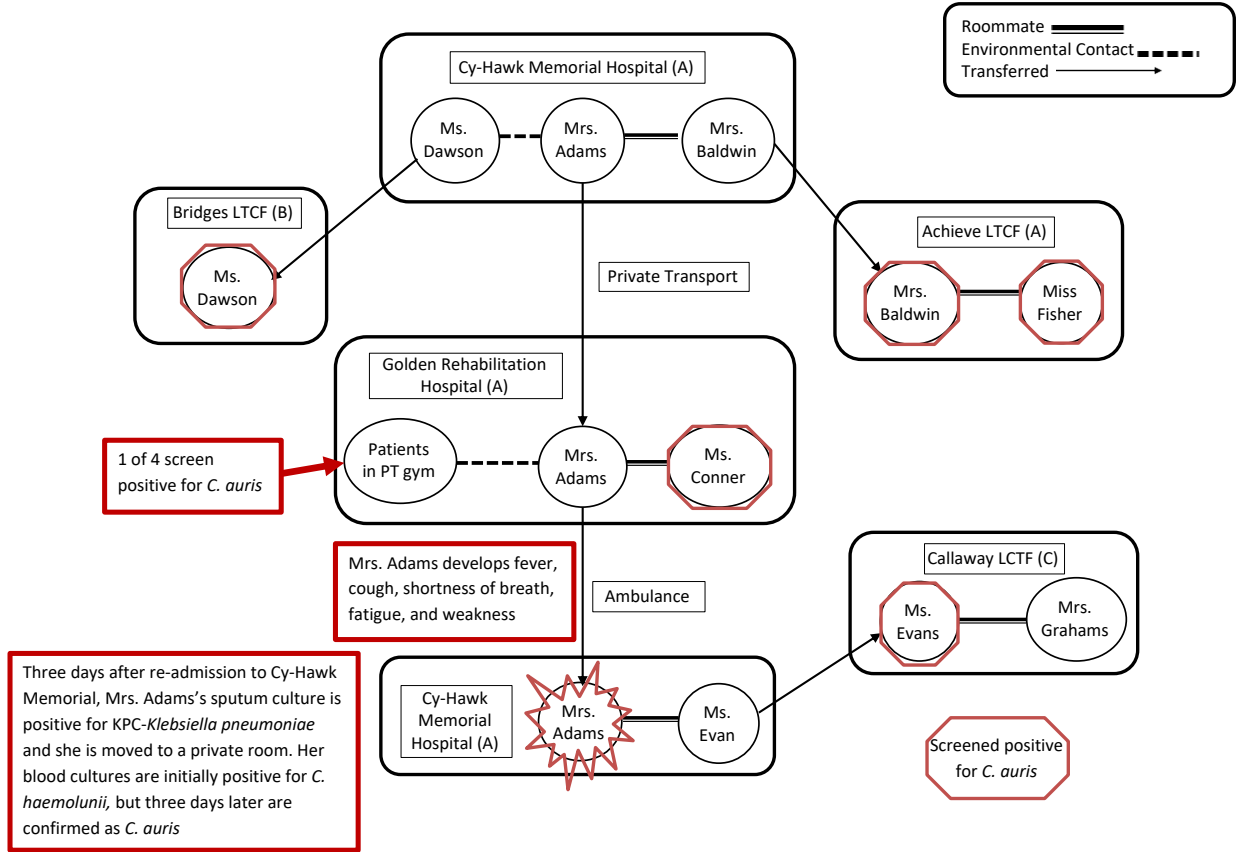
[-] Hand Hygiene in Healthcare Settings: <https://www.cdc.gov/handhygiene/>

[-] Hand hygiene auditing tool - Measuring Hand Hygiene Adherence: Overcoming the Challenges: https://www.jointcommission.org/-/media/tjc/documents/resources/hai/hh_monograph.pdf

[-] CDC Guidelines for Environmental Infection Control in Health-Care Facilities (2003): <https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html>

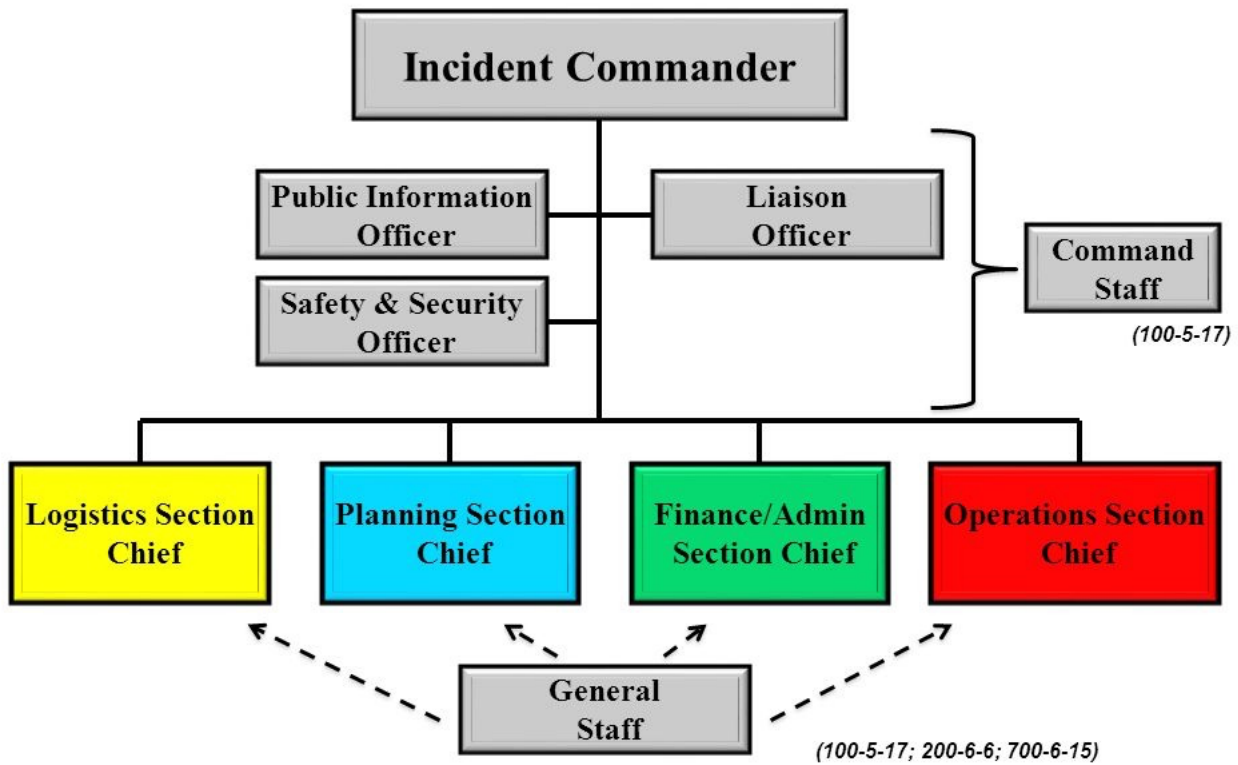
APPENDIX G

C. auris FLOWCHART



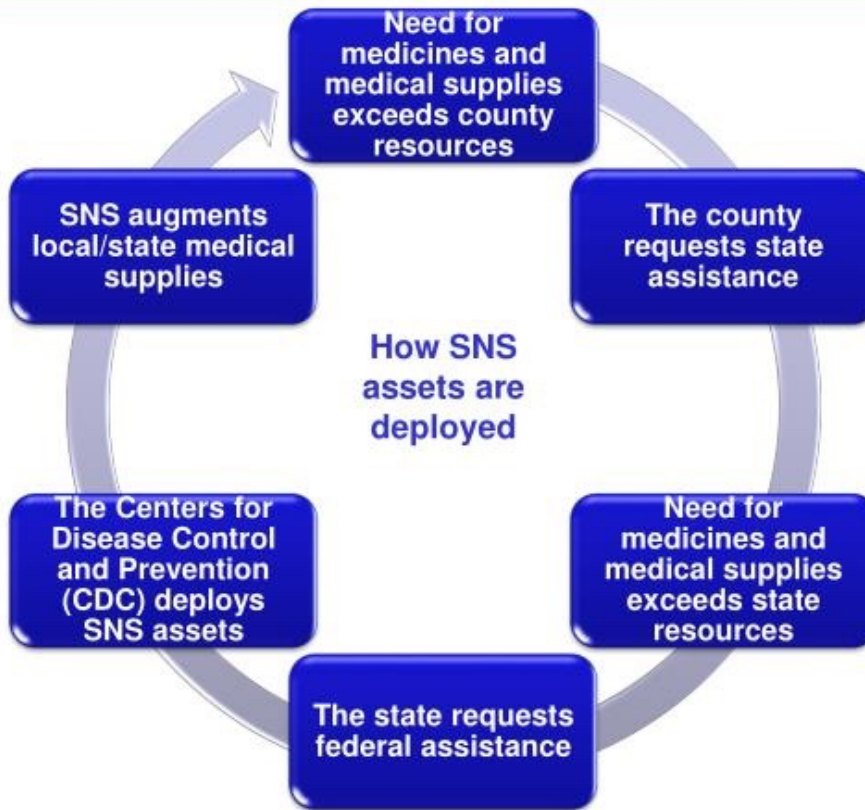
APPENDIX H STRUCTURE OF THE INCIDENT COMMAND SYSTEM

Incident Command System (ICS) Model



APPENDIX I STRATEGIC NATIONAL STOCKPILE PROCESS

SNS Request



APPENDIX J

DEFINITIONS

Antimicrobial Resistance: Occurs when microorganisms change over time and no longer respond to antimicrobials, making infections difficult to treat and increasing the risk of disease spread, severe illness, and death.

Cluster: An aggregation of cases grouped in place and time that are suspected to be greater than the expected case number.

Colonization: The presence and replication of microorganisms on or in a host or object (no immune response from host).

Contact Precautions: Set of infection prevention and control measures that are used in addition to standard precautions to prevent the spread of microorganisms through direct or indirect contact (gloves, gowns, etc.).

Enhanced Barrier Precautions: Set of infection prevention and control measures that are used in addition to standard precautions to prevent the spread of microorganisms during high-contact resident care activities (gloves, gowns, etc.). For use in the nursing home setting only.

Infection: The presence and multiplication of microorganisms on or in a host leading to symptoms and disease (immune response from host).

Point Prevalence: A measure of the proportion of people in a population who have a disease or condition at a particular time.

Mitigation: Actions taken to minimize the severity and seriousness of problematic events, such as clusters or outbreaks.

Standard Precautions: Basic infection prevention and control measures that apply to all patient care (hand hygiene, PPE, etc.).

Screening: Strategy used to look for disease before symptoms present.

Surveillance: The practice of monitoring the spread of disease to establish patterns of progression.

APPENDIX K ACRONYMS

C. auris: *Candida auris*

MDRO: Multi-Drug Resistant Organism

VIM: Verona Integron-Encoded Metallo- β -Lactamase

HAI: Healthcare-Associated Infection

SNS: Strategic National Stockpile

CDC: Centers for Disease Control and Prevention

Iowa HHS: Iowa Department of Health and Human Services

SHL: State Hygienic Laboratory at the University of Iowa

LTCF: Long-Term Care Facility

LTACH: Long-Term Acute Care Hospital

SNF: Skilled Nursing Facility

VSNF: Ventilator-Equipped Skilled Nursing Facility

PT: Physical Therapy

HCW: Health Care Worker

PIO: Public Information Officer

PPE: Personal Protective Equipment

IP: Infection Preventionist

ICAR: Infection Control Assessment and Response

ICS: Incident Command System

KPC: *Klebsiella pneumonia carbapenemase*

WORKSHEET AND NOTE TAKING