

**Indiana
Department
of
Health**

Enteric Disease Outbreaks in Congregate Care Settings

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OUR MISSION:
**To promote, protect, and improve
the health and safety of all Hoosiers.**

OUR VISION:
**Every Hoosier reaches optimal health
regardless of where they live, learn,
work, or play.**



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Enteric Disease

- **Enteric** = of or pertaining to the small intestines
 - Broader term for disease of the upper or lower GI track.
- Enteric diseases are typically associated with foodborne disease
 - Foodborne disease = illness caused by ingestion of contaminated food

CDC estimates that each year roughly 1 in 6 Americans (or 48 million people) gets sick, 128,000 are hospitalized, and 3,000 die of foodborne diseases.



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Symptoms of Enteric Agents

Depends on the agent
Symptom onset can be immediate or take months to manifest

- **Nausea**
- **Vomiting**
- **Diarrhea***
- Fever
- Abdominal cramping

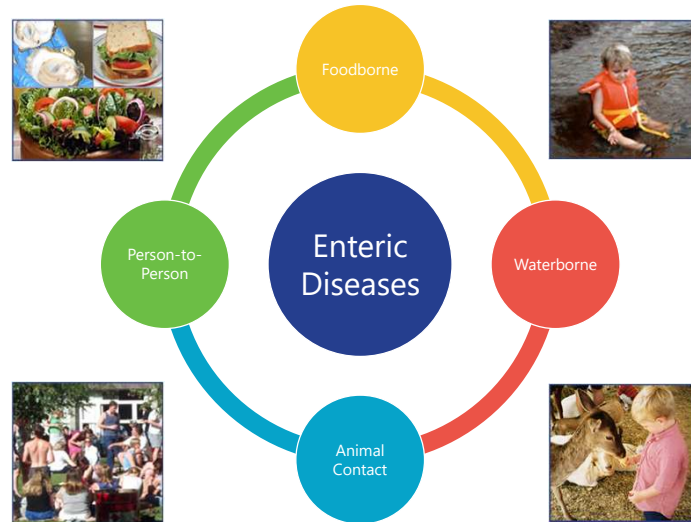


*Diarrhea = ≥ 3 loose stools in a 24-hour period



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Modes of Transmission



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High Risk Populations

Children younger than age 5

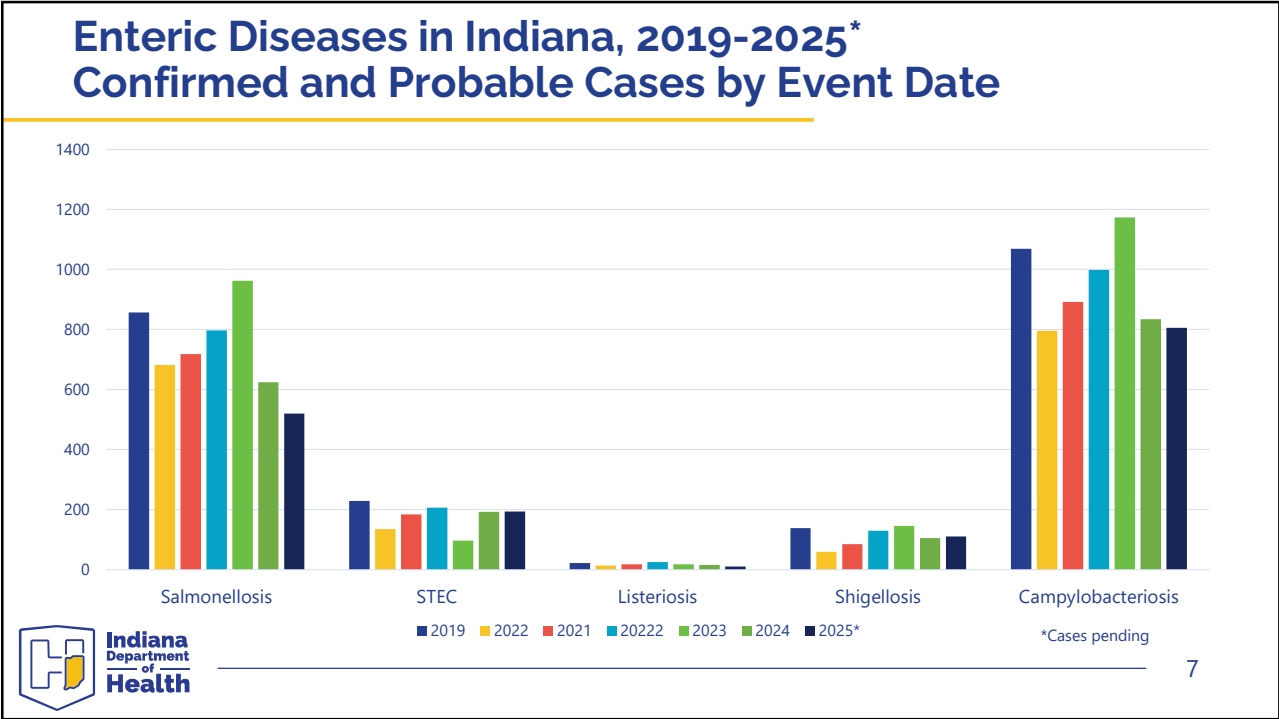
- Higher rates of *Salmonella* infection than any other age group

More likely to have severe infections:

- Young children
- **Older adults**
- **People with weakened immune systems**



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Enteric Outbreaks

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Enteric Outbreaks in Indiana

- IDOH investigated **150** enteric outbreaks in 2025
- Majority of the outbreaks were caused by salmonellosis or norovirus
 - **91** outbreaks occurred in long-term care facilities



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Definition of Outbreak

- **Two or more cases of a similar illness among individuals who have had a common exposure**

Critical components of definition:

- Same diagnosis or symptoms and signs suggestive of same illness
- Clear association between cases, with or without a recognized common source (i.e., epi-link)
- Cases do not live in the same household



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Definition of Cluster

- More cases than expected for given geographic location and time
- No immediately obvious association between cases
- Suggestive of an outbreak but needs further exploration to make determination



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Reporting Criteria

- Please report **any suspected outbreaks** based on the following criteria:
 - When you detect an increase in gastrointestinal illnesses above the expected baseline, or "normal" rate in the facility
 - When there are more suspected cases than usual in a particular wing or cluster
 - When there is a significant increase in staffing being out sick due to GI symptoms



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How to Report an Outbreak



- If you suspect that an acute gastrointestinal illness outbreak is occurring in your facility:
 - LTCF Reporting: Submit an Incident Report Form through the Incident Reporting System facilitated through the IDOH Gateway with your Access Indiana account
 - Other healthcare settings: Contact IDOH Infectious Disease Epidemiology and Prevention Division Enteric Disease Team to report the outbreak.



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Preventing Enteric Outbreaks in LTC and Acute Care Settings

- Appropriate sourcing and preparation of eggs, staff training, and temperature control during food preparation.
- Effective environmental cleaning and disinfection.
- Exclude ill staff.
- Encouraging effective hand hygiene and preventing cross-contamination through gloving and gowning.



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<https://pubmed.ncbi.nlm.nih.gov/18474129/>

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Listeriosis Outbreak with LTC Facility Residents



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What is Listeriosis?

Infection caused by the bacteria, *Listeria monocytogenes*

Pathogen can naturally be found in:

- Animals, including pets sick with listeriosis
- Environmental factors, such as water, soil, sewage
- Contaminated food and rotting vegetation
 - The main source of human illness

The disease primarily affects **pregnancies, newborns, older adults (65+), and those with a weakened immune system**

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What is Listeriosis?

Can spread through animal, environmental, or food contact

- Mostly spread through contaminated food
- During pregnancy – spreads to baby

Incubation period:



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Outbreak Overview

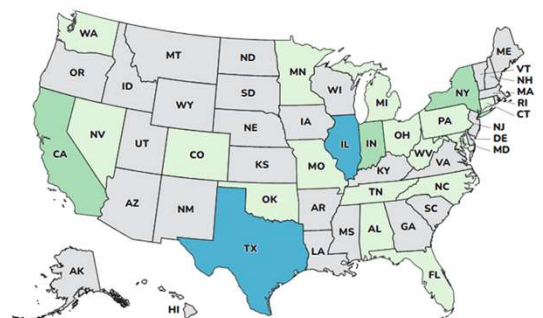
2018-2025

Cases: 42

Hospitalizations: 41

Deaths: 14

States: 21



Number of Sick People

● 1 to 2

● 3 to 4

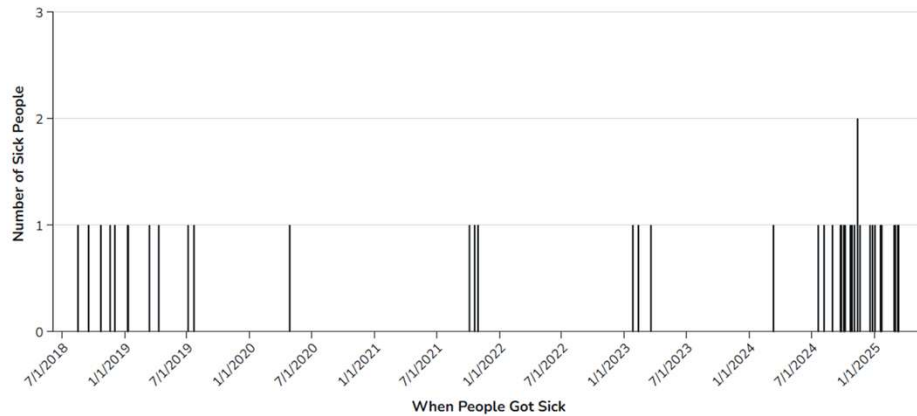
● 5 to 6



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When People Got Sick



Early Epi Details and Traceback

- **Early Common Exposures:** Acute care and Long-term care facilities.
 - Complicated collection of food histories and traceback
- IN patient example:

Hospital A: 11/25/2024-11/29/24 - Admission

Hospital A: 11/29/24- 12/03/2024 - Readmission from home

Hospital B: 12/03/24- 12/05/24 - Hospital transfer

Hospital C: 12/05/24- 12/19/24 - Hospital transfer

LTCF: 12/19/24- 12/30/24

Hospital A: 12/30/24 ER visit (positive Listeria culture)

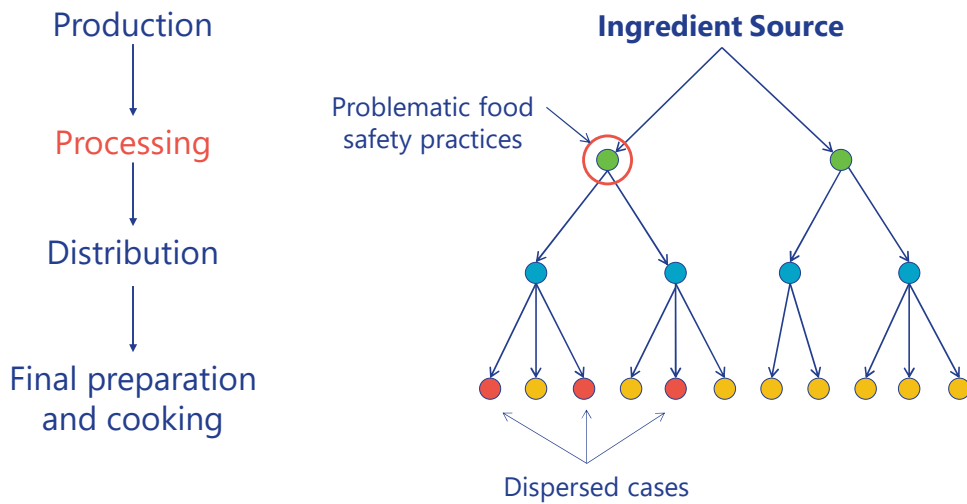
Hospital A: 01/01/25 – unknown – Admission

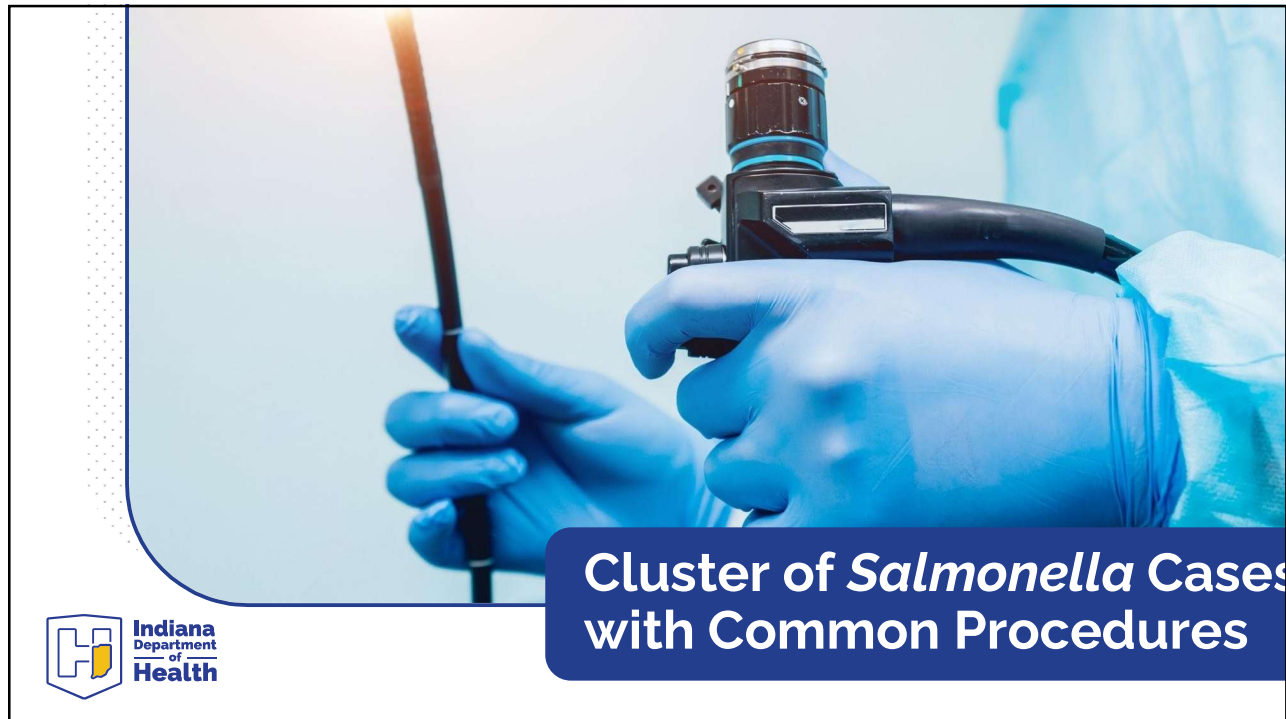
Outcome

- Outbreak linked to Lyons ReadyCare and Sysco Imperial frozen supplemental shakes manufactured by Prairie Farms from the Prairie Farms Dairy facility in Fort Wayne, Indiana.
- Lyons Magnus LLC initiated a recall of the product on 2/22/2025.



Dispersed Outbreak Scenario





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Initial Notification

- IDOH Lab emailed the Enteric Epidemiology team on Jan. 3, 2023
- Three isolates, 0-1 alleles apart by whole genome sequencing (WGS)
- Identified as serotype *Salmonella* Soerenga

Patient	Serotype	Collection Date	Residence	Patient Age (Years)	Patient Sex
Patient A	Soerenga	Oct. 12, 2022	IL, County C	61	Male
Patient B	Soerenga	Nov. 1, 2022	IN, County L	36	Female
Patient C	Soerenga	Dec. 15, 2022	IN, County L	61	Female

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Why did this catch our attention?

- Soerenga is generally rare serotype of *Salmonella*
 - CDC National Enteric Disease Surveillance: *Salmonella* Annual Report, 2016
 - Appendix 3a. Culture-confirmed *Salmonella* infections reported to Laboratory-based Enteric Disease Surveillance (LEDS) by serotype and year, 2006-2016

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Soerenga	3	7	5	5	4	4	5	4	9	9	3	58

- Only 58 samples identified nationally with this rare serotype from 2006-2016



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Patient Interviews

- Grocery stores: three different locations of Strack and Van Til
 - Each patient reports primarily shopping elsewhere though
- No food items in common
- No gatherings or events in common
- No restaurants in common
- Varied animal and pet food contact



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Medical Records

Patient A	Patient B	Patient C
<ul style="list-style-type: none"> • Sample collected via colonoscopy • Facility M 	<ul style="list-style-type: none"> • Sample collected via colonoscopy • Facility M 	<ul style="list-style-type: none"> • Sample collected via colonoscopy • Facility M

*Facility M is an Outpatient Gastrointestinal Surgical Center, part of a larger hospital



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Colonoscopies lead to many more infections than previously thought

Johns Hopkins study finds some outpatient centers have infection risks 100 times higher than expected

Colonoscopy Patients Put at Infection Risk

by Katrina Woznicki
April 1, 2005

MONROEVILLE, Pa., April 1—About 200 patients who underwent colonoscopy at a Pittsburgh-area hospital over a four-month span are being urged to undergo hepatitis and HIV testing because the colonoscopes were not properly cleaned.

AN SPREAD OF ANTI-Y BACTERIA

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Collaborative Cross-Team Response

January 19th

- Healthcare Associated Infections senior epidemiologist
- District Infection Preventionists
- Local Health Department

January 20th

- Notification to Facility M via Infection Prevention Department
 - Initial information gathering about procedures, patients, and equipment
 - Acquired GI clinical team contact information
- Group call with Facility M

February 7th and March 9th

- Virtual consultations with CDC DHQP and DFWED Teams



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Call with Facility M – January 20, 2023

Information Learned:

- Scope X used for all three patients
- One physician performed the three procedures
- Facility rarely finds *Salmonella*-positive samples via colonoscopy
- Facility has 24 scopes and performs 500-600 procedures per month

Facility Response:

- Scope X removed from use
- Rapid indicator test performed (protein, blood, lipids, carbs) – negative/clear
- Sent scope X to manufacturer for evaluation and inspection
- Reviewed education on scope cleaning, performed additional high-level disinfection



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National Hypothesis Generating Questionnaire

- IN created a modified NHGQ – January 30, 2023
 - Re-interviewed both IN patients
 - IL re-interviewed their patient
- Focused on:
 - Meat and poultry, particularly pork products
 - Fruit & Vegetables
 - Restaurants
 - Clinical information/details



Clinical Clarification

	Patient A	Patient B	Patient C
GI Consult	Sept. 12, 2022	Sept. 26, 2022	Nov. 7, 2022
Colonoscopy	Oct. 12, 2022	Nov. 1, 2022	Dec. 15, 2022
Symptoms	Increase in diarrhea occurrences	Constipation & diarrhea, GERD, cramps	Abdominal pain, rectal bleeding, diarrhea
Onset Date	Oct. 5, 2022	Chronic/Unknown	Nov. 2, 2022
Indication	Wellness care, family history colon & rectal cancer	Chronic IBS, change in insurance	Abnormal abdominal CT Oct. 26, 2022, chronic GI issues, polyps



What else did we do in the interim?

Evaluated policies and procedures from Facility M – cleaning, disinfection, outbreaks, etc.

Reviewed medical records for 123 patients where Scope X was used

Consulted with CDC DHQP, particularly focused on simethicone

Infection Control Assessment and Response (ICAR) in-person visit



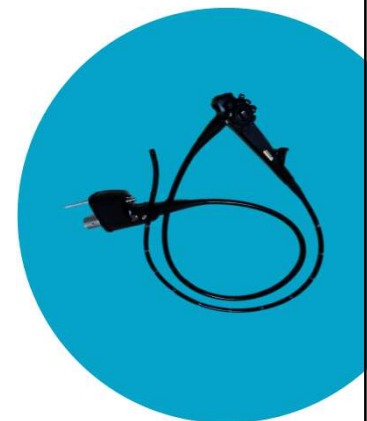
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Scope X & Medical Record Review

- Approximately 5 years old
- Typically used one to three times daily
- Received list of 123 patients where scope X was utilized from June 20, 2022 – Jan. 20, 2023 and reviewed medical records in CareWeb™

Patient	Colonoscopy Date	Culture Results
Patient 1	8/12/2022	Negative
Patient 2	8/19/2022	Negative
Patient A	10/12/2022	<i>Salmonella Soerenga</i>
Patient B	11/01/2022	<i>Salmonella Soerenga</i>
Patient 3	11/23/2022	<i>Aeromonas Hydrophilia</i>
Patient C	12/15/2022	<i>Salmonella Soerenga</i>
Patient 4	12/19/2022	Negative



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Culture of scope X

- Scope returned from manufacturer, no issues
- Facility M performed culture on Scope X in their hospital laboratory following the FDA/CDC/ASM Working Group on Duodenoscope Culture Protocol
 - No growth after 48 hours
 - No action required per protocol
- Concern for potential false negative results?
 - Biofilms
 - Low microbial burden

Duodenoscope Surveillance Sampling & Culturing

Reducing the Risks of Infection

Department of Health and Human Services Collaboration



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Simethicone

Silicone based defoaming agent

Insoluble in water, alcohol, and HLD

Difficult to remove, impedes drying

Residues may be associated with biofilm development



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ICAR Visit – Feb. 22, 2023

- Infection Control Assessment and Response (ICAR)
 - Met with 15 individuals from Facility M:
 - Infection Preventionists
 - Physicians and nursing staff
 - Administrators
 - Managers/Directors
 - Laboratory Staff
- Tour of the on-site clinical laboratory, a procedure room, instrument reprocessing area, instrument storage, and storage around the procedure room (including clean utility, dirty utility, EVS closet, bulk storage, etc.)



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Infection Control Assessment and Response (ICAR)

What is an ICAR?

- **Systematically assess a healthcare facility's IPC practices**
- **Guide quality improvement activities by addressing identified gaps.**
- **ICARs are collaborative and non-punitive**
- **Sharing best safe practices**

The best part of an ICAR!
ICARs are collaborative and non-punitive



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Infection Control Assessment and Response (ICAR)

1. Training, Audits, Alerts and Feedback
2. Hand Hygiene
3. Transmission Based Precautions (TBP)
4. Environmental Services (EVS)
5. High-level Disinfection and Sterilization
6. Injection Safety
7. Point of Care (POC) Blood Testing
8. Wound Care
9. Healthcare Laundry
10. Antibiotic Stewardship
11. Water Exposure



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ICAR Visit – Facility/Protocol Suggestions



Proper storage and separation of clean vs. dirty supplies



Manage traffic flow



Utilize appropriate hand hygiene and gloves use



Implement timers, task lists, or other methods to ensure consistency and adherence



Send devices for routine maintenance

Ensure staff select and properly wear appropriate PPE

Create, update, and provide policies and guidance



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ICAR Visit – Facility/Protocol Suggestions

IPC practices surrounding sinks

Observation: Paper schedules, equipment and related cords/hoses, pens/pencils, scissors, etc. were noted near the sinks within splashing distance (about 3 feet)

Recommendation: To prevent contamination do not store clean items within sink splash zone. Consider installing splash guards where necessary.

[CDC's Reduce Risk from Water](#)



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Recommendations for Scopes

Simethicone

- Perform risk assessment of continued use of simethicone

Scope Testing

- Implement routine quality assurance tests
- Semi-regular culture/sampling

Surveillance

- Create a surveillance system capable of monitoring by department or procedure

Training

- Perform, review, and audit staff training and skills



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Results and Decisions

Facility M

- Scope X never returned to use
- Facility still utilizes diluted simethicone
- Stool cultures prior to procedures
- Successful Joint Commission Survey in March 2023
- Developed Shared Governance Committee

IDOH

- Closed investigation as an outbreak with a suspect vehicle of Colonoscope X
- Series of contaminated samples vs ill individuals
- Monitor for related *Salmonella* Soerenga isolates



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Questions?

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