Recognizing Risk Using Reservoirs

Session 3

Recognizing Risk Using Reservoirs: A Review

PROJECT FIRSTLINE
CDC's National Training Collaborative for Healthcare Infection Prevention & Control

NORTH Dakota | Health
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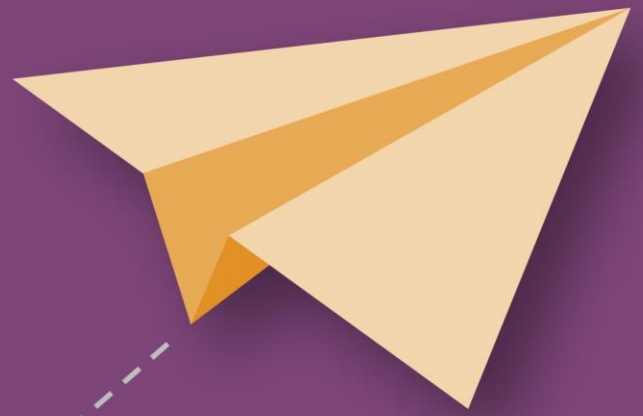
Welcome

Agenda

- Welcome and Introductions
- Recognizing Risk Using Reservoirs
- How Did the Germ Spread
- Bringing It Together
- Conclusion



Acknowledgement

- This Project Firstline Presentation is brought to you by the North Dakota Department of Health (NDDoH), Division of Infectious Diseases and Epidemiology, and presented by NDDoH Infection Prevention Consultants.
- All presenters have been trained on Project Firstline materials in correlation with the Centers for Disease Control and Prevention (CDC).

Introductions

Eric Akosah Appiah, BSN

- Bismarck, ND
- Infection Prevention Consultant
- Project First Line Facilitator

Introductions

Sherry Walters RN BSN

- Devils Lake Area
- Infection Prevention Consultant
- Project Firstline Facilitator

Recognizing Risk Using Reservoirs

Recognizing Risk

- **Risk Recognition:** Seeing the potential for a problem to happen.
  - Seeing a potential problem doesn't mean the problem will definitely happen!
  - We take action to keep something bad from happening.
- **Reservoir**: a place where germs live and thrive.
- **Pathway**: a way for germs to be spread from their reservoir to another reservoir, or to a person to infect.

Germs in Healthcare

Reservoirs in the human body: skin, gastrointestinal (GI) system or "gut," respiratory system, blood, reproductive system.

Reservoirs in the healthcare environment: water and wet surfaces, dry surfaces, dirt and dust, and devices

Common pathways for germ spread in healthcare:

- Touch
- Breathing in
- Splashes or sprays
- Bypassing or breaking down the body's natural defenses

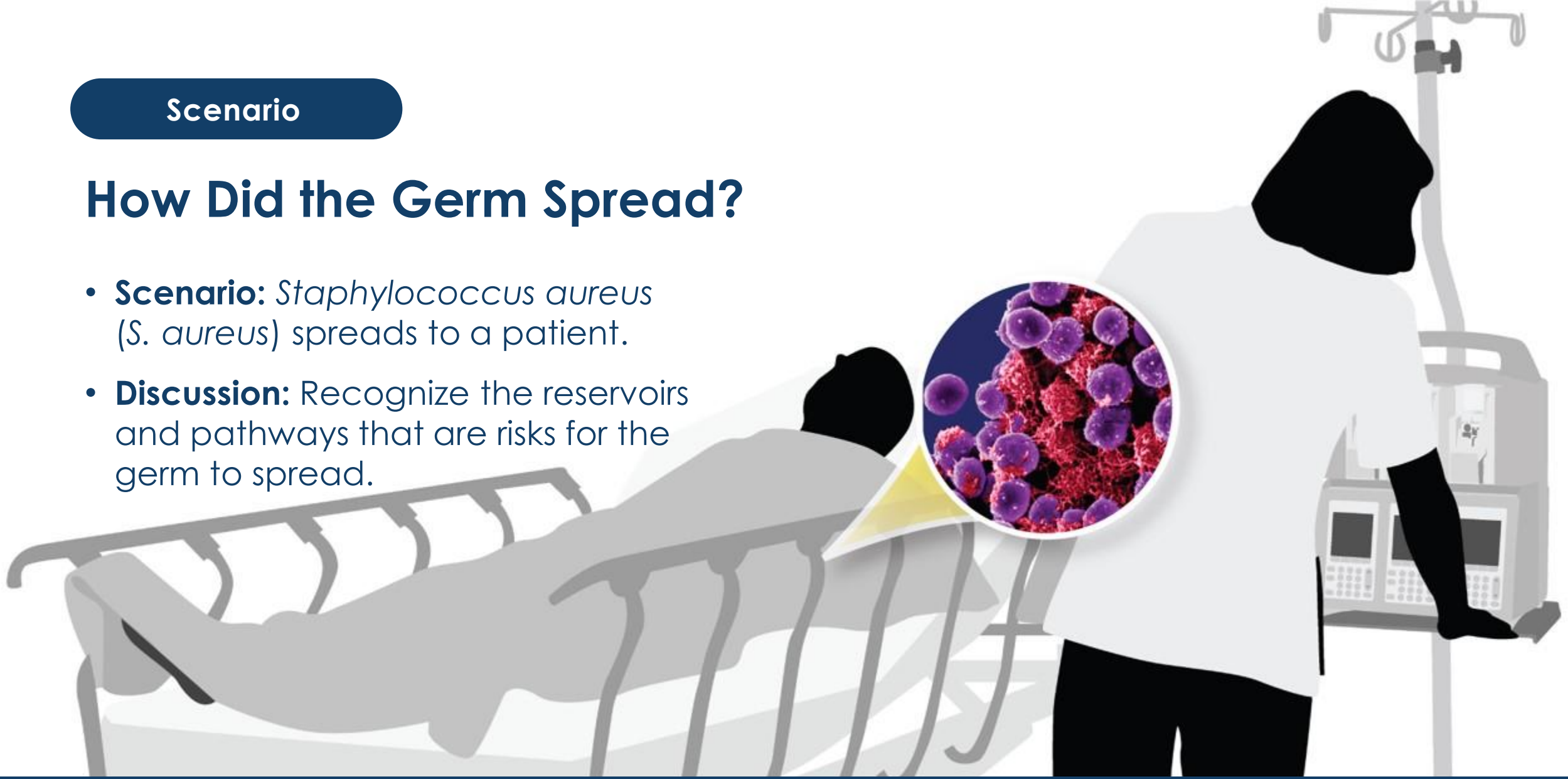
Elements of How Germs Spread and Cause Infection

How Did the Germ Spread?

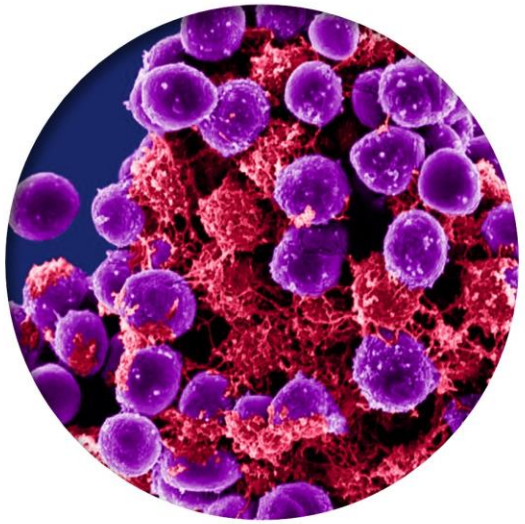
Scenario

How Did the Germ Spread?

- **Scenario:** *Staphylococcus aureus* (*S. aureus*) spreads to a patient.
- **Discussion:** Recognize the reservoirs and pathways that are risks for the germ to spread.



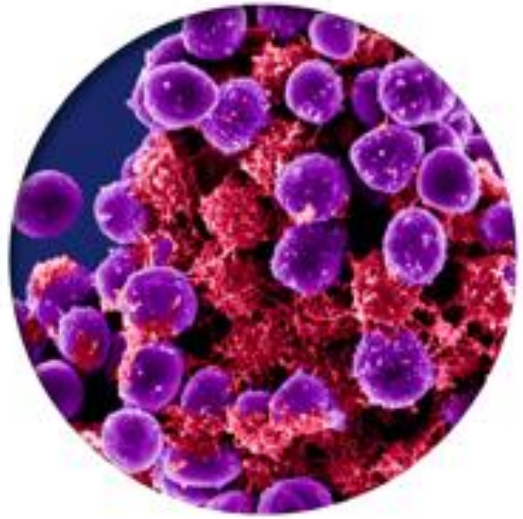
Staphylococcus aureus (*S. aureus*) Basics



- Commonly called "staph"
- Type of germ (bacteria)
- Common, most of the time does not cause any harm
- Can cause serious or fatal infections
- Some types are resistant to antibiotics
- Anyone can get an infection, but some groups are at higher risk:
  - People with chronic conditions, such as diabetes or cancer
  - Patients in healthcare

From *Staphylococcus aureus* in Healthcare Settings | HAI | CDC

More Staphylococcus Aureus Information



Staphylococcus aureus is a type of germ that about 30% of people carry in their noses. Most of the time, staph does not cause any harm; however, sometimes staph causes infections. In healthcare settings, these staph infections can be serious or fatal, including:

- Bacteremia or sepsis when bacteria spread to the bloodstream.

- Pneumonia, which most often affects people with underlying lung disease including those on mechanical ventilators.

- Endocarditis (infection of the heart valves), which can lead to heart failure or stroke.

- Osteomyelitis (bone infection), which can be caused by staph bacteria traveling in the bloodstream or put there by direct contact such as following trauma (puncture wound of foot or intravenous (IV) drug abuse).

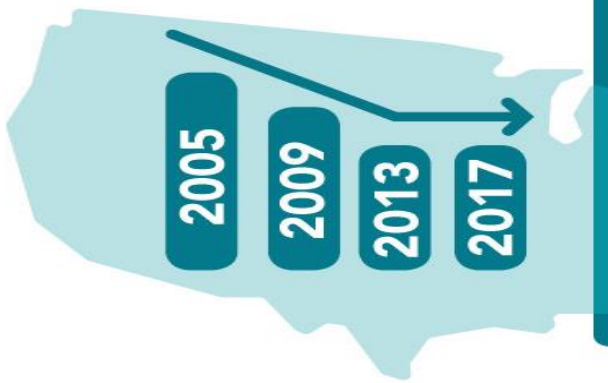
www.cdc.gov; Staph infections can kill | VitalSigns | CDC

CDC Vitalsigns™

PROJECT FIRSTLINE CDC's National Training Collaborative for Healthcare Infection Prevention & Control | NORTH Dakota Be Legendary. | Health

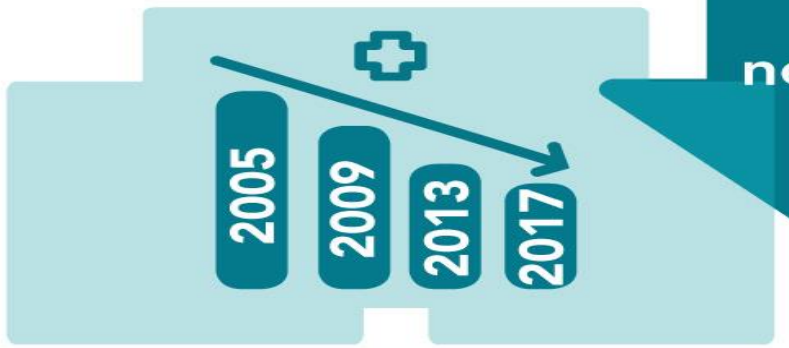
Progress is slowing but success is possible.

US rates of hospital-onset MRSA infections dropped 17% each year until 2013.



MSSA may be rising in communities and progress against MRSA has recently slowed in hospitals.

By 2017, US Veterans Affairs (VA) medical centers reduced MRSA by 55% and MSSA by 12%.



The VA reduced rates of staph infections after adding steps like screening new patients.

www.cdc.gov; Staph infections can kill | VitalSigns | CDC

Knowledge Check

Traumatic Brain Injury / Concussion | Concussion | Traumatic Brain Injury | CDC Injury Center

What puts people at risk for serious staph infection?

In Communities

- Uncovered or draining wounds, especially in high-contact sports or crowded living
- Sharing personal items, such as towels or razors
- Recent stays in a healthcare facility
- Injection drug use, like opioids

In Hospitals

- Hospital stays or surgery (during and shortly after)
- Exposure to patients carrying or infected with staph
- Medical devices in the body, like intravenous lines (IVs)

In Other Healthcare Facilities

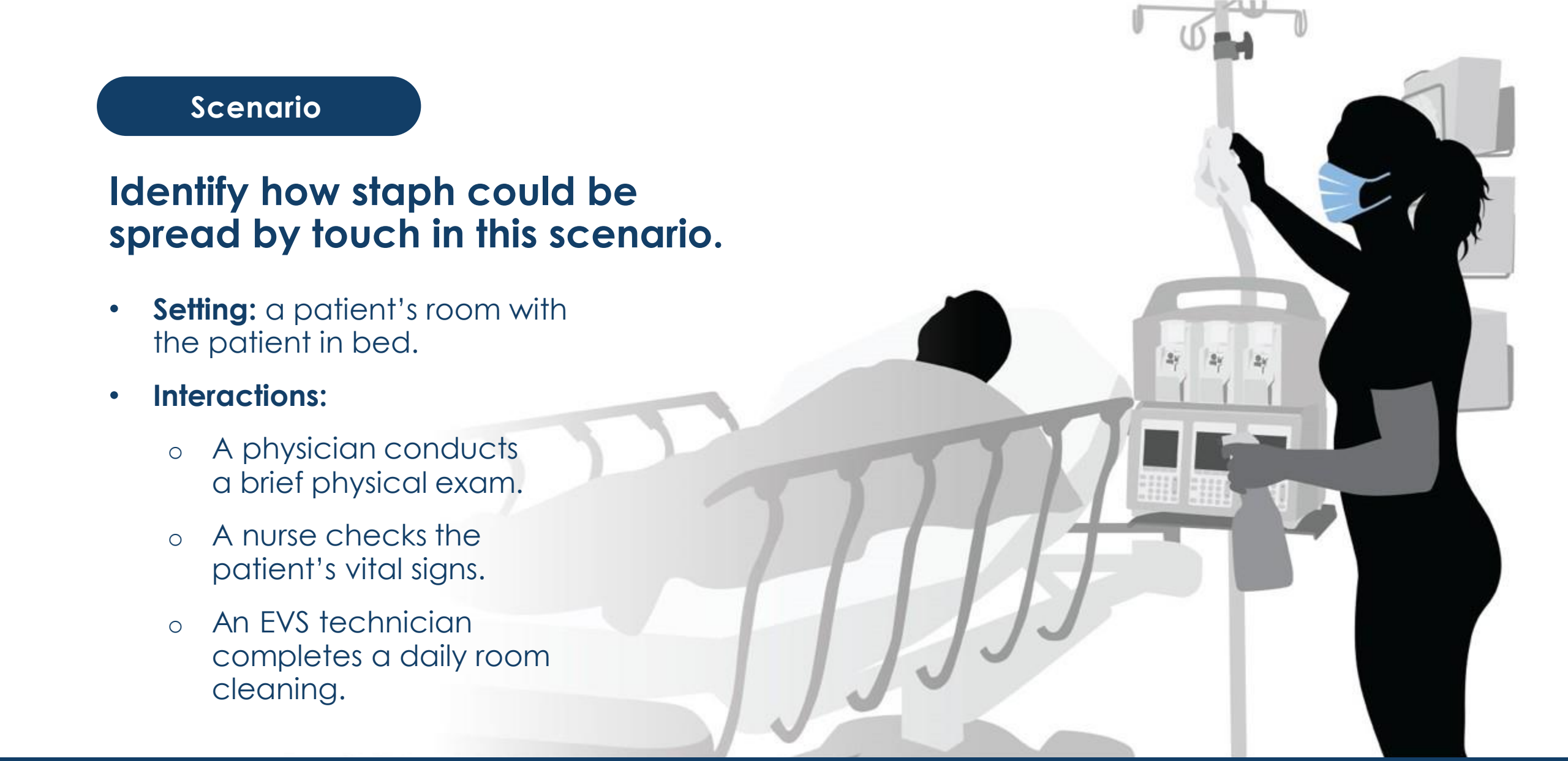
- Outpatient surgery and procedures, like dialysis
- Nursing home stays
- Medical devices in the body, like IVs

www.cdc.gov; Staph infections can kill | VitalSigns | CDC

Scenario

Identify how staph could be spread by touch in this scenario.

- **Setting:** a patient's room with the patient in bed.
- **Interactions:**
  - A physician conducts a brief physical exam.
  - A nurse checks the patient's vital signs.
  - An EVS technician completes a daily room cleaning.



Recognizing Reservoirs and Pathways

Reservoirs:

Skin

Gut

Respiratory system

Blood

Water and wet surfaces

Dry surfaces

Devices

Dirt and dust

Pathways:

Touch

Breathing in

Splashes and sprays

Bypassing/breaking down the body's defenses

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Scenario

What are your thoughts

Identify how staph could be spread by touch in this scenario.

- **Setting:** a patient's room with the patient in bed.
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Discussion

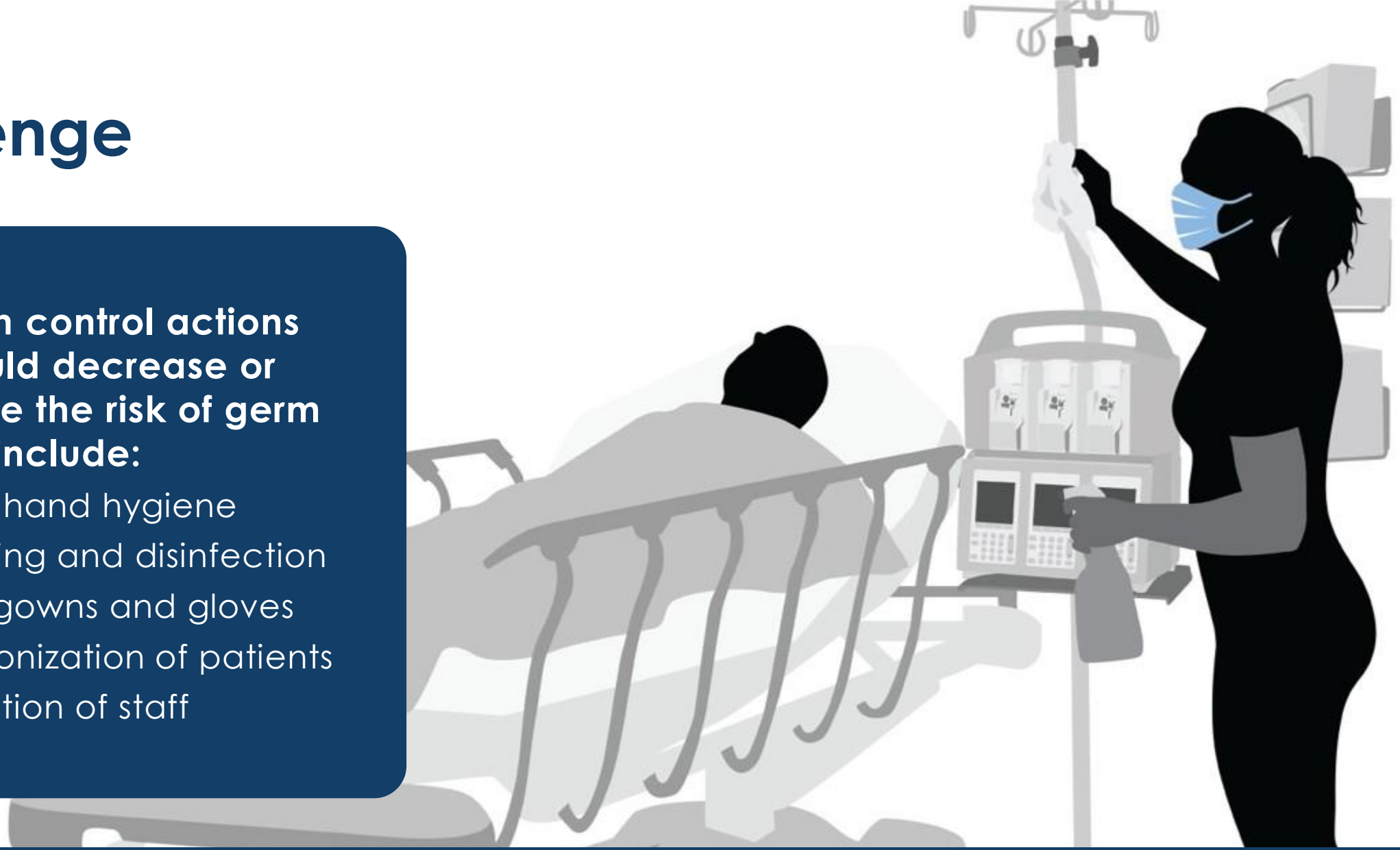
Interactions:

- A physician conducts a brief physical exam.
- A nurse checks the patient's vital signs.
- An EVS technician completes the daily room cleaning.

Challenge

Infection control actions that could decrease or eliminate the risk of germ spread include:

- Better hand hygiene
- Cleaning and disinfection
- Using gowns and gloves
- Decolonization of patients
- Education of staff



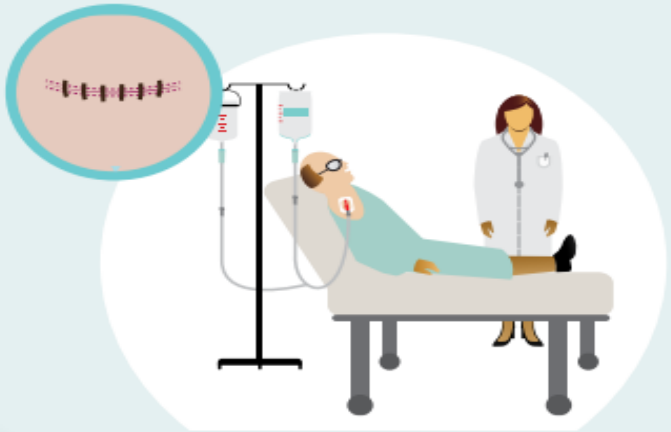
Bringing It Together

Reflection

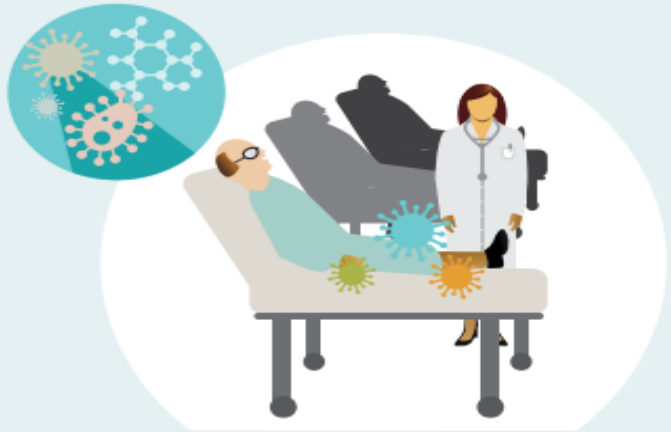
- ❑ Thinking about your daily work, what is one step that you can take to recognize an infection risk?
- ❑ Jot down one action you can take to stop the spread of germs.

Questions

Protect patients from antibiotic-resistant infections.



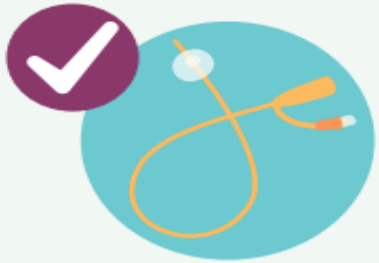
Surgeries and single-use catheters help treat patients, but they can be pathways for bacteria to enter the body.



Bacteria can be spread when appropriate infection control actions are not taken.

Antibiotics save lives, but poor prescribing practices puts patients at risk.

Combine infection control actions with every patient to prevent infections in health care.



Prevent infections from catheters and after surgery.

+

Prevent bacteria from spreading.

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Improve antibiotic use.

SOURCE: CDC Vital Signs, March 2016

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Conclusion

Key Takeaways

- ✓ Germs are found in certain places – called reservoirs – and need a pathway to spread to other places and people.
- ✓ When you understand where germs live and how they might be moved from one place to another or to people, you can recognize the risk for it to happen.
- ✓ When you recognize risks for germs to spread, you can choose the right infection control actions to keep it from happening.

Resources

CDC:

- Staphylococcus aureus in Healthcare settings/HAI/CDC
- Staph infections can kill/VitalSigns/CDC
- Strategies to Prevent S. aureus BSIs in Acute Care Facilities | CDC
- 2016-03-vitalsigns.pdf (cdc.gov)
- https://youtu.be/5t7BqsXFvOg-

How to Get Involved and Feedback

Project Firstline on CDC.gov: https://www.cdc.gov/infectioncontrol/projectfirstline/index.html

And

Project Firstline: North Dakota Department of Health: www.health/nd.gov/projectfirstline

CDC's Project Firstline on Facebook: https://www.facebook.com/CDCProjectFirstline

CDC's Project Firstline on Twitter: https://twitter.com/CDC_Firstline

Project Firstline *Inside Infection Control* on YouTube: https://www.youtube.com/playlist?list=PLvrp9iOILTQZQGtDnSDGViKDdRtIc13VX

To sign up for Project Firstline e-mails, click here: https://tools.cdc.gov/campaignproxyservice/subscriptions.aspx?topic_id=USCDC_2104

- Project Firstline feedback form: https://www.cdc.gov/infectioncontrol/pdf/projectfirstline/TTK-ParticipantFeedback-508.pdf

Evaluation

Take the end of course evaluation for NDBON CEU certificate:

https://ndhealth.co1.qualtrics.com/jfe/form/SV_b2YIVps3qjZEKpM

If you are a room moderator for a group attending under one login, fill out the Group Attendance Form. EACH attendee will need to complete the evaluation form.
Submit all forms to dohpfl@nd.gov

Recordings can be found on:
www.health/nd.gov/projectfirstline

Questions? Email us: dohpfl@nd.gov

Call us: (701)-328-2378