NC SHARPPS *(Surveillance of Healthcare Associated and Resistant Pathogens Patient Safety Program)*

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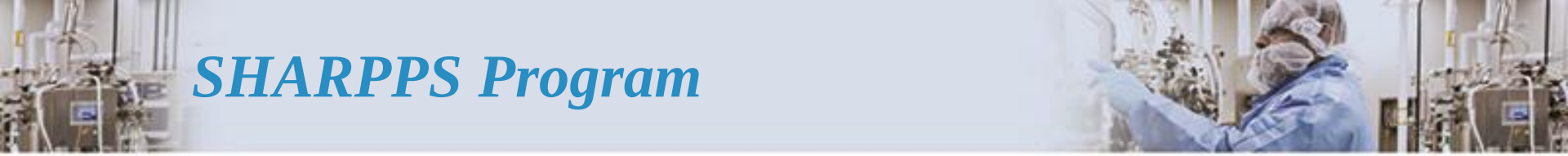
Objectives

- Describe SHARPPS mission and scope of work
- Define a Healthcare Associated Infection (HAI)
- Provide examples of common HAIs
- Summarize scenarios where Local Health Departments would be involved in HAI prevention and/or investigation efforts

SHARPPS Program



- Surveillance for Healthcare Associated and Resistant Pathogens Patient Safety (SHARPPS) Program

- **Mission:** The Program's mission is to work in partnerships to prevent, detect, and respond to events and outbreaks of healthcare-associated and antimicrobial resistant infections in North Carolina.

SHARPPS PROGRAM ACTIVITIES

- Collaborative efforts
- Prevention Activities
- Outbreak response
    - 2015 - 180 outbreaks investigated
- Education
- Surveillance
- Data Validation
- Communication

SHARPPS Program: WHO?

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Team Lead

Shilpa Bhardwaj
HAI Medical Director

Tammra Morrison
Nurse Consultant

Katie Steider
CSTE/CDC Epidemiology Fellow

Heather Dubendris
Epidemiologist

Kristen Pridgen
Campaign Coordinator

What is a Healthcare-Associated Infection?

- Any infection acquired as a consequence of a healthcare intervention or that acquired by a healthcare worker in the course of duty

- Can occur in any healthcare setting

Impact of HAIs

National

Morbidity:

- 1 out of every 25 hospitalized patients
- 1.7 million infections

Mortality:

- 75,000 attributable deaths

Cost:

- 28 – 45 billion dollars

North Carolina

Morbidity:

- Approximately 100 HAIs per year per hospital

Cost:

- 124 – 348 million dollars

Am J Infect Control. 2013 Sep;41(9):764-8.

What do Healthcare Facilities Report?

- Central line-associated bloodstream infections (**CLABSI**)
- Catheter-associated urinary tract infections (**CAUTI**)
- Surgical site infections (**SSI**) following abdominal hysterectomies and colon surgeries
- Positive laboratory results with methicillin-resistant *Staphylococcus aureus* (**MRSA**) bacteria found in the bloodstream
- Positive laboratory results with *Clostridium difficile* (***C. difficile,* CDI**) bacteria found in a stool (fecal) sample
- Ventilator Associated Events (**VAE**)

Where can I see this data?

http://epi.publichealth.nc.gov/cd/hai/figures.html

1. **CLABSI in Adult/Pediatric ICUs**

North Carolina 2015 CLABSI Highlights in Adult/Pediatric Medical, Surgical and Medical/Surgical Wards & ICUs

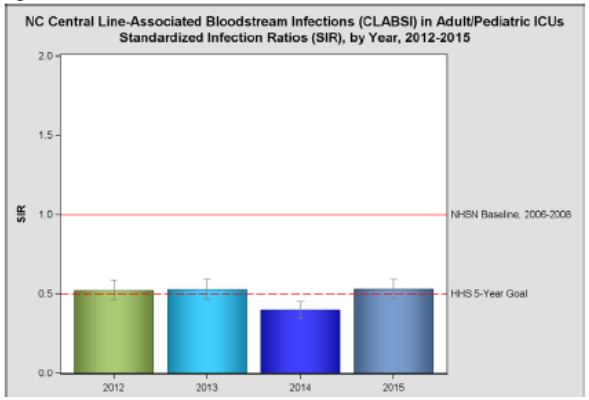
- North Carolina hospitals reported 626 infections, compared to the predicted 1104 infections.
  - This was better than the 2006-2008 national experience.
  - This number is larger than the number of CLABSIs reported in previous years.
- CLABSI surveillance was expanded to include medical, surgical and medical/surgical wards. In previous years, surveillance was limited only to adult and pediatric ICUs.
- In 2015, North Carolina did not meet the U.S. Department of Health and Human Services goal to reduce CLABSIs by 50% from the 2006-2008 baseline experience.
- The most commonly identified organisms from adult and pediatric CLABSI patients were *Candida* and other yeasts/fungi.

Table 1. N.C. Central Line Associated Bloodstream Infections (CLABSI) in Adult/Pediatric Medical, Surgical and Medical/Surgical Wards & ICUs, by Year, 2012-2015

Year	# Observed Infections	# Predicted Infections	How Does North Carolina Compare to the National Experience?
2012	310	637	★Better: Fewer infections than were predicted (better than the national experience)
2013	315	613	★Better: Fewer infections than were predicted (better than the national experience)
2014	248	644	★Better: Fewer infections than were predicted (better than the national experience)
2015*	626	1104	★Better: Fewer infections than were predicted (better than the national experience)

*In 2015, CLABSI surveillance was expanded to include medical, surgical and medical/surgical wards.

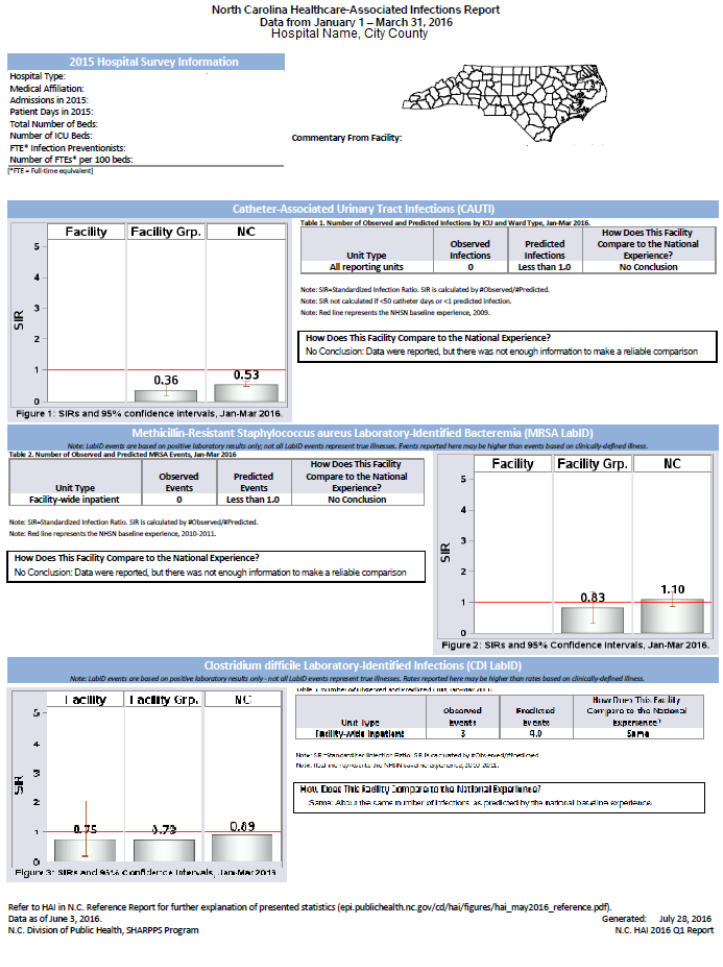
Figure 1.



How to Understand Figure 1:

- Overall (2012-2015), the number of observed CLABSI infections reported in ICUs in North Carolina has been BETTER than predicted based on the national experience
- The number of observed CLABSI infections in ICUs increased slightly in 2015 compared to the previous year

* This figure excludes infections in ward/non-ICU locations, which became reportable in 2015.



Additional Surveillance activities: Carbapenem-resistant Enterobacteriaceae (CRE)

- Resistant to nearly all antibiotics
- >9,000 healthcare-associated infections each year
- Carbapenemase producing CRE (CP CRE)
  - Potential to spread widely
  - Highly resistant
  - High mortality rates
  - Transmission of resistance among bacteria

Additional Surveillance activities: CRE sentinel surveillance

- Described burden
- Assessed for presence and prevalence of mechanisms of resistance among CRE isolates
- Increased awareness
- Increased ability to detect and investigate outbreaks
- Will drive recommendations for continued surveillance

Campaigns

One & Only,
Safe Injection Practices

GetSmart: Know When
Antibiotics Work

GetSmart: Know When Antibiotics Work

- **Antibiotic Resistance** – “One of the world’s most pressing public health problems”
- Resistance is increasing to most commonly prescribed antibiotics
- Public awareness about antibiotic resistance is needed to reverse this dangerous trend.
- NC DPH has partnered with the CDC to increase Public Health Education

GET SMART
About Antibiotics

Infection Control Assessment and Response (ICAR)

- Federal funds were allocated in response to Ebola
- Funds have been used to address infection prevention gaps and decrease the risk of healthcare transmission more broadly
- April 2015 - The Ebola supplemental grant was awarded to the NC Division of Public Health
  - Awarded Increase ability to prevent, detect, and respond to HAIs in non-hospital settings
- DPH Contracted with NC Statewide Program for Infection Control & Epidemiology (SPICE)
- 3 FTE Infection Preventionist hired to conduct assessments

Purpose of ICAR

- Increased collaboration between DPH and LHD's
  - One on one collaboration with Infection Prevention (IP) expert
  - Immediate remediation recommendations provided
- Neither regulatory nor punitive
- Focus is quality improvement and patient safety
- Assist with providing better, safer care to your communities
- They offer an educational opportunity for staff members who might be called upon to investigate healthcare-associated outbreaks and infections
- Feedback and recommendations are provided by very experienced Certified Infection Control experts…free of charge!

Injection Safety Gaps Identified:

Safe Injection Practices:

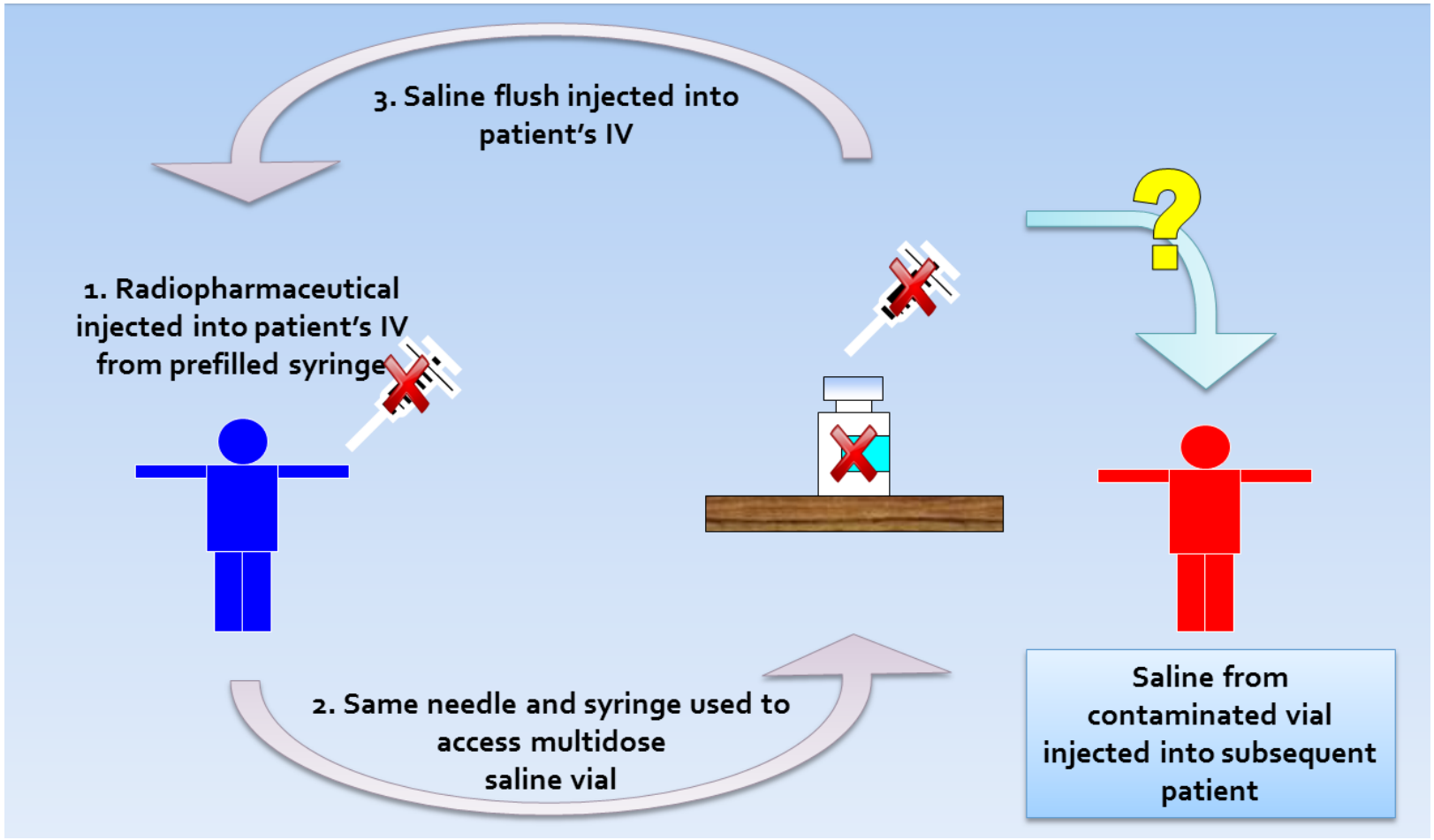
- Saline flush syringes removed from packaging and left in open tray
- Single dose vials used more than once
- Multi-dose vials not dated when opened or with a “do not use after” date
- Expired multi-dose vials
- Multi-dose vials taken into the patient area.
- Glucose meter- competency validation and cleaning practice

HAI Investigation and Outbreaks

Hepatitis:

- **Poor Safe Injection Practices:**
  - Hepatitis B and C Outbreaks (NC and Nationally)
  - Wayne County 6 individuals died from Hepatitis B
    - Related to shared glucometers
  - Acute HCV – Cardiology clinic in Western NC – reuse of Multidose (MDV) for more than one patient

Clinical Picture



Infection Control Breach Reporting

- HB474 requires licensed facilities to report to public health
- HAI Coordinator notified of breach
- Information shared with LHD to investigate
- Where any of the following identified?
  - Glucose meters shared without cleaning/disinfecting between residents
  - Fingerstick devises shared
  - Injection equipment shared (e.g. insulin pens, needles or syringes)
  - Clinical or lab evidence suggestive of acute hepatitis among exposed residents
- Investigate the following:
  - Search NCEDSS for reported HBV among exposed residents
  - Provide education in best practice to facility
  - Provide education on infection prevention requirements for adult care homes (HB474)

Legionella

Case Definition for Healthcare Associated:

- **Definite HCA**: Laboratory-confirmed legionellosis in a person who has spent ≥10 days continuously in a healthcare facility before illness onset

- **Possible HCA:** Laboratory-confirmed legionellosis in a person who has spent 2-9 days in a healthcare facility before illness onset

Guidance Documents

Legionellosis Prevention and Response Toolkit

- Sentinel Case Investigation documents
- Outbreak Investigation documents
- Located in the online Communicable Disease Manual: http://epi.publichealth.nc.gov/cd/lhds/manuals/cd/reportable_diseases.html

Group A Strep

- LTCF residence is an independent risk factor for invasive disease
- Incidence 3–8 times higher among LTCF residents
- LTCF residents 1.5 times more likely to die from invasive GAS infections
- Can be initiated or propagated by staff
- Increased staff contact linked to illness
  - Significant nursing needs
  - Non-intact skin/wound care
  - Immobility/bed baths
- Link to inadequate infection control
  - Poor hand hygiene
  - Staff working while sick

GAS Continued

Investigation steps to take for single and multiple cases

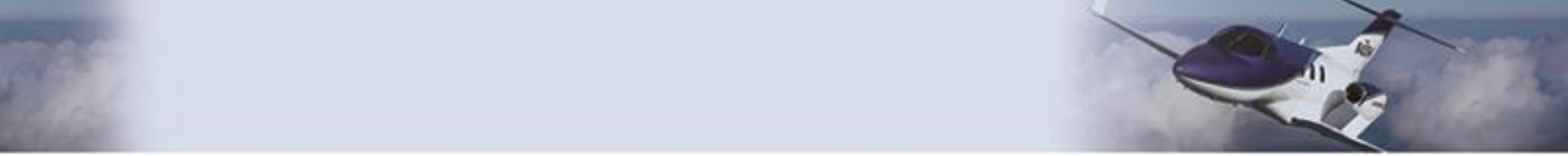
(Located in the online Communicable Disease Manual)

- Retrospective chart review over the previous month to identify other invasive GAS cases among facility residents
- Survey health care workers (HCWs) for symptoms suggestive of GAS infection
  - Culture symptomatic HCW
- Active surveillance for additional invasive or noninvasive cases among staff/residents for 4 months

Recent investigations and responses:

- National:
  - Invasive *C. Auris* infections
  - *B. Cepacia* cases related to recalled products
  - Non-tuberculous Mycobacterium (NTM) Infections
- Local:
  - Multi-drug Resistant Organisms in Long Term Care Facilities

- Remember: **ANY infection** acquired as a consequence of a healthcare intervention is considered HAI.



Questions?