

SHARPPS Newsletter

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

PROGRAM UPDATES

The face of the SHARPPS team is continually changing. Two of our epidemiologists, Heather Dubendris and Katie Steider Palladino, are leaving to pursue new career paths.

Heather came to NC DPH as a CDC / Council of State and Territorial Epidemiologists (CSTE) Applied Epidemiology Fellow in 2014 and finished her fellowship early to join our team as an epidemiologist. Heather served in a vital capacity taking on the role of lead epidemiologist as our team grew. Heather has been instrumental in building the response to antimicrobial resistance in our program, working most recently with partners and the Commission for Public Health to add two multidrug resistance organisms to the list of discussions and conditions reportable in NC. Heather has the unique ability to communicate complex information to a variety of audiences, allowing us to form strong relationships with partners. Heather is leaving to pursue a more technical niche, but isn't straying too far from the world of healthcare associated infections as she will be using her expertise to develop modules for CDC's National Healthcare Safety Network (NSHN) reporting system.

Katie also came to NC DPH as a CDC / CSTE Applied Epidemiology Fellow in 2016, completing her fellowship early to remain with our team as an epidemiologist. We are grateful for Katie's time with us and her numerous contributions to our team, including enhancing communication between healthcare settings with respect to multidrug resistant organisms. Katie is not only an astute epidemiologist, she is an impeccable writer and exacting editor. Katie recently married and will be moving to PA to be with her husband! Katie, too, will not be leaving the field of healthcare associated infections behind, as she has accepted a position as a hospital infection preventionist in Pittsburgh.

We will greatly miss both of these talented epidemiologists, but we wish them all the best in their future endeavors!

On another note, the SHARPPS team is thrilled to welcome our new campaigns coordinator and health educator, Deborah Dolan! Deborah comes to us with over 20 years of experience in health education, within North Carolina and local government. Deborah's career has spanned a diversity of subject matter areas including chronic diseases, physical activity and nutrition, and tobacco prevention and control. In her free time, Deborah enjoys spending time with her family and two young children. Deborah can be reached via email at Deborah.dolan@dhhs.nc.gov and 919-546-1649.

Please join us in saying farewell to Heather and Katie, and welcome to Deborah!



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ANTIMICROBIAL STEWARDSHIP

The STewardship of Antimicrobial Resources (STAR) Partners Initiative

NC DPH and the SHARPPS team believe antimicrobial stewardship is a vitally important strategy in the fight against the spread of multidrug-resistant organisms (MDROs). We are committed to improving antimicrobial stewardship practices in our state. In July 2018 we launched [STAR Partners](#), a statewide, tiered antibiotic stewardship initiative targeting acute care hospitals.

Since last summer we have been working to promote and recruit STAR Partners. We currently have ten STAR Partners across the state and we would love to add **YOUR** facility to that list.

Prospective STAR Partners can apply for one of four levels – Pledge, Beginner, Advanced, Champion – depending upon their current antibiotic stewardship activities. Instructions for applying can be found on our website: https://epi.publichealth.nc.gov/cd/antibiotics/star_partners.html.

Current Partners range in size from small community hospitals to large academic medical centers. We would like to recognize a few STAR Partners in particular: Iredell Health System was our first STAR Partner; Wilson Medical Center was our first Champion STAR Partner; and our newest Champion STAR Partner is Frye Regional Medical Center! As Champion Partners, Wilson Medical Center and Frye Regional Medical Center have each agreed to mentor at least one facility to develop their stewardship program. Please email nchai@dhhs.nc.gov if you are interested in a mentorship opportunity. We welcome the opportunity to connect you with a Stewardship Champion at one of those facilities to start the process.

The SHARPPS team encourages facilities to apply at the level met by their current stewardship activities while simultaneously improving their stewardship program, as this will allow us to more accurately track the progress of stewardship efforts in NC. There are no time constraints to apply for the next level; facilities can increase their level at any time and subsequent applications will be less intense as the only documentation required is that to support new stewardship activities. Please apply now!

Antibiotic/Antimicrobial Resistance (AR/AMR) Challenge:

NC DPH has submitted a formal commitment to the US Government's Antibiotic/Antimicrobial Resistance (AR/AMR) Challenge. This is a yearlong effort to accelerate the fight against antimicrobial resistance across the globe. The AMR Challenge is seeking actionable formal commitments for change that further the progress against antimicrobial resistance from governments, private industries, and non-governmental organizations worldwide. NC DPH and the SHARPPS team encourages all organizations (healthcare or otherwise) that are participating in any activities that assist in the fight against antimicrobial resistance to make commitments to this yearlong Challenge. Our commitment will be available to review soon on the AMR challenge website where you can currently find instructions on how to make your own commitment : <https://www.cdc.gov/drugresistance/intl-activities/amr-challenge.html>.

SUCCESS STORY: IT TAKES A TEAM TO TACKLE CAUTI

Summary: Novant Health established a Catheter Associated Urinary Tract Infections (CAUTI) Prevention Interdisciplinary Team in 2015 to decrease CAUTI rates. While CAUTI infection rates have decreased, the established goal of four CAUTIs per month for the system has not yet been achieved. They incorporated multiple interventions using an interdisciplinary approach:

- Implementation of standing orders
- Revisions to policy/procedure
- Mandatory required education for all acute care inpatient staff
- Rebuilding of our Electronic Health Record incorporating best practices
- Nursing executives established CAUTI leaders in each inpatient facility
- Monthly auditing of indwelling catheter insertion, maintenance, and post-removal best practice
- A designated team of inserters in each facility
- Development of a nursing assistant urinary catheter care team in two facilities
- Completion of initial and quarterly catheter insertion validation sessions
- Tracking of all catheter placements
- In depth review of all CAUTIs
- Use of a buddy system to ensure aseptic technique utilization
- Product changes to employ a more streamlined approach for insertion

As of November 2018, the initial data demonstrated:

A system-wide impact on CAUTI rates by obtaining a 46% decrease from baseline

The need for continued monitoring of clinical practice compliance and opportunities for improvement

A decrease in cost to the patient and corporation

For more information, contact: Vanesia (Nesi) Busbee MSN, RN, PCCN-K at vwbusbee@novanthealth.org or Tracy B. Forster RN,BSN,MHA at 704-384-4190.

DATA VALIDATION

In 2018, the SHARPPS Program performed two rounds of data validation for *C. difficile* LabID (CDI LabID) events (July 1, 2017–December 31, 2017 & January 1, 2018–June 30, 2018) and one round of data validation for Central Line-Associated Bloodstream Infections (CLABSIs) (July 1, 2017–December 31, 2017) as reported to CDC’s National Healthcare Safety Network (NHSN). The goal of these validation efforts was to assess the validity of data reported to NHSN to ensure that these data accurately reflect the true burden of CDI LabID and CLABSI events in North Carolina.

2017 CDI LabID Event Data Validation:

Eighteen (18) acute care hospitals (ACHs) were selected using the Cumulative Attributable Difference (CAD). The CAD is the number of infections that must be prevented within a group, facility, or unit to achieve a specified goal in the reduction of HAIs.

This method can be viewed on the CDC’s website for Data Validation at <https://www.cdc.gov/nhsn/validation/index.html>. Eighteen of the facilities included ACHs with the highest and lowest CADs including facilities with no reported CDI LabID events and those with at least one reported CDI LabID event. Also selected for validation were seven (7) inpatient rehabilitation facilities (IRFs) and nine (9) long term acute care hospitals (LTACHs). Thirteen (72%) ACHs, two (22%) LTACHs, and five (71%) IRFs participated in this validation. Overall participation was 59% (20 of 34 facilities).

1,542 records were reviewed. Of those:

- 1,448 (94%) were correctly classified as CDI LabID events by both validators and the facility;
- 16 (1%) were correctly classified as not CDI LabID events by both validators and the facility;
- 79 (5%) were incorrectly classified as not CDI LabID events by the facilities; and there were no records incorrectly classified as CDI LabID events;

The overall agreement between validators and facilities was 95% (kappa = 0.27) (Kappa is a statistical measure that indicates the level of agreement between two entities. A kappa >0.8 is considered excellent agreement).

Of the 79 incorrectly classified as not CDI LabID events and therefore not reported in NHSN, 69 (87%) were determined by the validators to be community onset. Underreporting of community onset CDI may suggest the need for education on the surveillance definition to ensure correct reporting of community onset events.

The validation results demonstrate a comprehensive and thorough understanding of the surveillance definition among the selected facilities. The low kappa may be explained by the imbalance between the agreement and nonagreement factors (1,462 agreement and fifty-three nonagreement respectively; summarized in Table 1).⁸ Overreporting was not present in the results and underreporting accounted for 5% of all records.

Table 1: Summary of the 1542 records reviewed by validators and infection preventionists at all twenty facilities.

Facility	Validator	
	CDI	NOT CDI
CDI	1448	0
NOT CDI	79	16

2018 CDI LabID Event Data Validation:

Using the same methodology for facility selection described above, 10 acute care hospitals (ACHs) were selected for this round of CDI LabID event validation; 6 (60%) participated.

505 records were reviewed. Of those:

- 498 (99%) were correctly classified as CDI LabID events by both validators and the facility;
- 0 (0%) records were correctly classified as not CDI LabID events by both validators and the facility;
- 7 (1%) records were incorrectly classified as not CDI LabID events by the facility;
- 0 (0%) records were incorrectly classified as CDI LabID events.

The overall agreement between validators and facilities was 99%. All 7 incorrectly classified as not CDI LabID events were community onset. No overreporting was present in the records validated. These findings, too, suggest a comprehensive and thorough understanding of the surveillance definition and reporting requirements for CDI LabID events within the validated facilities but also supports the need for further education regarding community onset CDI LabID events.

Table 2: Summary of the 505 records reviewed by validators and infection preventionists at all six facilities.

Facility	Validator	
	CDI	No CDI
CDI	498	0
NoCDI	7	0

CENTRAL LINE ASSOCIATED BLOOD STREAM INFECTIONS (CLABSI)

2017 CLABSI Data Validation:

Eighteen (18) acute care hospitals (ACHs) were selected using the Cumulative Attributable Difference (CAD). ACHs with the highest and lowest CADs including facilities with no reported CLABSIs and those with at least one reported CLABSI were selected for a total of eighteen facilities. Twelve (66%) facilities participated.

Two validators traveled onsite to the facility to review thirty (30) randomly selected records. Records included those reported to NHSN, those that weren't and those that were positive for specific organisms common to CLABSIs. Discussions took place between the validators and infection preventionists (IPs) regarding potential discrepancies in the classification CLABSIs during the record review process. If classification could not be agreed upon between the validators and the facility IPs the case was referred to NHSN for clarification.

A total of 293 records were reviewed. The agreement between validators was 94% (kappa = 0.73 [0.61, 0.85]) and the agreement between validators and the facilities was 98% (kappa = 0.903 [0.83, 0.97]).

Forty (40) CLABSIs were identified by the validators. Thirty-nine (98%) records were classified correctly as CLABSIs by both validators and the facility; 247 (98%) records were classified correctly as not being CLABSIs by both validators and the facility. Seven records (2%) were discrepant between the facility and validator. One discrepant record was misclassified as secondary to pneumonia and therefore not a CLABSI by the facility, but determined to be a CLABSI by the validators.

Three (50%) records incorrectly classified as CLABSIs were secondary to another infection; 2 (33%) records were not in a reporting location; and 1 (17%) record had no central line in place for the appropriate duration per the definition.

The agreement between validators and facility was very high, suggesting a comprehensive and thorough understanding of the CLABSI definition and reporting requirements within the validated facilities.

NEW
RESOURCES FOR NEW REPORTABLE CONDITIONS
CRE AND CANDIDA AURIS

One of the 2018 SHARPPS Program accomplishments was adding carbapenemase-producing carbapenem resistant Enterobacteriaceae (CP-CRE) and *Candida auris* (*C. auris*) to the NC Reportable Disease and Conditions administrative code rule (10A NCAC 41A .0101), effective October 1, 2018. Both are resistant to several types of medications making infections difficult to treat. Additionally, both can cause serious health issues, are associated with high mortality, and have caused outbreaks in healthcare settings.

Early detection and aggressive implementation of infection prevention and control strategies are necessary to prevent further spread of CRE and *C. auris*. Reporting these conditions will help prevent transmission of infections between patients, within or among health care facilities, or between health care facilities and the community. Reporting will also help the SHARPPS Program and other stakeholders identify and respond to outbreaks and better characterize the epidemiology of these conditions.

The SHARPPS Program has posted many resources related to reporting and responding to these conditions on the Communicable Disease Manual to support stakeholders. Please refer to the Carbapenem Resistant Enterobacteriaceae (CRE) and *Candida auris* (*C. auris*) sections of the [Communicable Disease Manual](#) for new or updated resources including:

- An updated [Multidrug-Resistant Organisms \(MDROs\) Toolkit for Long-Term Care Facilities](#) from NC DPH
- Case definitions
- Investigation overviews

The SHARPPS Program remains available to assist with detection, reporting, and response activities. Please contact the Epidemiologist on Call (919-733-3419) and ask to speak to a SHARPPS Program member about any questions or concerns.

*Interested in having SHARPPS present or exhibit
at your upcoming event? Contact us at
nchai@dhhs.nc.gov.*

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