

A vertical strip on the left side of the page features a blue-tinted microscopic image of various bacteria, including rod-shaped and spiral-shaped organisms.

2024

Issued October 2025

Health Care-Associated Infections in North Carolina

Reporting Period:
January 1, 2024—December 31, 2024



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**
Division of Public Health

Communicable Disease Branch • Medical Consultation Unit • Surveillance for Health Care Associated
and Resistant Pathogens Patient Safety (SHARPPS) Program • www.ncdhhs.gov/ • NCDHHS is an equal
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Overview of Health Care-Associated Infections in North Carolina

Health Care-Associated Infections (HAIs) are infections caused by a variety of organisms, including bacteria and fungi, acquired while receiving medical care. Hospitals are required to report specific types of HAIs to the North Carolina Department of Health and Human Services, Division of Public Health (DPH). This report focuses on five important types of HAIs that occurred while patients were hospitalized in acute care hospitals from January 1, 2024, through December 31, 2024. These infections include:

1. Central line-associated bloodstream infections (CLABSI)
2. Catheter-associated urinary tract infections (CAUTI)
3. Surgical site infections (SSI) occurring after inpatient abdominal hysterectomies or colon surgeries.
4. Laboratory-identified bloodstream infections caused by methicillin-resistant *Staphylococcus aureus* (MRSA)
5. Laboratory-identified infections caused by *Clostridioides difficile* (CDI)

The prevention of health care-associated infections is a public health priority in North Carolina and is a collaborative effort between the health care and public health communities. This report is a product of this collaboration and is prepared by the Surveillance for Health Care-Associated and Resistant Pathogens Patient Safety (SHARPPS) Program located in the Communicable Disease Branch of the Epidemiology Section of the North Carolina Department of Health and Human Services. Report definitions are available in Appendix A. The report is provided as a resource for health care providers and the general public to provide information about progress in the prevention of HAIs in North Carolina hospitals. Consumers can use this information to learn more about HAIs, and to take ownership of their health care by asking infection prevention questions when coming into contact with health care facilities. Providers can use this report to compare statewide and hospital-specific progress to the national experience.

The mission of the NC SHARPPS Program is to collaborate with health care providers, local health departments, and other partners to prevent, detect, and respond to events and outbreaks of health care-associated and antimicrobial-resistant infections in North Carolina.

The SHARPPS Program works to eliminate preventable infections in health care settings by:

1. Conducting statewide surveillance for selected HAIs.
2. Providing useful, unbiased information to health care providers and consumers through public reports.
3. Promoting and coordinating prevention efforts.
4. Providing guidance, education, and training.
5. Investigating and responding to outbreaks in health care settings.

We welcome your feedback to improve the usefulness of future reports at nchai@dhhs.nc.gov.

Additional resources:

- [HAIs and the NC SHARPPS Program](#)
- [Past HAI surveillance reports](#)

Acknowledgements

We acknowledge the extensive time and effort that our partners across North Carolina put into infection prevention every day. We at DPH remain dedicated to our common goal of patient safety.

The SHARPPS Program would also like to recognize the contributions of the SHARPPS Advisory Group members listed in Appendix C. In particular, the Program is grateful for their ongoing guidance and feedback on the presentation and content of DPH HAI reports.

Finally, the Program would like to acknowledge our partners who have been important leaders and supporters of surveillance and prevention programs for health care-associated infections in North Carolina. These include the North Carolina Healthcare Association (NCHA), the North Carolina Statewide Program for Infection Control and Epidemiology (NC SPICE), the North Carolina Chapter of the Association for Professionals in Infection Control and Epidemiology (APIC NC), Alliant Quality, and the Division of Health Service Regulation.

I. Highlights of Health Care-Associated Infection Prevention Activities in 2024

A. NC Surveillance for Health Care-Associated and Resistant Pathogens Patient Safety Program

Key accomplishments and activities of the North Carolina Surveillance for Health Care-Associated and Resistant Pathogens Patient Safety (SHARPPS) Program in 2024 include the following:

- **MDRO Investigation and Response:** In 2024, there were 84 instances of multi-drug-resistant organism (MDRO) events resulting in an outbreak response from the SHARPPS Program.
- **Invasive GAS Investigation and Response:** In 2024, the SHARPPS Program led or participated in 105 acute public health responses for invasive Group A *Streptococcus* (GAS) in health care facilities. There were 17 invasive GAS outbreaks, all of which occurred in long-term care (LTC) facilities.
- **Antimicrobial Resistance:** Antimicrobial resistance is an urgent public health threat and remains a priority for the SHARPPS Program. The SHARPPS Program collaborates with the NC State Laboratory of Public Health (NC SLPH), the Centers for Disease Control and Prevention (CDC) Antibiotic Resistance Laboratory Network (ARLN), and local health departments (LHDs) on carbapenem-resistant Enterobacterales (CRE), carbapenemase-producing organisms (CPO), and *Candida auris* containment efforts. NC SLPH provides support for the identification of carbapenemase-producing CRE (CP-CRE) and carbapenemase-producing organisms (CPO) to facilities statewide. ARLN funding provides infrastructure and laboratory capacity to screen for CPO and *C. auris*, and LHD and Regional Infection Prevention Support (RIPS) staff provide onsite support for investigations. The SHARPPS Program has a [toolkit](#) for preventing the spread of MDROs in long-term care facilities.
- **Program Infrastructure:** Using federal supplemental funding, the SHARPPS Program has expanded to a total of 15 staff, composed of infection preventionists and consultants, epidemiologists, a business services coordinator, and a medical director. Excluding COVID-19 related activities, the SHARPPS Program provided seven educational sessions in 2024 focusing on infection prevention, antimicrobial stewardship, and investigation and control of antimicrobial-resistant pathogens including carbapenem-resistant Enterobacterales and *Candida auris*.

Due to funding changes, the RIPS Program transitioned from a decentralized team of over 40 infection prevention consultants to a smaller, state-managed team of four infection prevention consultants. Two additional consultants joined the team in January 2025. The new program continues to serve all 100 counties, providing on-site infection prevention support to long-term care facilities with a focus on skilled nursing facilities and adult care homes. The program strengthens infection prevention capacity through training, education, and consultation and uses evidence-based infection control practices consistent with applicable CDC and CMS guidance. They have completed over 9,500 on-site facility visits since 2020.

Antimicrobial Stewardship:

In 2023, North Carolina developed an Antimicrobial Stewardship Workgroup, which is made up of antimicrobial stewardship experts across NC. The first meeting was held in February 2024. Additional meetings were held in May and September 2024. The Workgroup elected to focus on creating state sponsored prescribing guidelines for adults and pediatrics and engaging insurance companies to improve antimicrobial prescribing practices in 2024.

The North Carolina antimicrobial stewardship team was pleased to host the first Antimicrobial Stewardship Payers Summit in November 2024. The goal of the summit was to bring together health care payer organizations and leaders in antimicrobial stewardship in NC to discuss the future of antimicrobial stewardship in North Carolina. Participants discussed antimicrobial resistance, priorities, and strategies for promoting best practices in

NC, and communication tools to implement and further improve relationships between partners. A report on the summit can be found here: [Antimicrobial Stewardship Payer Summit Post-Conference](#).

B. Health Care-Associated Infections Partner Updates

North Carolina Statewide Program for Infection Control and Epidemiology (NC SPICE)

NC Statewide Program for Infection Control and Epidemiology (SPICE) promotes prevention and control of health care-associated infections in North Carolina by providing evidence-based education and consultation across the health care spectrum. Activities for 2024 are summarized below.

Classroom Courses:

- In 2024, SPICE offered infection control courses targeting new infection preventionists (IPs) via classroom and/or virtual, live-streamed webinars, training 447 health care professionals on infection control in acute care and long-term care settings.

.0206 NC Curriculum for Infection Control:

- 707 outpatient, dental, hemodialysis, and home health hospice health care professionals completed the .0206 NC Infection Control Curriculum online.
- 1964 outpatient, dental, home health/hospice, and dialysis health care professionals completed the .0206 NC Infection Control Curriculum in a classroom/virtual setting.

Enhanced Education of Infection Prevention in Nursing Homes:

- Free online modules covering antibiotic-resistant bacteria, isolation precautions, injection safety, environmental cleaning, *Clostridioides difficile*, and urinary tract infections (UTIs) were offered through the SPICE Learning Management System (LMS) and Coursera. In 2024, 756 learners completed the course.

Phone and Email Consultations:

- SPICE provided 1269 infection control consultations by phone or email in 2024.

Special Projects:

- Through a contract with NCDHHS DPH, NC SPICE partnered with the SHARPPS Program to improve and expand North Carolina's HAI and communicable disease prevention capacity by addressing gaps in principles and practices within infection prevention programs and training. All activities continued to focus on providing infection control assessments, education, and consultation to long-term care facilities, outpatient settings, and hemodialysis facilities, as well as offering access to antibiotic stewardship expertise to hospitals, nursing home communities, and outpatient settings. Antibiotic stewards, clinicians, facilities, and health systems partnered to form the North Carolina Clinical Antibiotic Stewardship Partners (NC CLASP) collaborative.

In-Services/Presentations provided by NC Statewide Program for Infection Control and Epidemiology (NC SPICE):

- February 16, 2024: NC SPICE meeting with WA Department of Health
- February 21, 2024: Antibiotic Stewardship Regional Forum for Cabarrus County and Local Nursing Homes
- March 1, 2024: “North Carolina Infection Control in Outpatient Healthcare Settings” – Virtual Class
- March 6, 2024: “Public Health Webinar: Prioritizing Patient Safety Through Quality Measurement for Local Health Departments”
- March 21, 2024: “IP in Long Term Care settings: The Complexities and Challenges in Long-Term Care, and How to Build Collaboration with Long-Term Care Infection Preventionists”
- March 28, 2024: “Current SARS-CoV-2 Guidance from Centers for Disease Control and Prevention (CDC)” online webinar
- April 4, 2024: “Enhanced Barrier Precautions in Nursing Homes” Webinar
- April 10, 2024: NC CLASP Regional Lunch and Learn Iredell Health Department
- April 15 – 17, 2024: “Infection Control in Long-Term Care Facilities”
- April 22 – 25, 2024: “Infection Control Part 1: Surveillance of Health Care-Associated Infections”
- May 17, 2024: APIC Annual Conference “Infection Prevention in Dialysis”
- May 22, 2024: NC CLASP: State Conference
- May 23, 2024: ANNA NC Conference “Infection Prevention in Dialysis”
- September 27, 2024: PHIT Force Meeting
- October 28 – 31, 2024: “Infection Control Part 2: The Infection Preventionist as an Environmentalist”
- June 6, 2024: “Infection Prevention Hot Topics” for QIO Alliant Health
- June 7, 2024: “NC Infection Control in Outpatient Health Care Settings” – Virtual Class
- June 20, 2024: “Promoting Health Equity in Health Care-Associated-Infections and Antimicrobial Resistance Programs: A Community-Based Approach for Local Health Departments” Webinar
- July 10, 2024: Regional Antibiotic Stewardship Lunch and Learn for Wake County
- July 11, 2024: “Promoting Health Equity in Health Care-Associated-Infections and Antimicrobial Resistance Programs: A Community-Based Approach for Local Health
- August 16, 2024: “Occupational Health” for South Carolina APIC
- August 16, 2024: “Infectious Disease Process” for South Carolina APIC
- September 4, 2024: “Infection Prevention Basics” for the NCDHHS Department of Aging
- October 16, 2024: “Development of IPC Program for LTC Facilities” for APIC Palmetto- South Carolina
- 12/10/2024 - Webinar: “An Ounce of Prevention is Worth a Pound of Cure: Why We Have Vaccines”
- 12/18/2024 - Webinar: “Beyond Touchdowns and Field Goals: Modernizing Antibiotic Durations to Prevent Patient Harm”

I. Health Care-Associated Infections Data

The SHARPPS HAI Annual Report for 2024 includes data that have been combined from all reporting acute care hospitals in North Carolina. Other types of facilities also report HAI data to North Carolina, including long-term acute care facilities, inpatient rehabilitation facilities, and specialty hospitals such as psychiatric facilities. While not reflected in this Annual Report, data for these additional facility types are provided in the [Quarterly Reports](#).

A. WHAT IS THE PURPOSE OF THIS REPORT?

HAIs are infections patients can get while receiving medical treatment in a healthcare facility. Patients should know that these infections are unintended. Ideally, HAIs should never happen, but sometimes they do. Hospitals track and report HAIs for many reasons. In some cases, they are required to do so—either by state public health authorities or by federal health agencies. In most cases, hospitals report numbers (data) about certain HAIs because they want to know how well they are doing in preventing them, and how they compare with other hospitals of similar size and with similar kinds of patients.

This report looks at five HAIs:

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

[Click here for “Fast Facts” about central lines, urinary catheters, and the HAIs discussed in this report.](#)

Hospitals are [required by law](#) to report occurrences of these five HAIs to the North Carolina Division of Public Health. These measures do not represent all possible infections but were selected because they give a good overview of how a hospital or state is doing in preventing health care-associated infections. These infections are preventable when health care providers use infection prevention steps recommended by the Centers for Disease Control and Prevention (CDC).

B. WHERE DO THE NUMBERS COME FROM?

Hospitals self-report their HAI data to the CDC and the NCDHHS DPH using a free, web-based software system called [the National Healthcare Safety Network \(NHSN\)](#). The CDC and the NC SHARPPS Program provide training to hospital staff on the appropriate use of this system and provide guidance on how to track infections in a standard way.

C. HOW DO I READ THE REPORT?

This report looks at how hospitals in North Carolina performed in terms of infection prevention by displaying how many HAIs they reported from January 1, 2024, through December 31, 2024. Infection counts alone do not show how well a facility or North Carolina is performing in preventing HAIs. The HAI annual report also presents a key measure used to determine HAI progress: the standardized infection ratio (SIR). **The SIR is the number used to represent how well a facility did in preventing HAIs compared to similar facilities using the national average (i.e., national experience). The SIR is the total number of *observed* infections divided by the number of *predicted* infections in each category.** When presenting SIRs, the report data tables and figures show whether North Carolina, a hospital-size group, or location type had more HAIs (“worse”), fewer HAIs (“better”), or about the same number of HAIs (“same”) compared to the national average based on previous years of reported data. The predicted value of the national average for each HAI is also called the “NHSN baseline.” The SIR is considered a “best guess” or estimate of observed infections compared to the number of infections that would be predicted based on the NHSN baseline. The comparison made by the SIR between observed and predicted

infections considers differences between hospitals including types of patients, procedures, hospital size, and whether the hospital is affiliated with a medical school. More information on how SIR is calculated can be found [here](#).

SIRs are presented for the state overall and for each hospital size group; for some HAIs, SIR is also presented by location type (i.e., adult/pediatric units vs. neonatal locations). The hospital size groups were categorized by total hospital bed counts: less than 100 beds, 100-199 beds, 200-399 beds, and 400+ beds. Hospitals that served as the primary location for medical schools were included in a separate category (primary medical school affiliation). A list of the reporting hospitals in each size category can be found in Appendix D.

In 2022, NHSN [updated the national baseline](#) for all HAIs. The 2015 national experience (NHSN 2015 baseline) was used in SHARPPS Program reports from 2017-2023. When calculating the SIR based on the original, or 2015 baseline, the way differences in facilities (such as types of patients and procedures, or facility size) were accounted for varied by both HAI type and facility type. Starting in 2024, NC SHARPPS began presenting SIRs calculated on a newly calculated NHSN baseline. All HAIs use data from 2022 to predict baseline values and the 2022 baseline serves as the reference point for assessing progress. SIRs calculated under this baseline should not be compared to SIRs calculated using the original or 2015 baselines.

[Click here for a “Reading Guide” that explains each element of the data tables and figures.](#)

a. WHAT DO THE NUMBERS MEAN?

This report shows how the state performed during a single year (2024) and compares each hospital’s performance to the national average or baseline experience.

In addition to presenting numbers, there are some more complicated calculations performed on the data. These calculations help ensure that any data guesses or estimates (i.e., for the SIR) are as accurate as possible. A larger number of data records will provide more accurate estimates than a smaller number. One of these calculations, the 95% confidence interval, gives a lower and higher range of values that we use when comparing the number of observed infections to the number of predicted infections; this range tells us if the difference between the observed and predicted infections is statistically significant.

[Click here for a “Numbers Guide” that explains any calculations for numbers in the data tables and figures.](#)

b. ORGANISMS IDENTIFIED FROM HAIs

In NHSN, hospitals may report up to three organisms identified from one HAI. These organisms were categorized into 10 groups: *Candida* spp. & other yeasts/fungi, *Enterobacter* spp., *Enterococcus* spp., *Escherichia coli* (*E. coli*), *Klebsiella* spp., *Pseudomonas* spp., *Staphylococcus aureus*, coagulase-negative *Staphylococci*, and two “other” categories – other gram-positive bacteria and other gram-negative bacteria. The first eight categories or organisms listed represent the leading causes of HAIs nationwide. Many of these organisms are part of the normal flora contained within the human body, found on the skin or in the gastrointestinal and/or urinary tract. Introduction of these organisms into other areas of the body can lead to infection.

Excluded organisms: Some organisms are rarely associated with HAIs or not known to cause HAIs. These organisms may be the causes of community-associated infections. For this reason, NHSN excludes organisms from the following genera from reporting: *Blastomyces*, *Histoplasma*, *Coccidioides*, *Paracoccidioides*, *Cryptococcus*, and *Pneumocystis*. Additional HAI-specific organism exclusions can be found in the [NHSN Patient Safety Manual](#).

c. THINGS TO CONSIDER WHEN LOOKING AT THE REPORT

126 North Carolina hospitals reported HAIs in 2024, including 94 short-term acute-care hospitals, six long-term acute-care hospitals, seven inpatient rehabilitation facilities, 12 critical access hospitals, and seven specialty hospitals. This report includes data from the 94 short-term acute-care hospitals. Facility-specific data for all types of facilities can be found in the [Quarterly Reports](#).

These reports cover data from January 1, 2024, through December 31, 2024. Data were downloaded from the National Healthcare Safety Network (NHSN) on May 7, 2025; any changes made to the data after this date are not reflected in this report. Before reviewing this report, a few clarifications about the data need to be made:

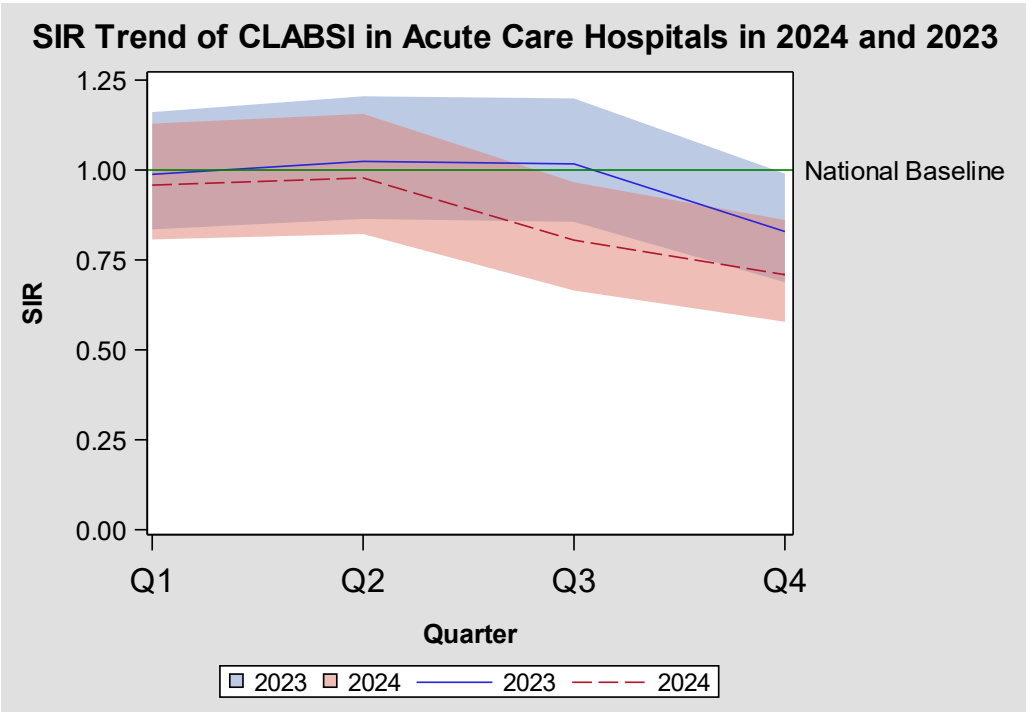
1. **The data within this report were collected May 1, 2025.** Although efforts were made by hospitals and the North Carolina SHARPPS Program to ensure that the data were accurate and complete, the data are self-reported and have not been formally “double-checked,” or validated. Numbers should be interpreted with caution.
2. **There may be differences in reporting practices among hospitals.** Hospitals with more infection control personnel and resources may be able to identify and report more infections compared to a hospital with fewer infection control resources.
3. **There may be differences between results published by the North Carolina SHARPPS Program and results published elsewhere** (e.g., [Centers for Medicare and Medicaid Services Hospital Compare website](#)). Results may differ due to using data from different time periods, different facility types, different patient populations, and/or different methods of analysis.
4. **The North Carolina SHARPPS Program chose not to present some data for individual hospital units, procedures, or hospitals that did not meet a threshold (minimum value) for the reporting period.** The minimum threshold numbers are based on CDC recommendations for reporting health care-associated infection data.
 - Central line-associated bloodstream infections: 50 central line days;
 - Catheter-associated urinary tract infections: 50 catheter days;
 - Surgical site infections: 20 surgeries.
5. **The North Carolina SHARPPS Program does not calculate an SIR when the number of predicted infections is less than one.** In these situations, the “How Does the State Compare to the National Experience” text says, “No conclusion.” This does not mean that hospitals failed to report data; it only means that the number of patients, devices (central lines or urinary catheters), and/or procedures that were seen during this time period did not meet the established threshold for calculating an SIR. In other words, there is not enough information to make a reliable conclusion about performance on this measure.
6. **Laboratory-Identified Events (LabID Events):** *Clostridioides difficile* infections (CDI) and methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia (blood infection) LabID events rely on laboratory data. Patients did not have to be ill to have a positive result, and a positive result can be determined without requiring clinical information about the patient. This allows for a much less labor-intensive means to track CDI and MRSA infections. Only those LabID events that are acquired in the hospital are displayed in this report. The sensitivity of various testing methodologies may vary, particularly for CDI. NHSN makes risk adjustments to account for these differences when calculating SIRs for LabID CDI events.

As of 2018 Q1, CDI events will be risk adjusted for the last test performed if multiple tests were used. For example, if ‘NAAT plus EIA, if NAAT positive’ was performed, the event will be risk adjusted for EIA. More information can be found in the [NHSN SIR Guide](#).

D. HEALTH CARE-ASSOCIATED INFECTIONS TRENDS FOR 2024

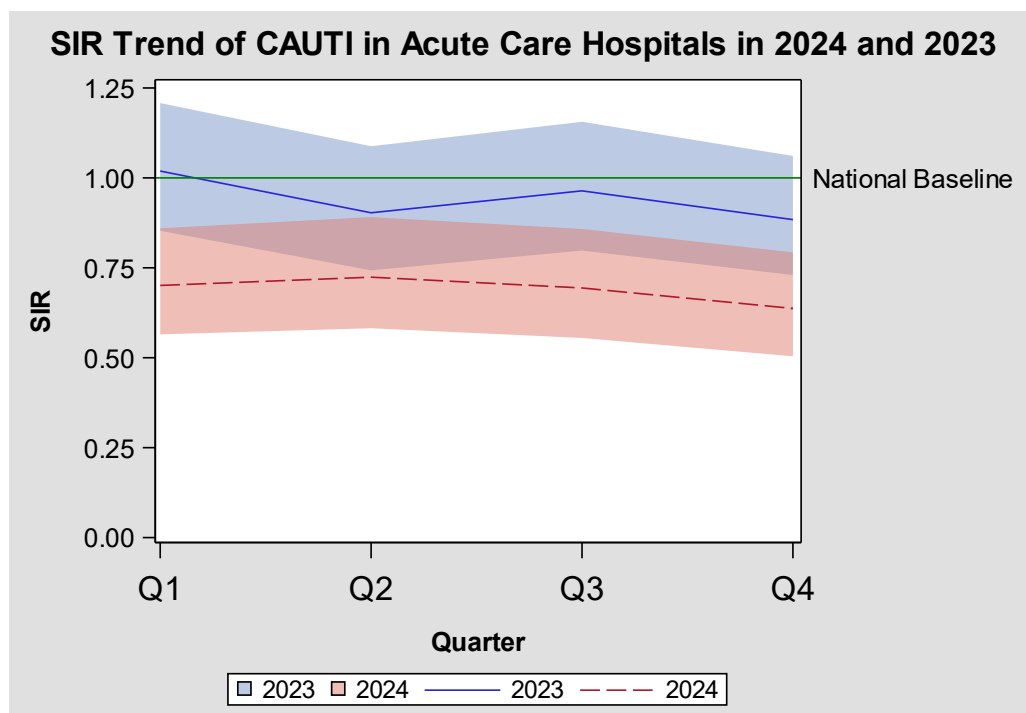
North Carolina facilities strive to bring the SIR down to below the national baseline and this effort is reflected in the data. See below how the SIR tracks across the year for 2024 using the 2022 NHSN Baseline. Each colored band represents the 95% confidence interval for that year’s SIR estimate.

Figure 1.



- Interpreting Figure 1:**
- 2024 Q1 and Q2 experienced about the same number of CLABSIs as predicted, performing the SAME as the national experience.
 - 2024 Q3 and Q4 experienced fewer CLABSIs than predicted, performing BETTER than the national experience.

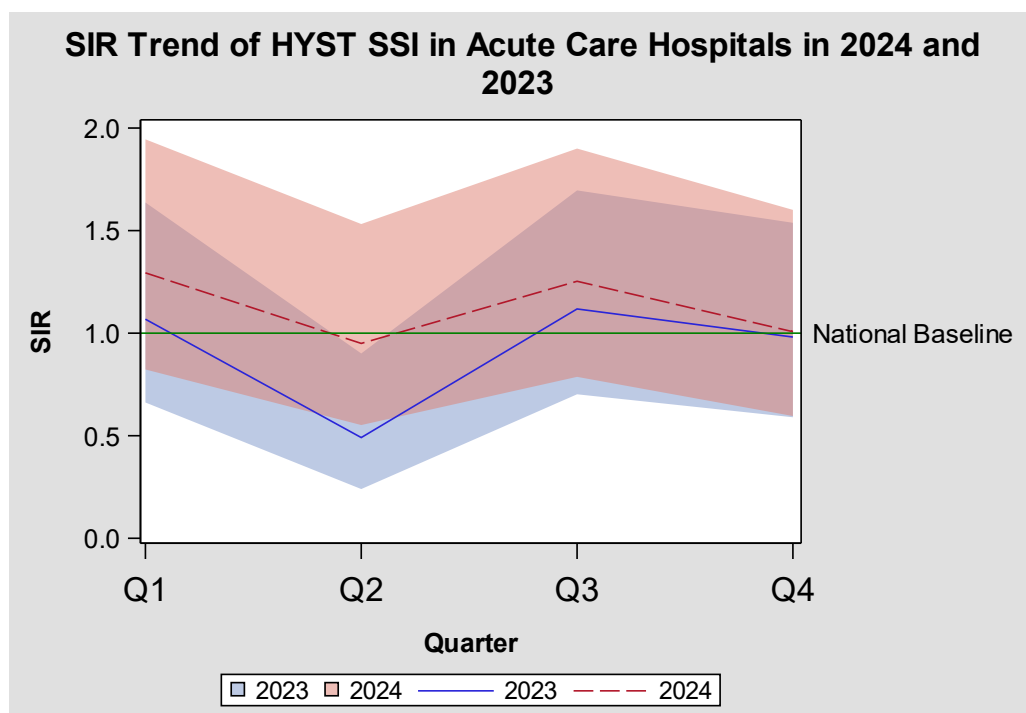
Figure 2.



Interpreting Figure 2:

- All of 2024 (Q1-Q4) experienced fewer CAUTIs than predicted, performing BETTER than the national experience.

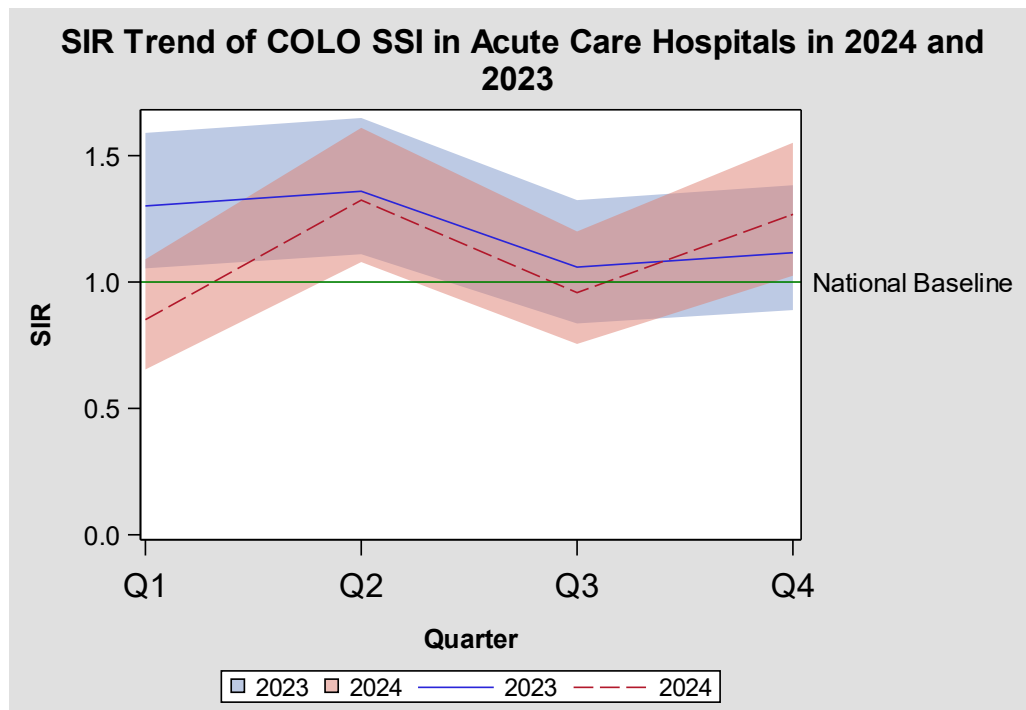
Figure 3.



Interpreting Figure 3:

- All of 2024 (Q1-Q4) experienced about the same number of HYST SSIs as predicted, performing the SAME as the national experience.

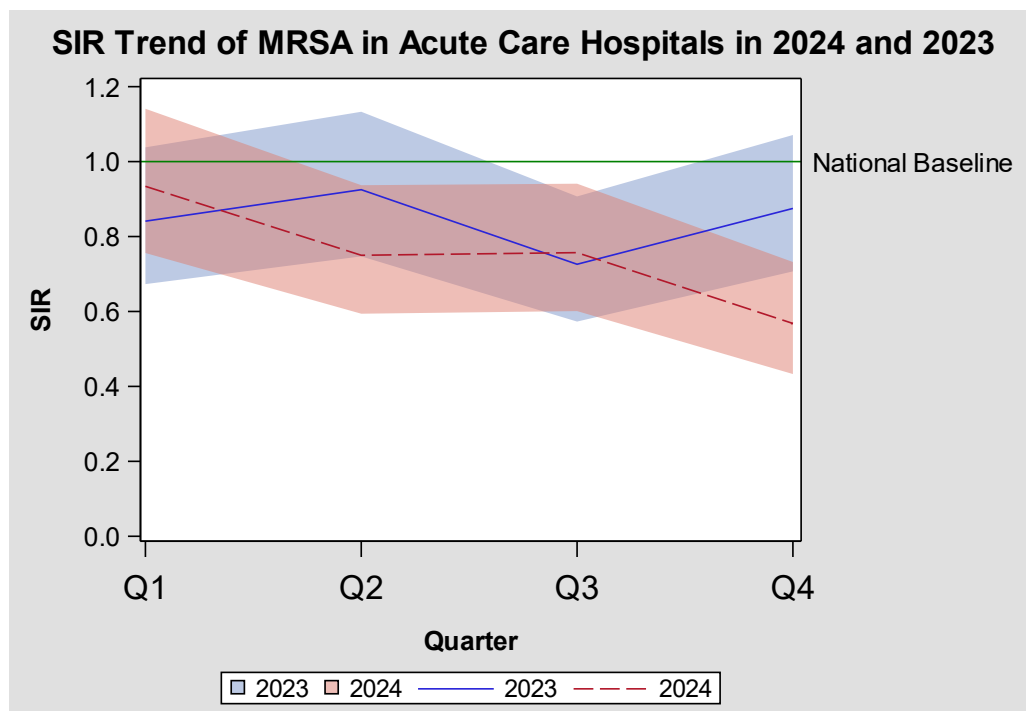
Figure 4.



Interpreting Figure 4:

- 2024 Q1 and Q3 experienced about the same number of SSIs associated with COLO procedure as predicted, performing the SAME as the national experience.
- 2024 Q2 and Q4 experienced more SSIs associated with COLO procedure than predicted, performing WORSE than the national experience.

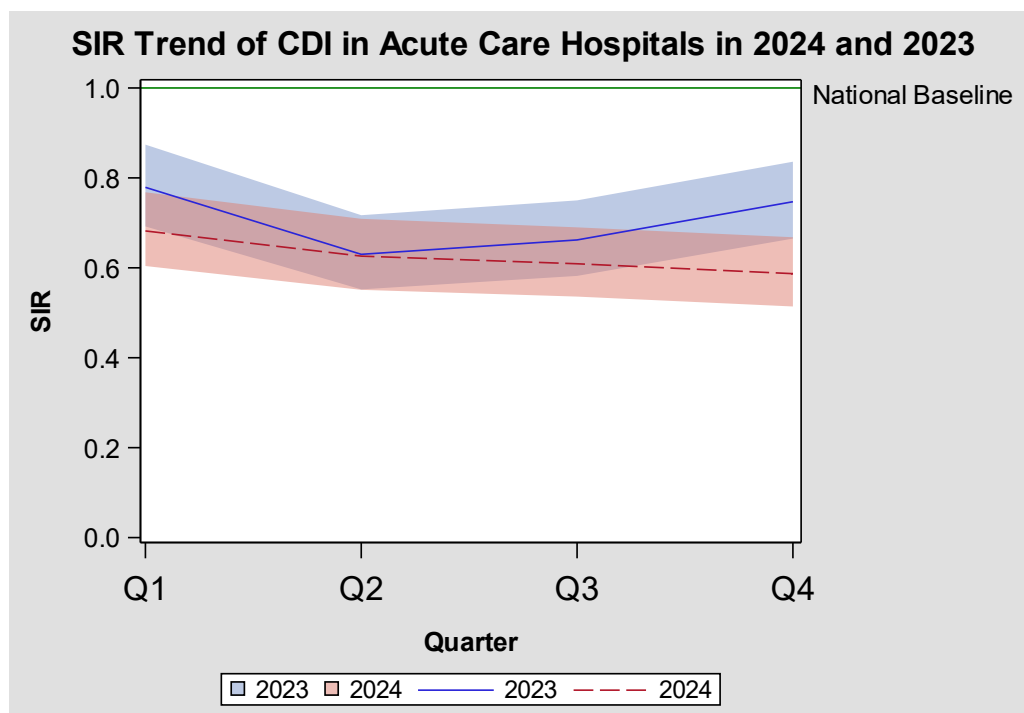
Figure 5.



Interpreting Figure 5:

- 2024 Q2, Q3, and Q4 experienced fewer MRSA LabID Events than predicted, performing BETTER than the national experience.
- 2024 Q1 experienced about the same number of MRSA LabID Events as predicted, performing the SAME as the national experience.

Figure 6.



Interpreting Figure 6:

- All of 2024 (Q1-Q4) had fewer CDI LabID events than predicted, performing BETTER than the national experience.

II. Statewide Health Care-Associated Infections

A. Central Line-Associated Bloodstream Infections (CLABSI)

1. CLABSI in Adult/Pediatric ICUs and Wards

North Carolina 2024 CLABSI Highlights in Adult/Pediatric Medical, Surgical, and Medical/Surgical Wards & ICUs

- North Carolina hospitals reported 242 infections, significantly lower than the 309.50 infections predicted by the national experience.
- The most identified organisms from adult and pediatric CLABSI patients were *Candida* and other yeasts/fungi, followed by *Enterococcus*.

Table 1. NC Central Line Associated Bloodstream Infections (CLABSI) in Adult/Pediatric Medical, Surgical and Medical/Surgical Wards & ICUs, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	242	309.50	BETTER: less than the number of infections predicted (better than the national experience)

Figure 7.

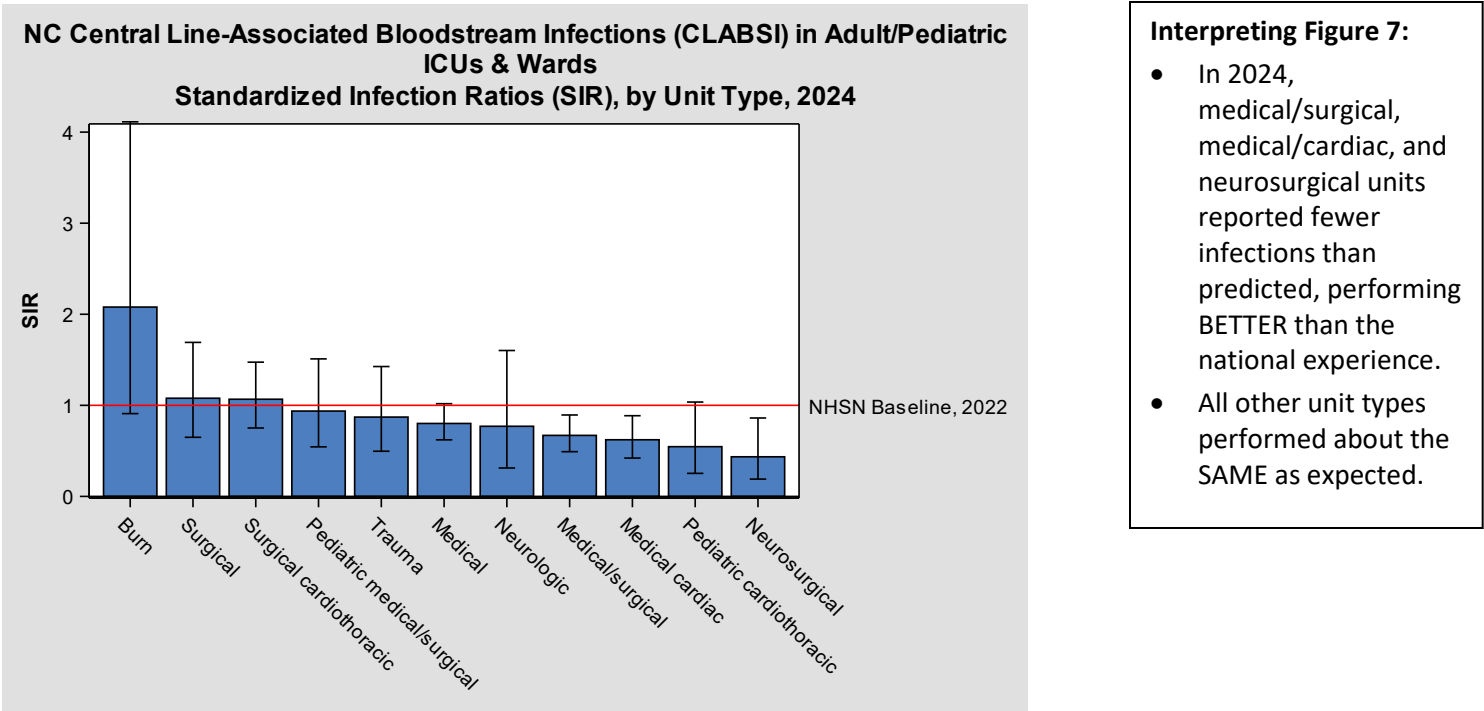
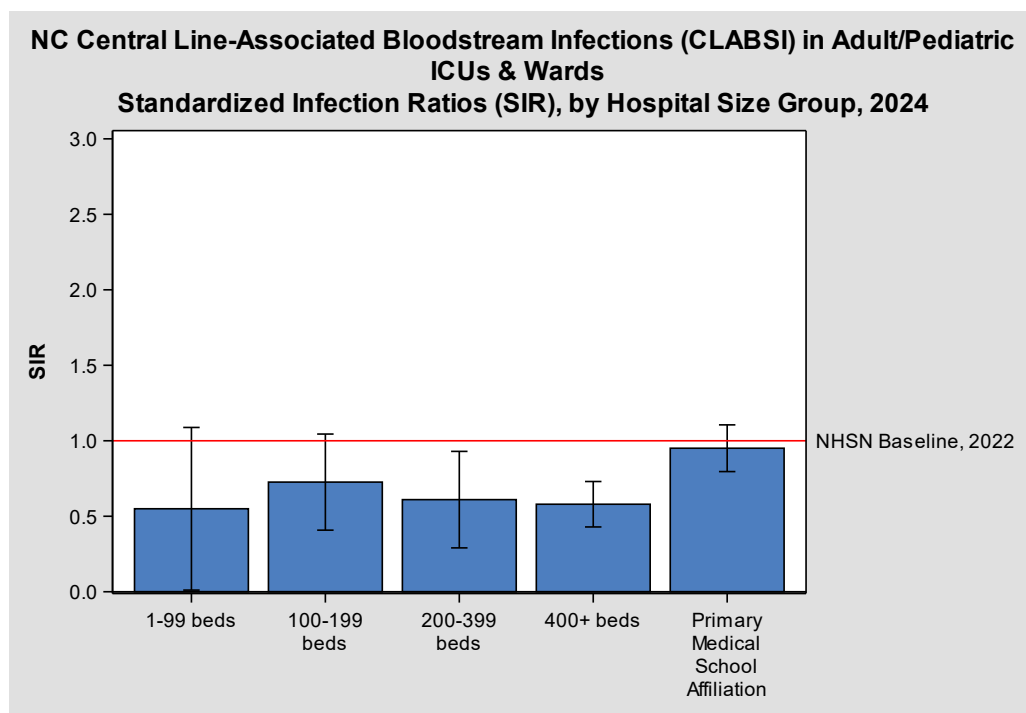


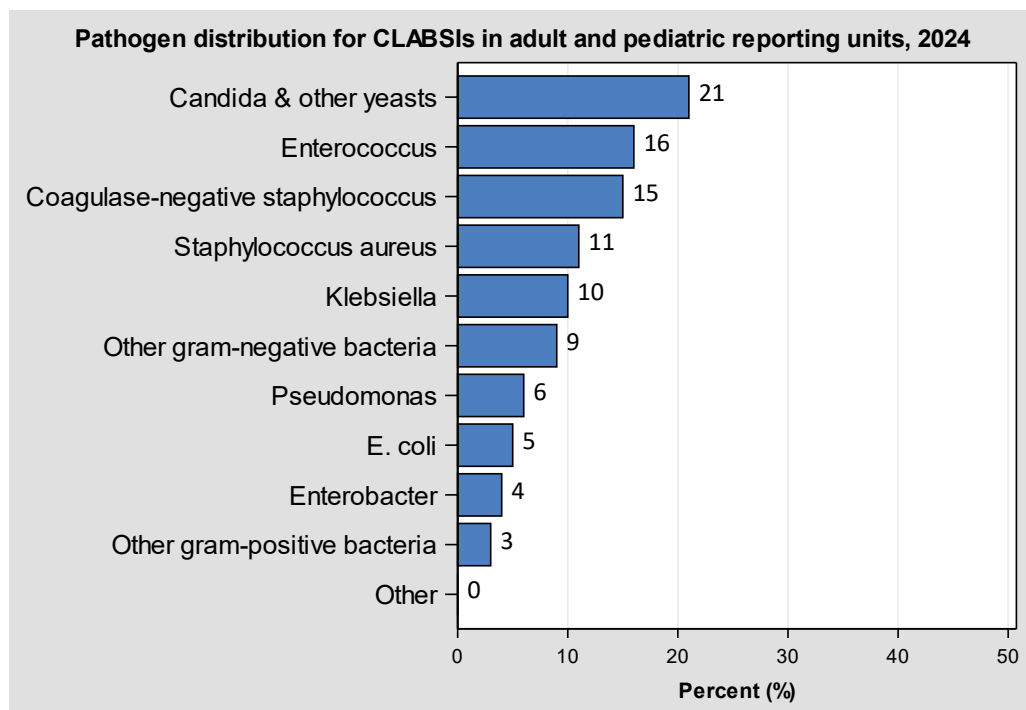
Figure 8.



Interpreting Figure 8:

- In 2024, hospitals with 200-399 and 400+ beds had fewer CLABSIs than predicted, performing **BETTER** than the national experience.
- In 2024, hospitals with 1-99, 100-199, and primary medical school affiliation had about the same number of CLABSIs as predicted performing the **SAME** as the national experience.

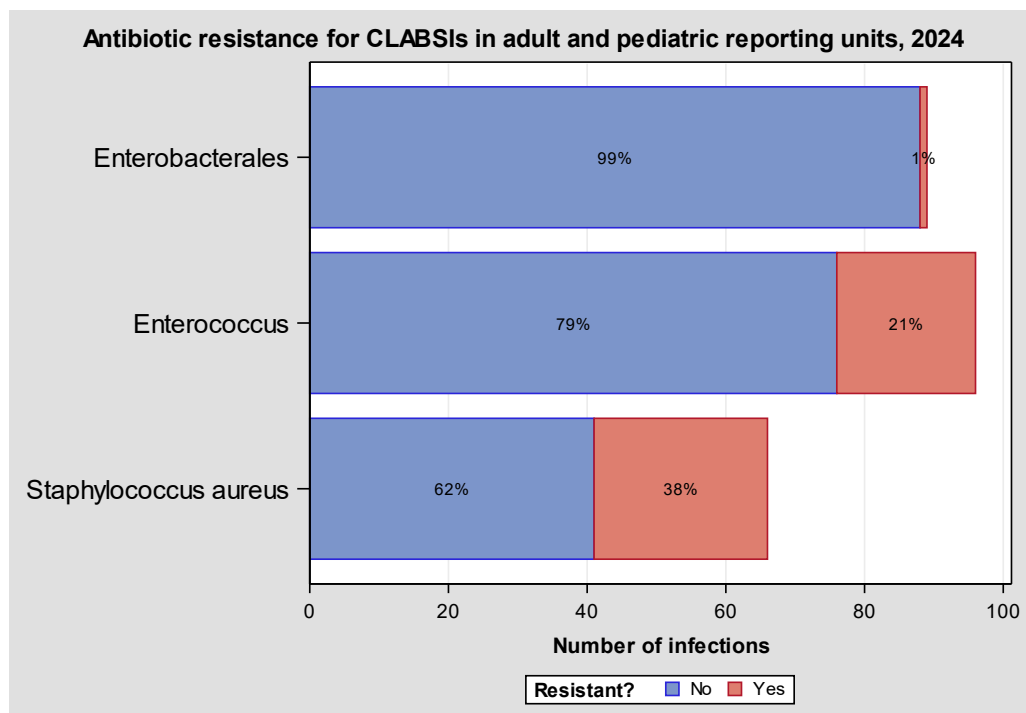
Figure 9.



Interpreting Figure 9:

- In 2024, the most commonly identified organisms from adult and pediatric CLABSI patients were *Candida* spp. and other yeasts/fungi (21%), followed by *Enterococcus* (16%) and coagulase-negative *Staphylococcus* (15%).

Figure 10.



Interpreting Figure 10:

- In 2024, 38% of *Staphylococcus aureus* identified among adult/pediatric CLABSIs were resistant to methicillin.
- 21% of *Enterococcus* identified among adult/pediatric CLABSIs were resistant to vancomycin.
- The percentage of Enterobacterales identified among adult/pediatric CLABSIs resistant to carbapenems was low (1%).

The following SIR plots summarize CLABSI infection data among Adult/Pediatric locations for North Carolina hospitals by hospital groups (Appendix D).

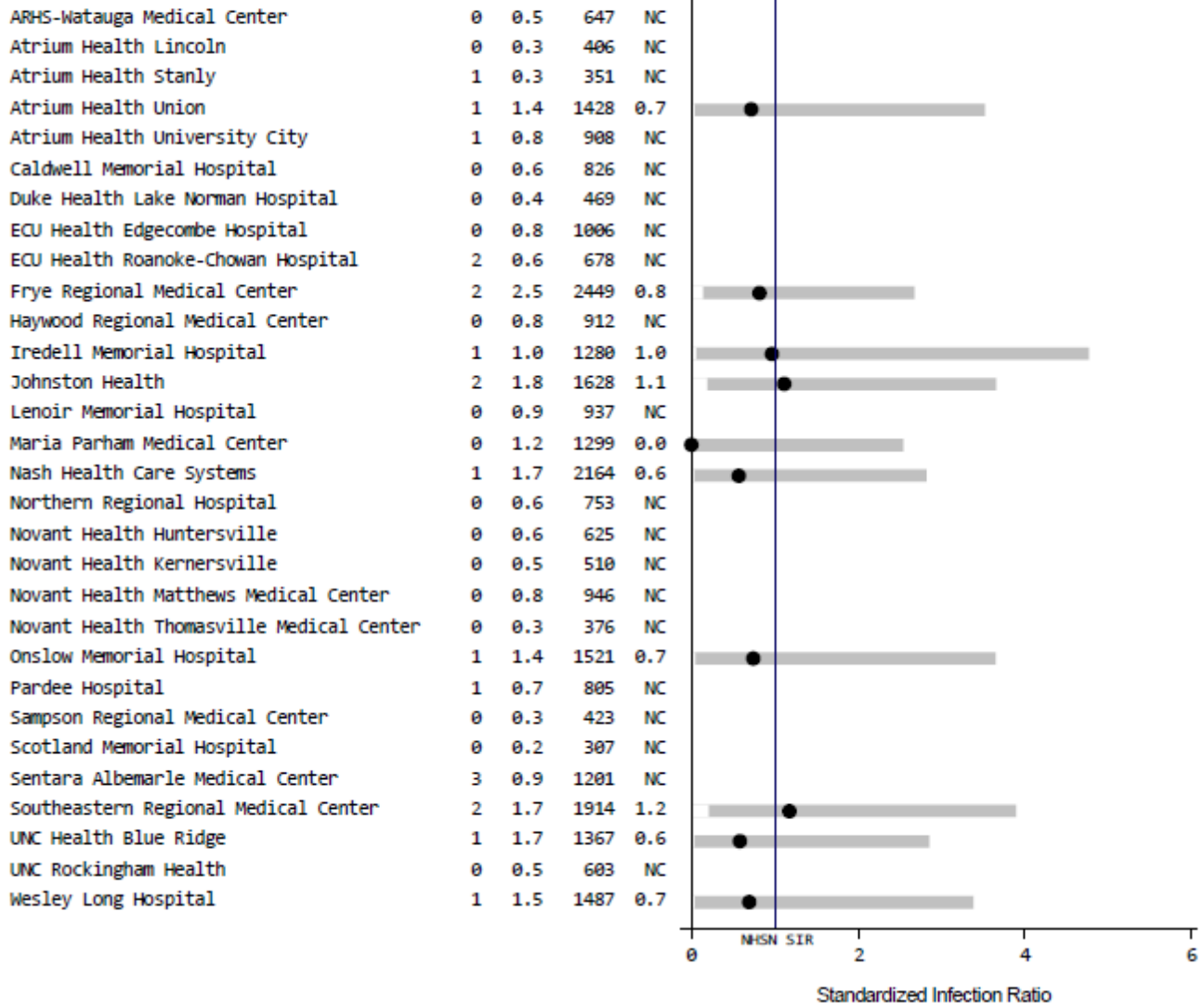
ALL hospitals with 0-99 beds had a predicted number of CLABSI infections less than 1, therefore SIRs were not calculated. More information can be found here: [NHSN SIR Guide](#).

Central Line-Associated Bloodstream Infections (CLABSI) in Adult & Pediatric ICUs and Wards
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL

OBS PRED CLdays SIR

SIR AND 95% CONFIDENCE INTERVAL
 COMPARED TO 2022 NATIONAL BASELINE



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

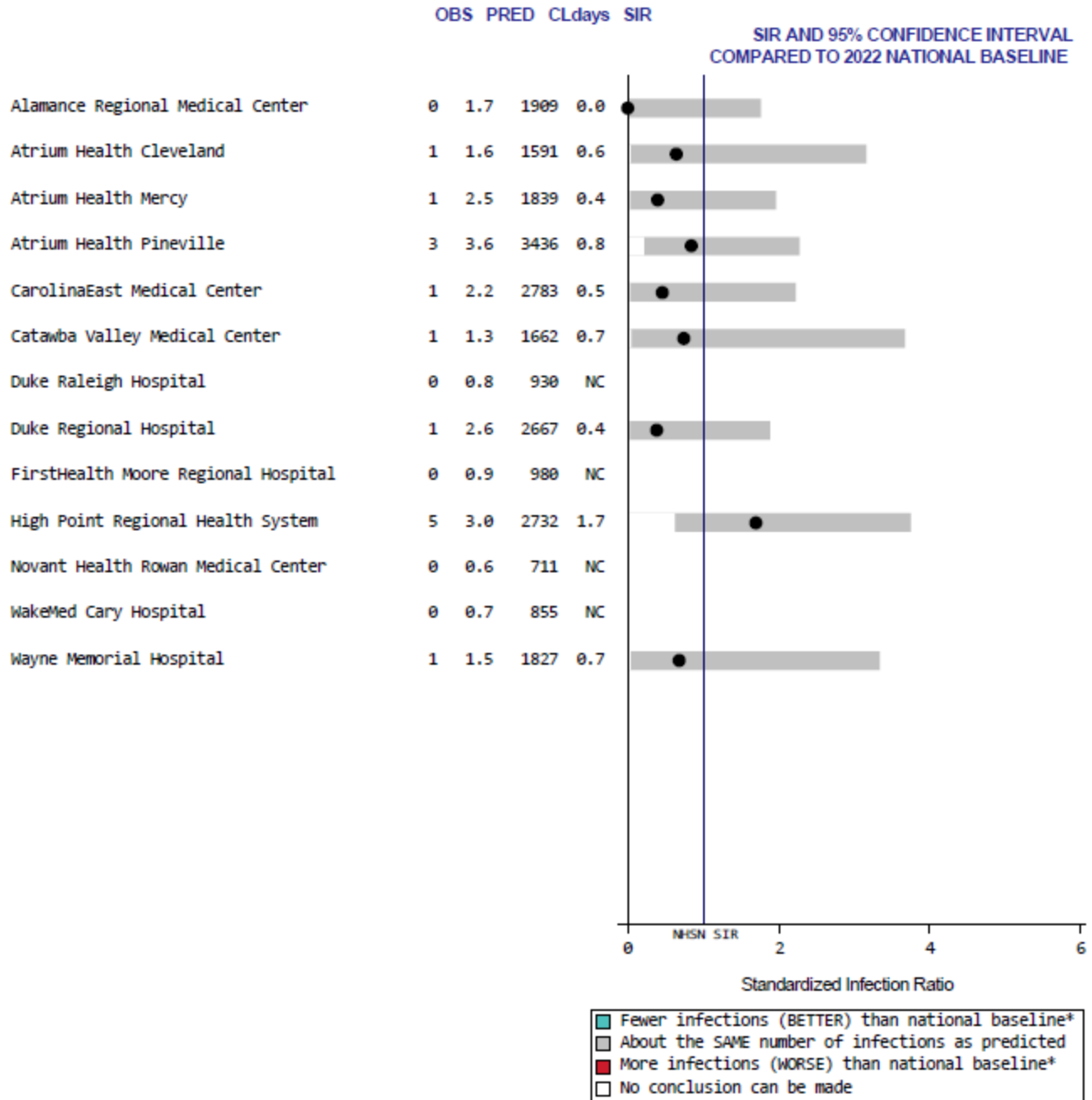
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Central Line-Associated Bloodstream Infections (CLABSI) in Adult & Pediatric ICUs and Wards
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

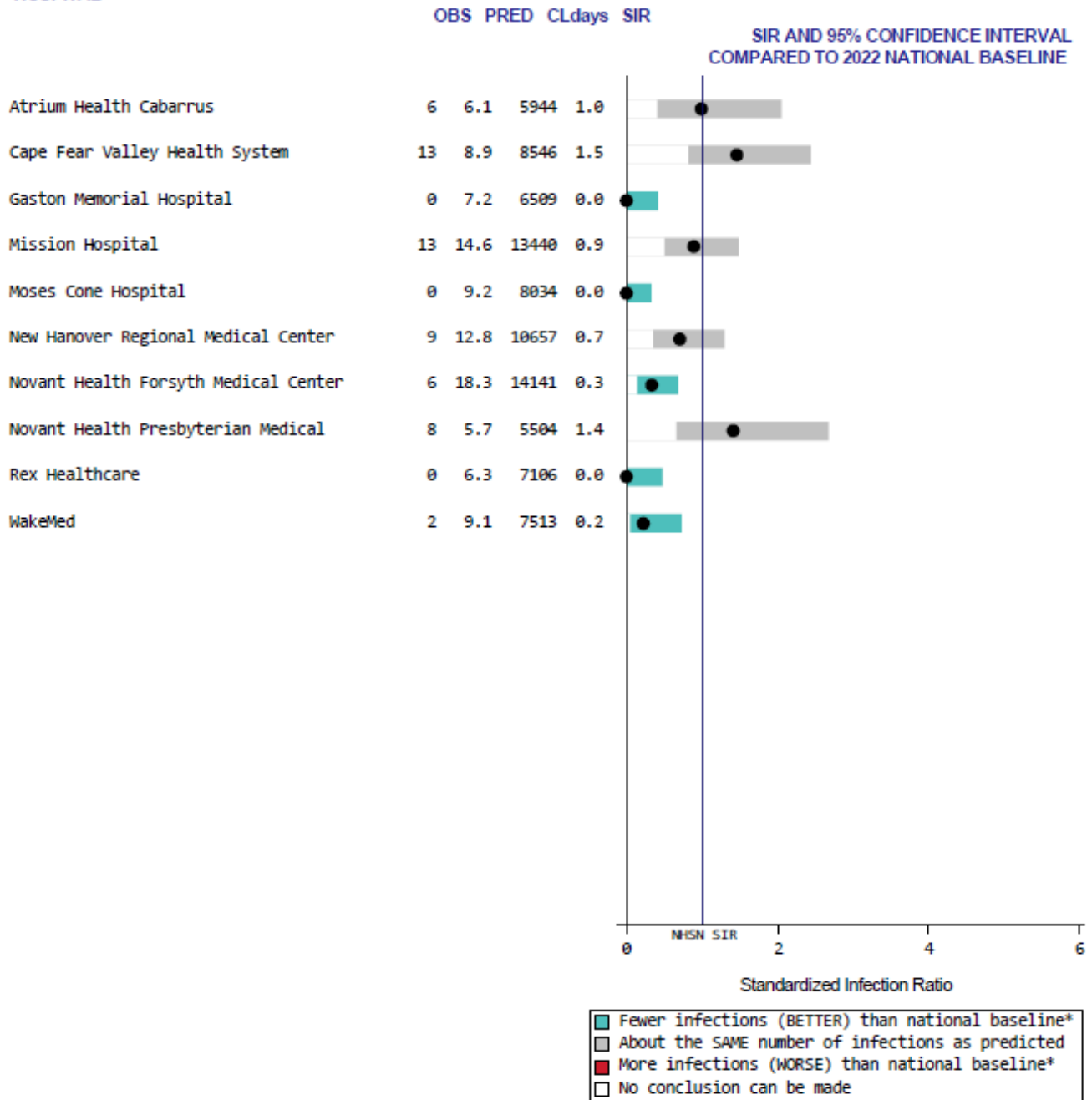
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Central Line-Associated Bloodstream Infections (CLABSI) in Adult & Pediatric ICUs and Wards
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

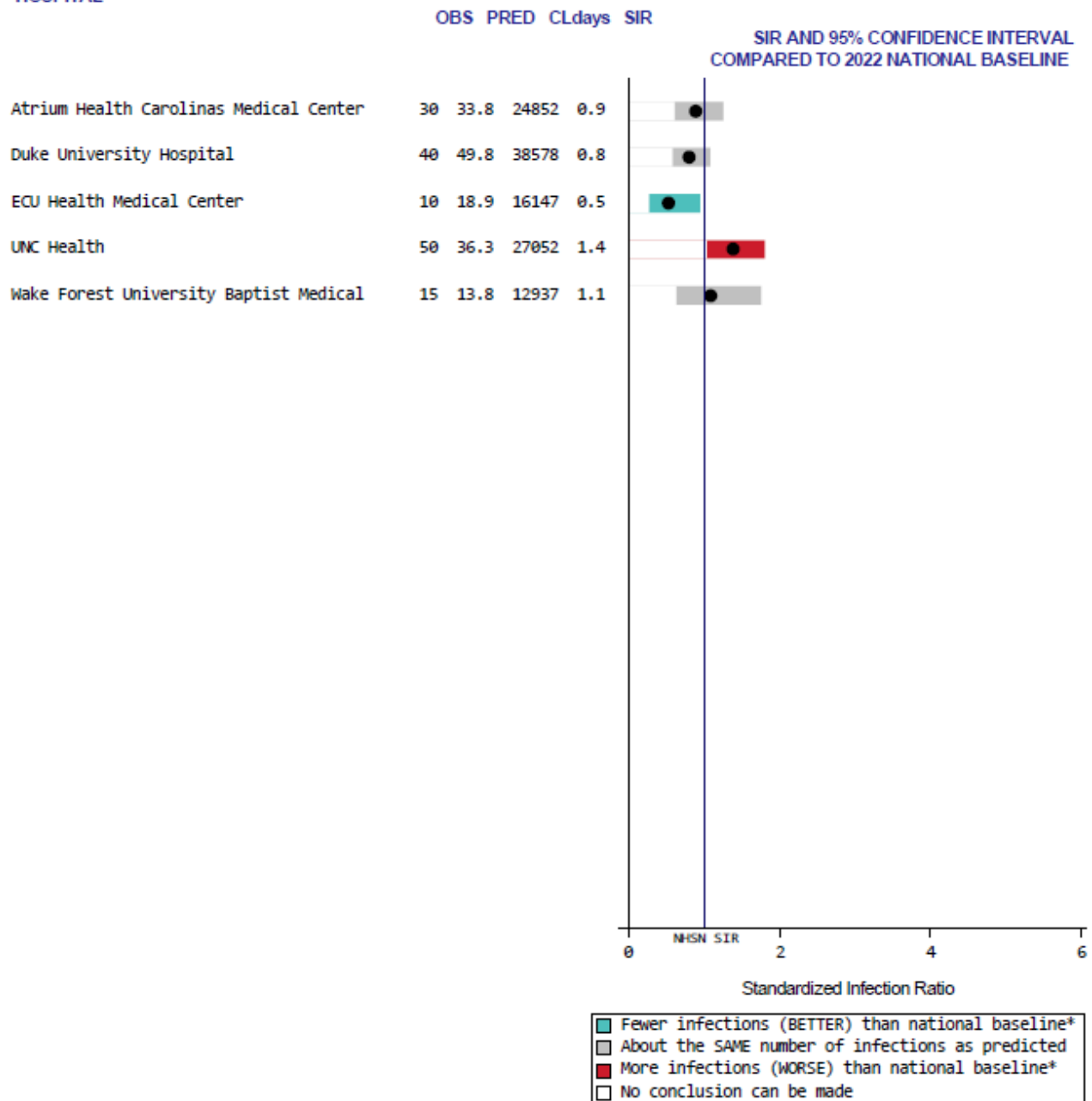
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Central Line-Associated Bloodstream Infections (CLABSI) in Adult & Pediatric ICUs and Wards
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

2. CLABSI in Neonatal Intensive Care Units

North Carolina 2024 CLABSI Highlights in NICUs

- In 2024, North Carolina hospitals reported 50 infections in neonatal ICUs (NICUs), which was not significantly different than the 40.74 infections that were predicted.
- The most identified organism from NICU CLABSI patients was *Escherichia coli*.

Table 2. NC Central Line Associated Bloodstream Infections (CLABSI) in neonatal ICUs, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	50	40.74	= SAME: about the same number of infections as predicted (same as the national experience)

Figure 11.

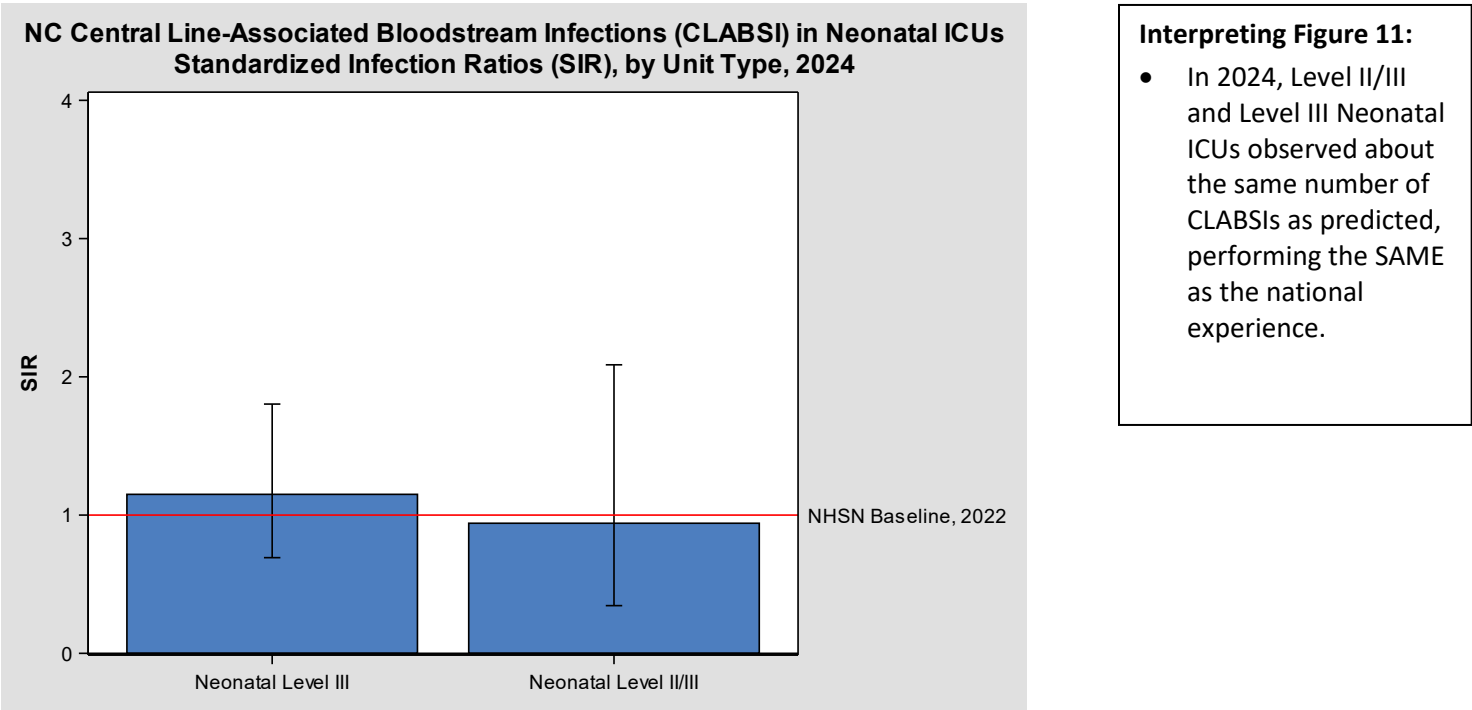
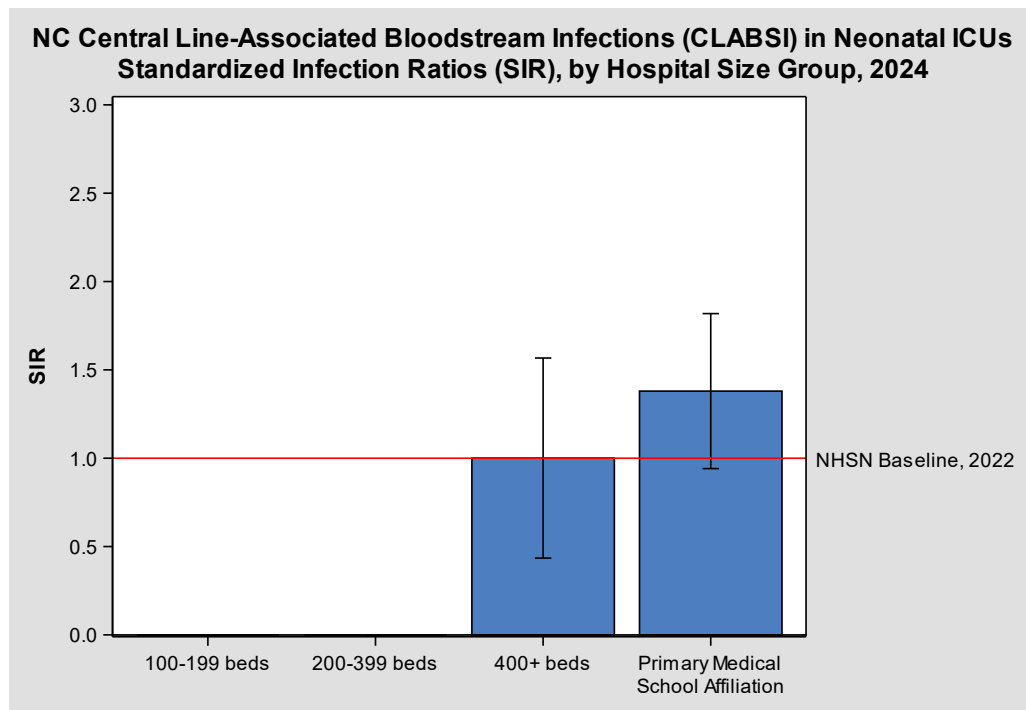


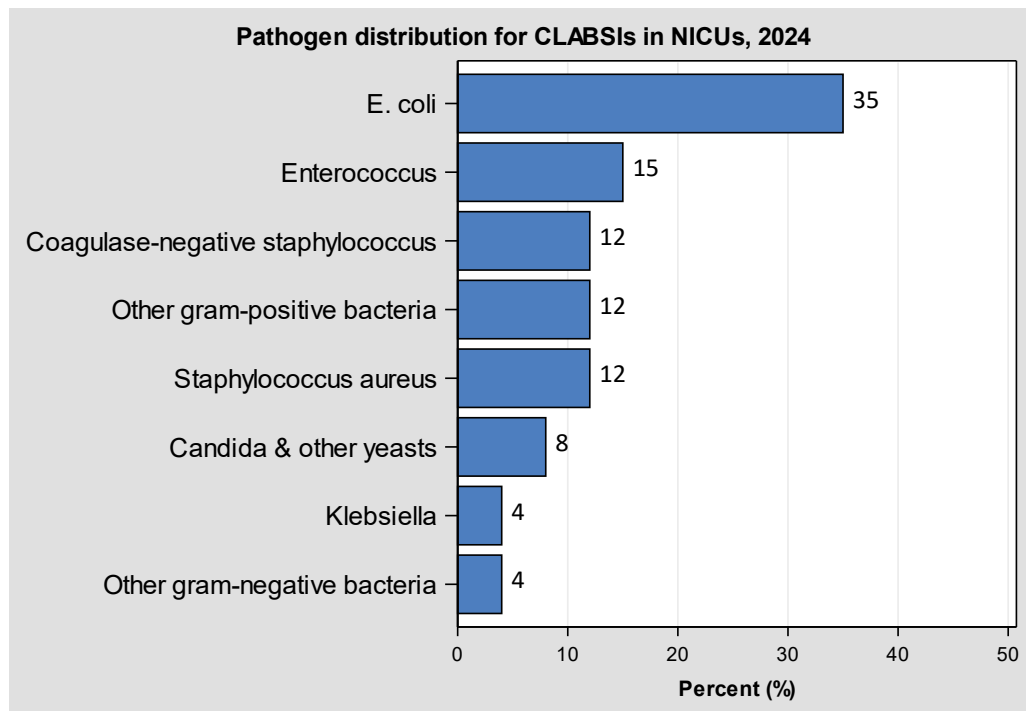
Figure 12.



Interpreting Figure 12:

- In 2024 hospitals with 400+ and primary medical school affiliation experienced about the same number of CLABSIs in NICUs as predicted, performing the SAME as the national experience.
- Hospitals with 100-199 and 200-399 beds reported no CLABSIs in NICUs.

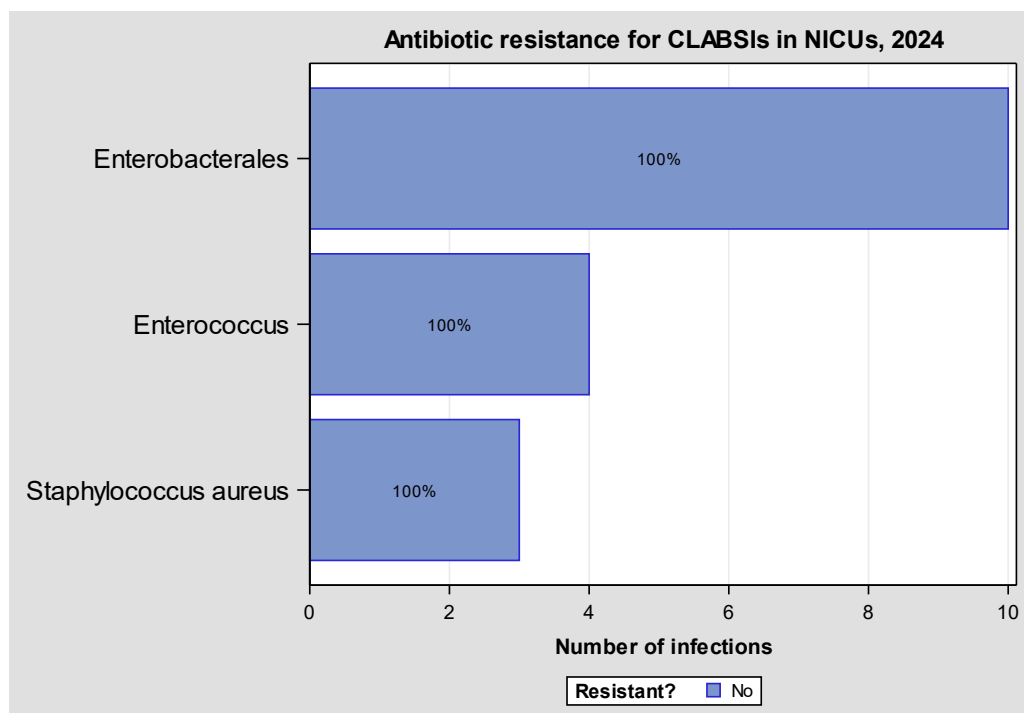
Figure 13.



Interpreting Figure 13:

- In 2024, *Escherichia coli* (35%), was the most common pathogen identified from CLABSIs in NICU locations, followed by *Enterococcus* and Coag-neg *Staphylococcus*.
- *E.coli* is a much more common cause of CLABSIs in NICUs than in adult/pediatric wards/ICUs.

Figure 14.



Interpreting Figure 14:

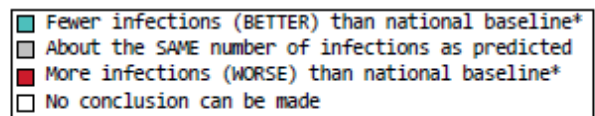
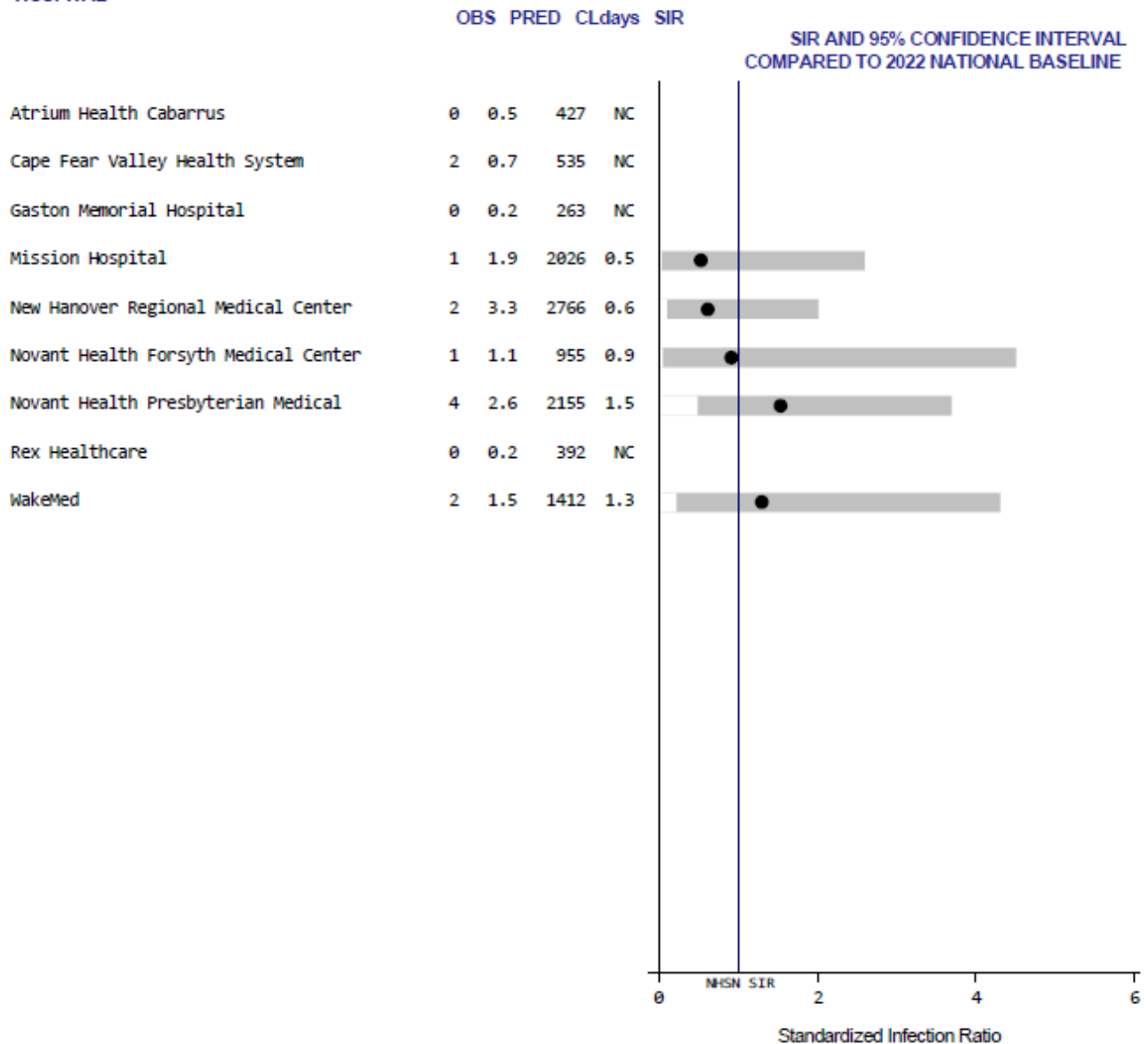
- In 2024, no *Staphylococcus aureus* identified among observed CLABSIs in NICUs were resistant to methicillin.
- No *Enterobacterales* from CLABSIs in NICUs were resistant to carbapenems.
- No *Enterococcus* spp. from CLABSIs in NICUs were resistant to vancomycin.

The following SIR plots summarize CLABSI infection data among NICUs in North Carolina hospitals by hospital groups (Appendix D).

ALL hospitals with 0-99, 100-199, and 200-299 beds had a predicted number of NICU CLABSI infections less than 1, therefore SIRs were not calculated. More information can be found here: [NHSN SIR Guide](#).

Central Line-Associated Bloodstream Infections (CLABSI) in NICUs
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

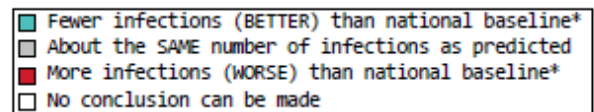
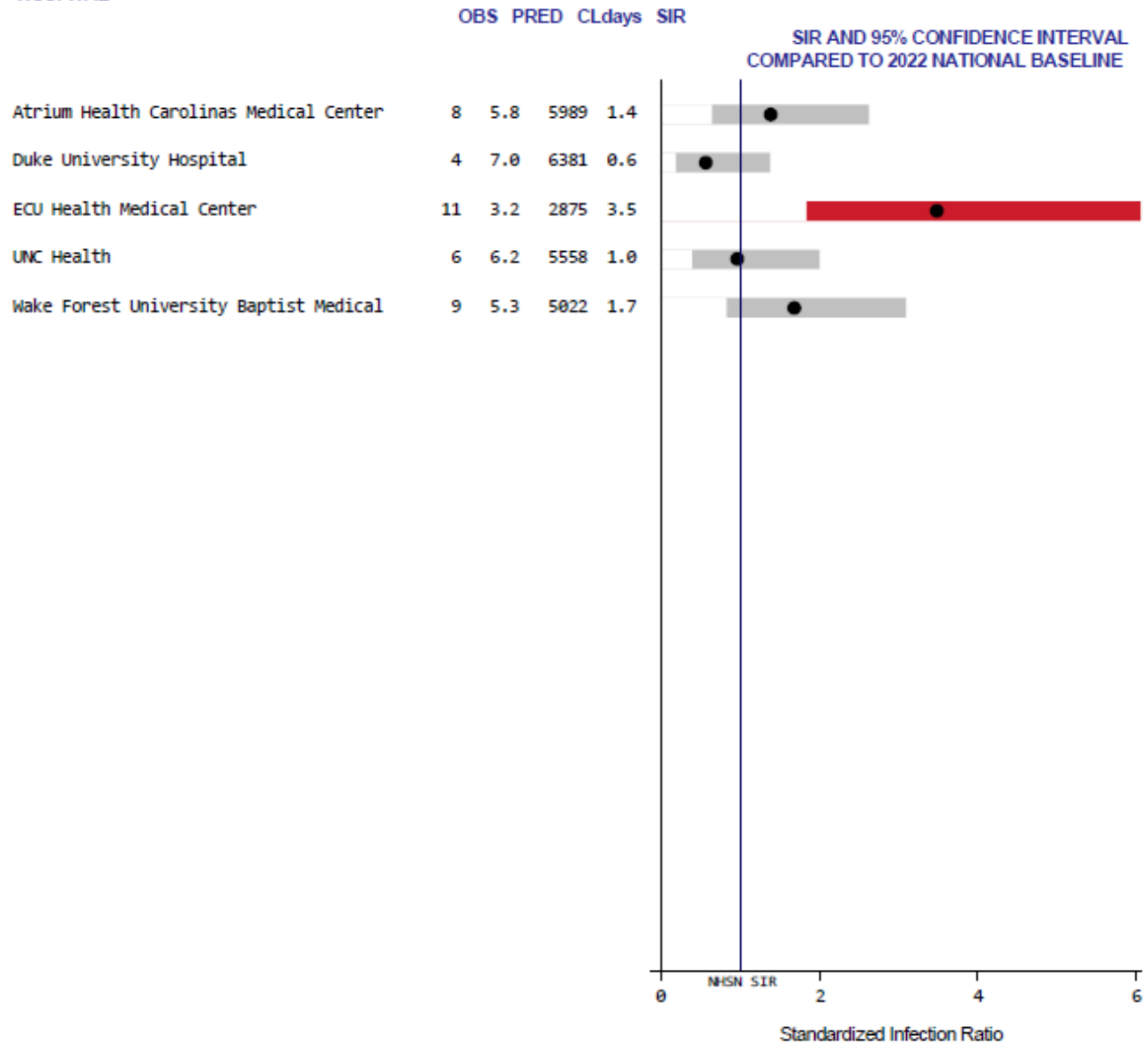
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Central Line-Associated Bloodstream Infections (CLABSI) in NICUs
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

CLdays = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

B. Catheter-Associated Urinary Tract Infections (CAUTI)

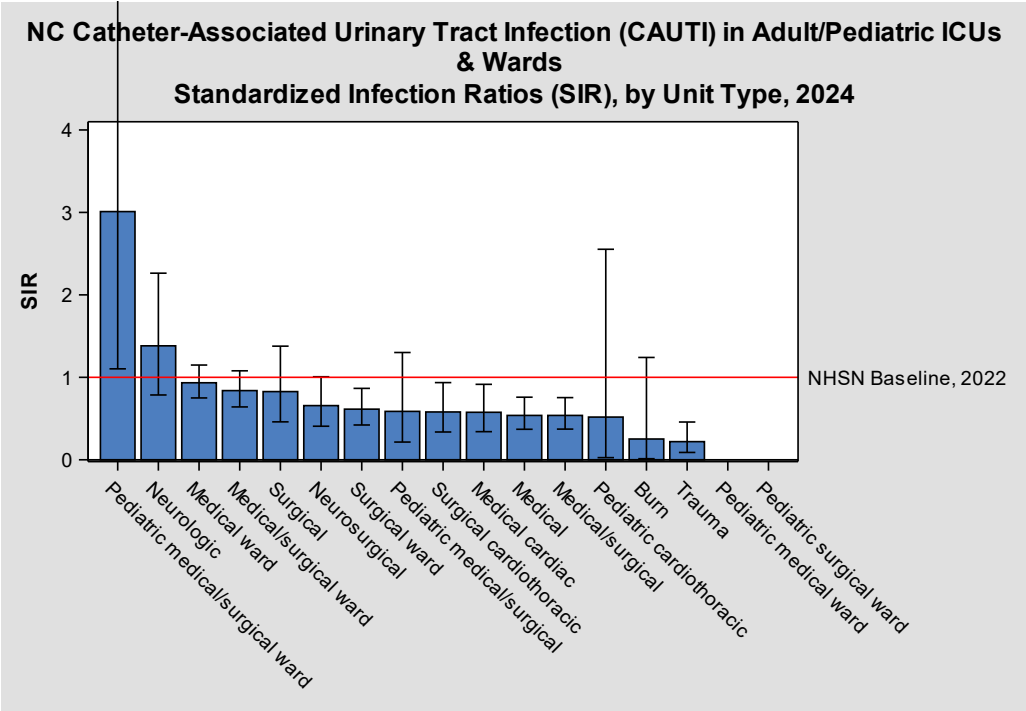
North Carolina 2024 CAUTI Highlights

- North Carolina hospitals reported 328 CAUTI infections, significantly lower than the 476.66 infections predicted by the national experience.
- The most identified organisms were *Escherichia coli* and *Klebsiella*.

Table 3. NC Catheter-Associated Urinary Tract Infections (CAUTI) in ICUs and wards, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	328	476.66	BETTER: Fewer infections than were predicted (better than the national experience)

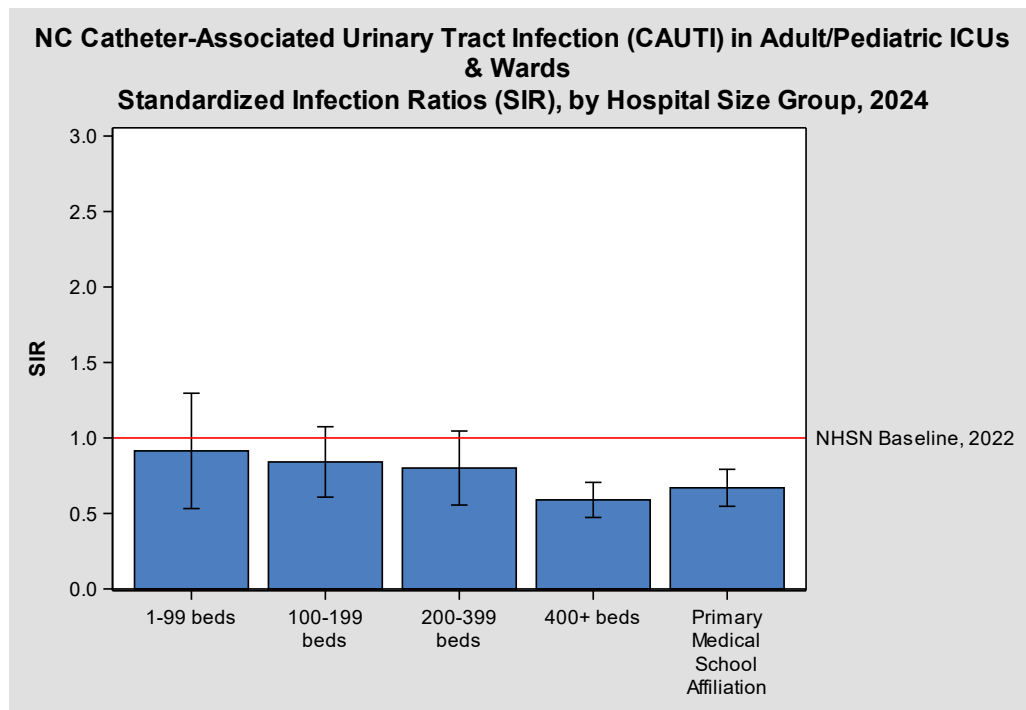
Figure 15.



Interpreting Figure 15:

- In 2024, surgical ward, surgical cardiothoracic, medical cardiac, medical, medical/surgical, and trauma units had fewer CAUTIs than predicted, performing BETTER than the national experience.
- Pediatric medical/surgical wards had more CAUTIs than predicted, performing WORSE than the national experience.
- Neurologic, medical ward, medical/surgical ward, surgical, neurosurgical, pediatric medical/surgical, pediatric cardiothoracic, and burn units had about the same number of CAUTIs as predicted, performing the SAME as the national experience.
- Pediatric medical wards and pediatric surgical wards reported no CAUTIs.

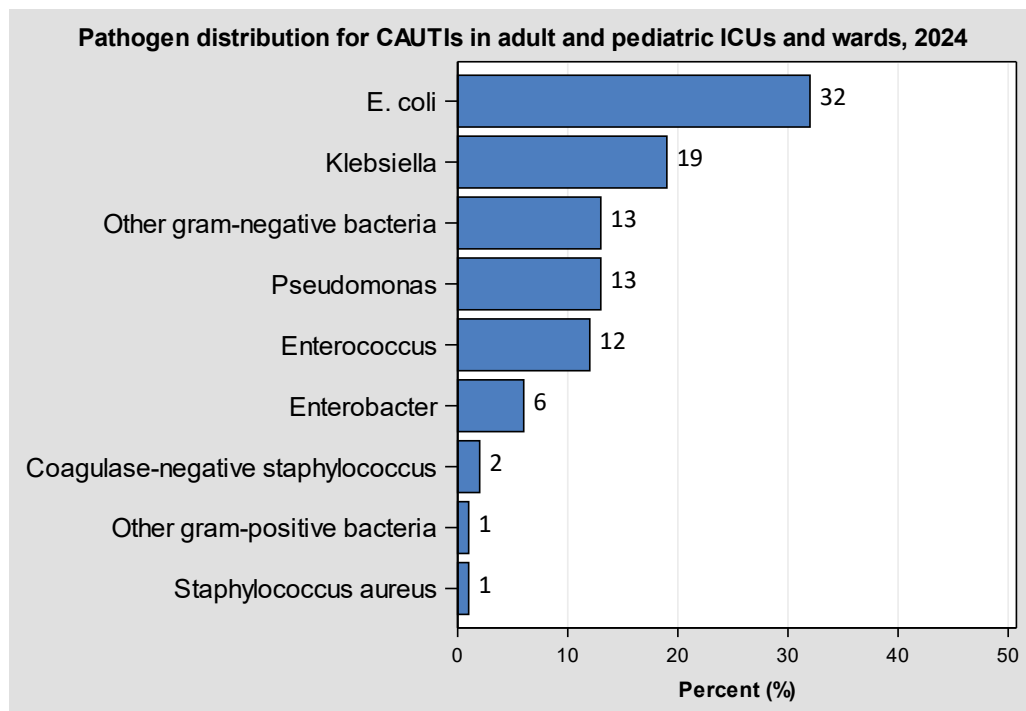
Figure 16.



Interpreting Figure 16:

- In 2024, hospitals with 400+ beds and primary medical school affiliation reported fewer CAUTIs than predicted, performing **BETTER** than the national experience.
- Hospitals with 1-99, 100-199, and 200-399 beds reported about the same number of CAUTIs as expected, performing the **SAME** as the national experience.

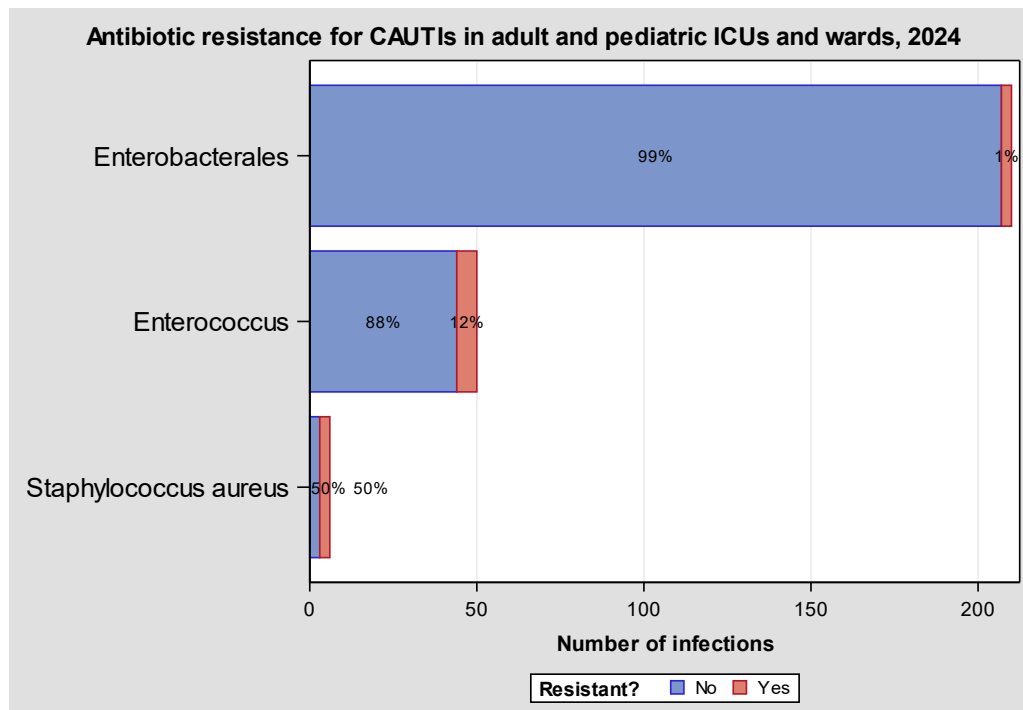
Figure 17.



Interpreting Figure 17:

- In 2024, *E. coli* (32%), *Klebsiella* (19%) and other gram-negative bacteria (13%) were the most commonly identified pathogens among reported CAUTI infections.
- *Candida* spp. and other yeasts are considered excluded organisms and cannot be used to meet the CAUTI definition.

Figure 18.



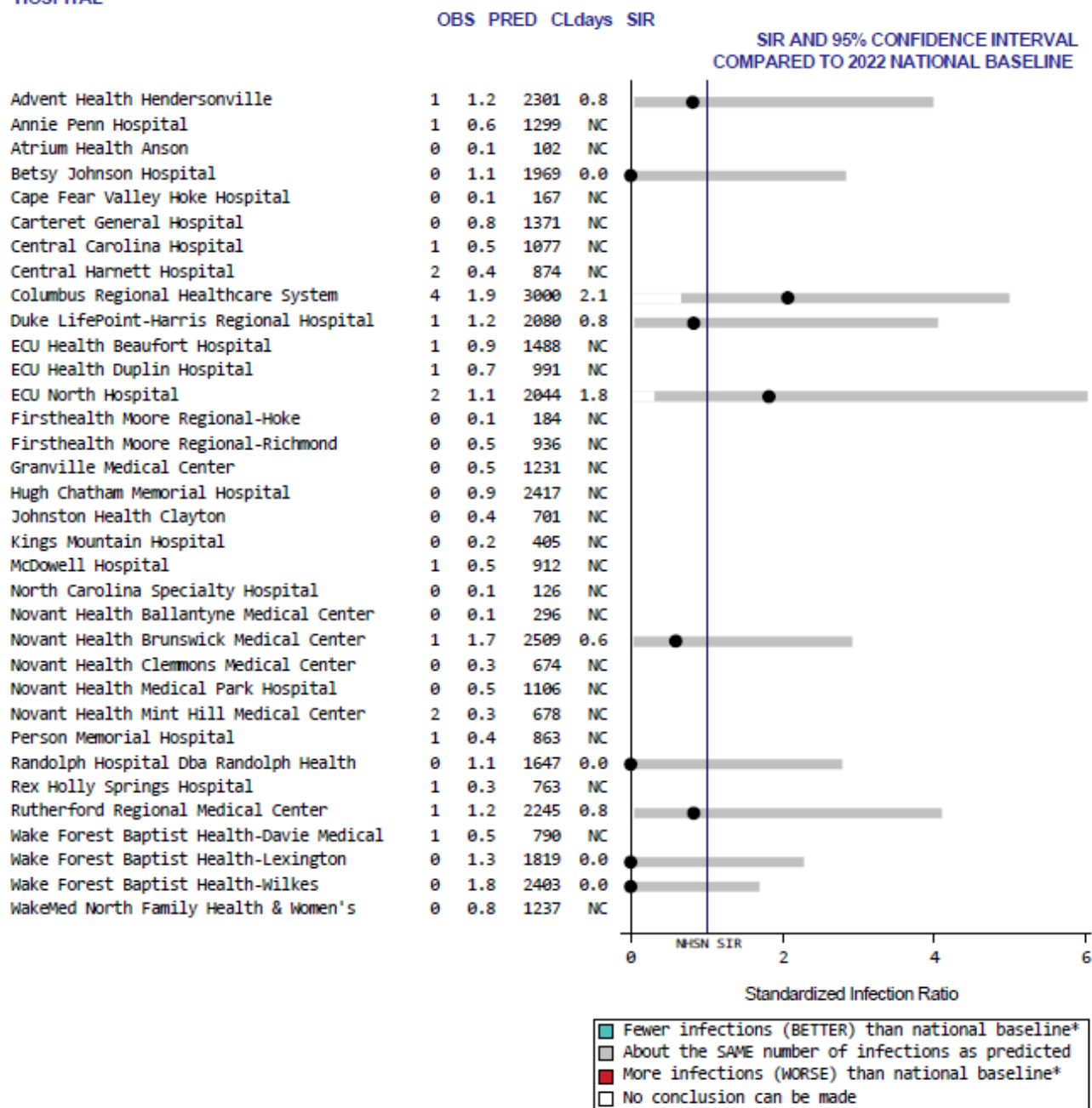
Interpreting Figure 18:

- In 2024, 50% of *Staphylococcus aureus* identified among reported CAUTIs were resistant to methicillin.
- 12% of *Enterococcus* spp. among reported CAUTIs were resistant to vancomycin.
- 1% of the Enterobacterales among reported CAUTIs were resistant to carbapenems.

The following SIR plots summarize CAUTI infection data for North Carolina hospitals by hospital groups (Appendix D).

Catheter-Associated Urinary Tract Infections (CAUTI)
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with less than 100 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

UCD = # Urinary Catheter Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 catheter days

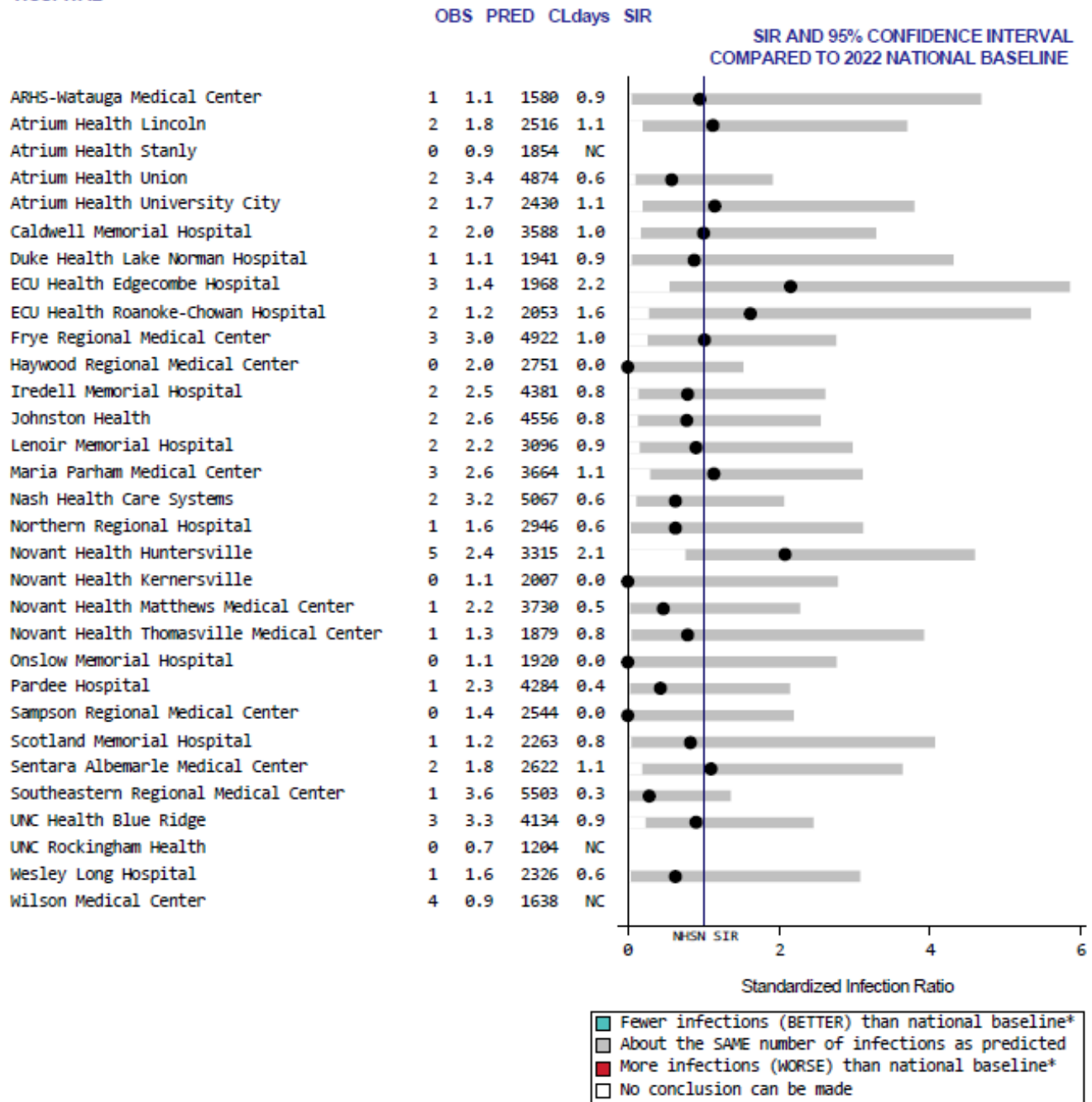
N = <50 catheter days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Catheter-Associated Urinary Tract Infections (CAUTI)
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

UCD = # Urinary Catheter Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 catheter days

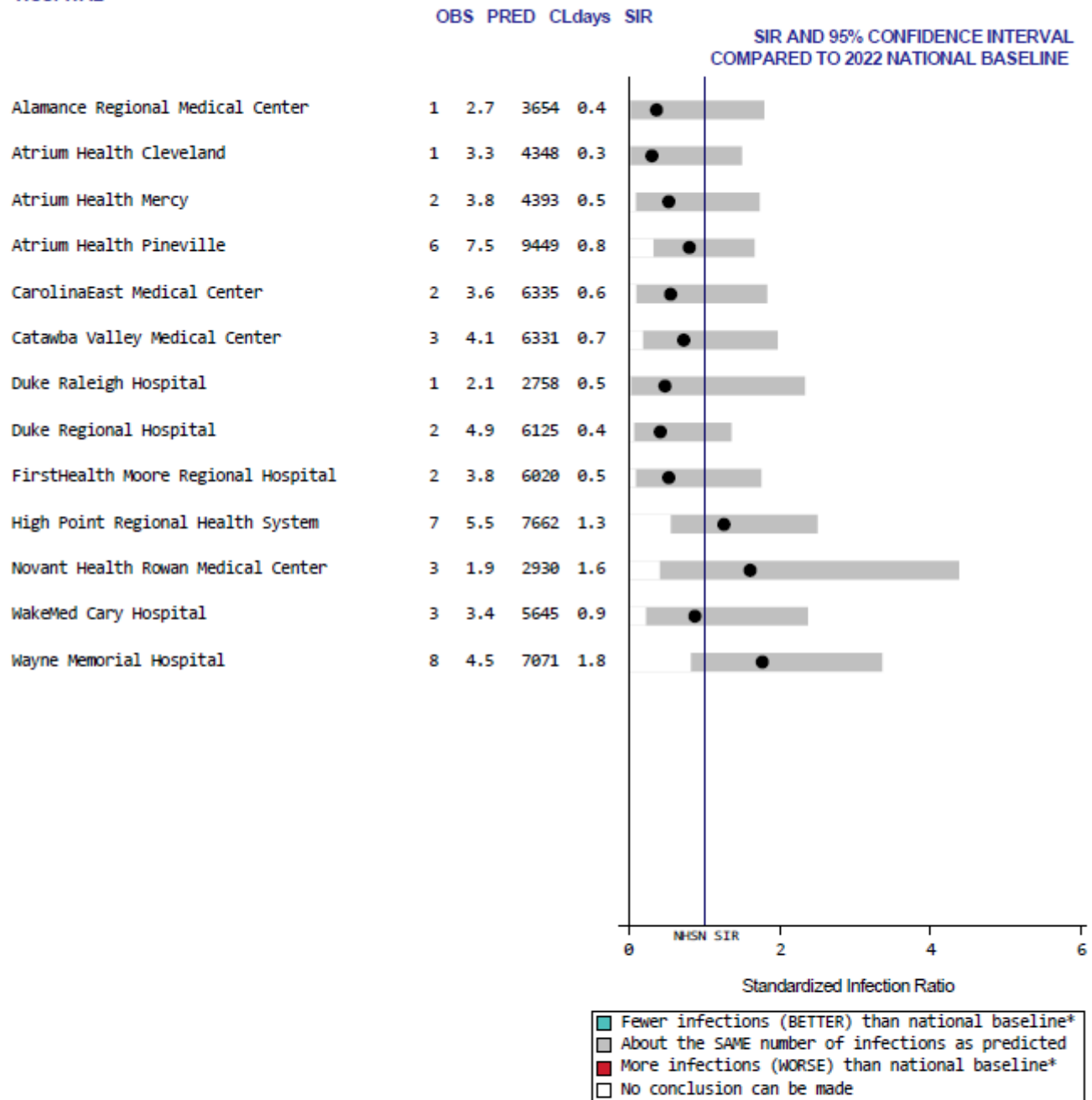
N = <50 catheter days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Catheter-Associated Urinary Tract Infections (CAUTI)
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

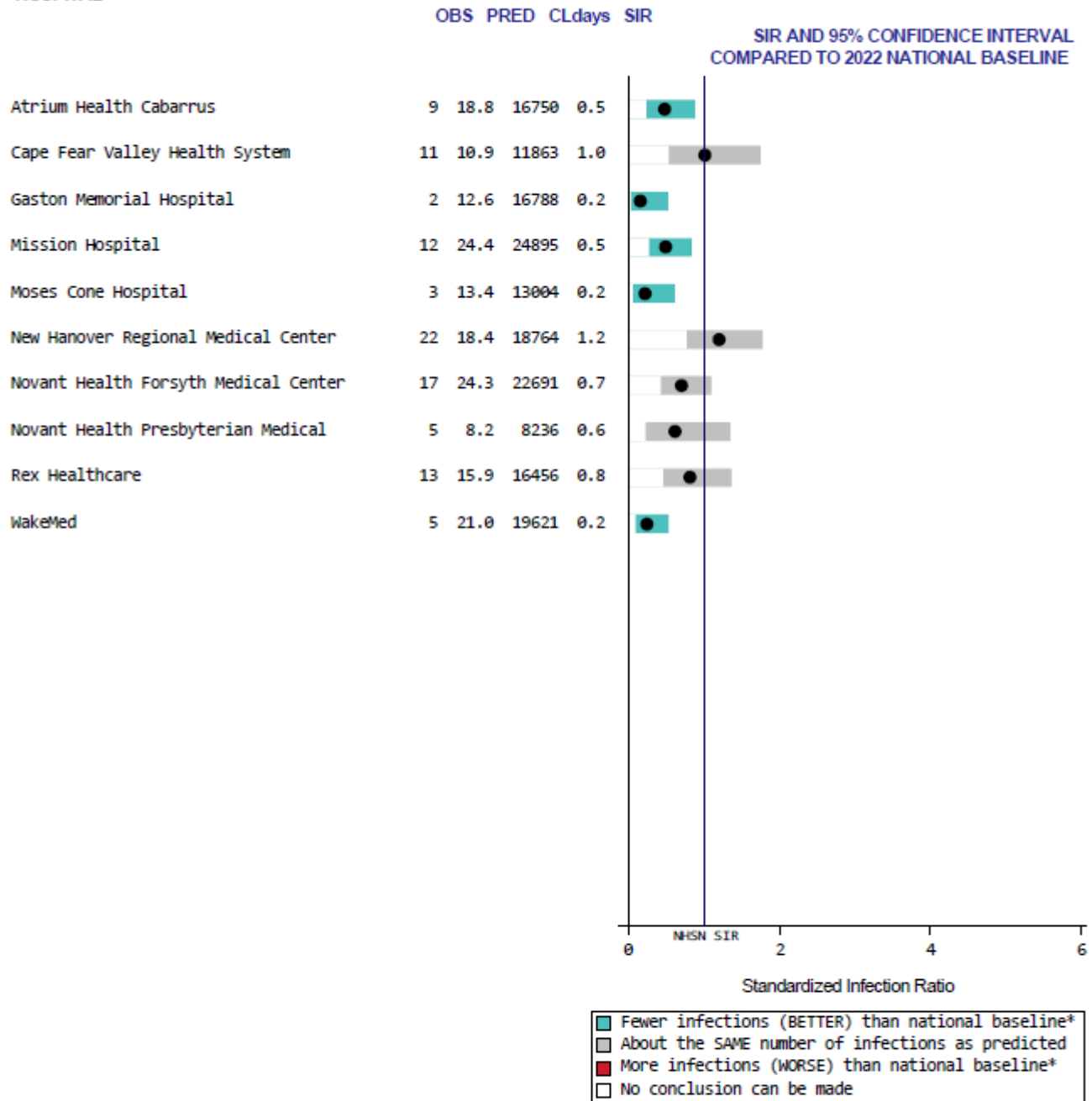
HOSPITAL



Data reported as of May 19, 2024.
 OBS = # infections observed
 PRED = # infections statistically predicted by national baseline
 UCD = # Urinary Catheter Days
 SIR = Standardized infection ratio (OBS/PRED # of infections)
 NA = Data not shown for hospitals with <50 catheter days
 N = <50 catheter days reported
 NC = SIR not calculated for hospitals with <1 predicted infection
 *Significantly different than 2022 national baseline

Catheter-Associated Urinary Tract Infections (CAUTI)
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

UCD = # Urinary Catheter Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 catheter days

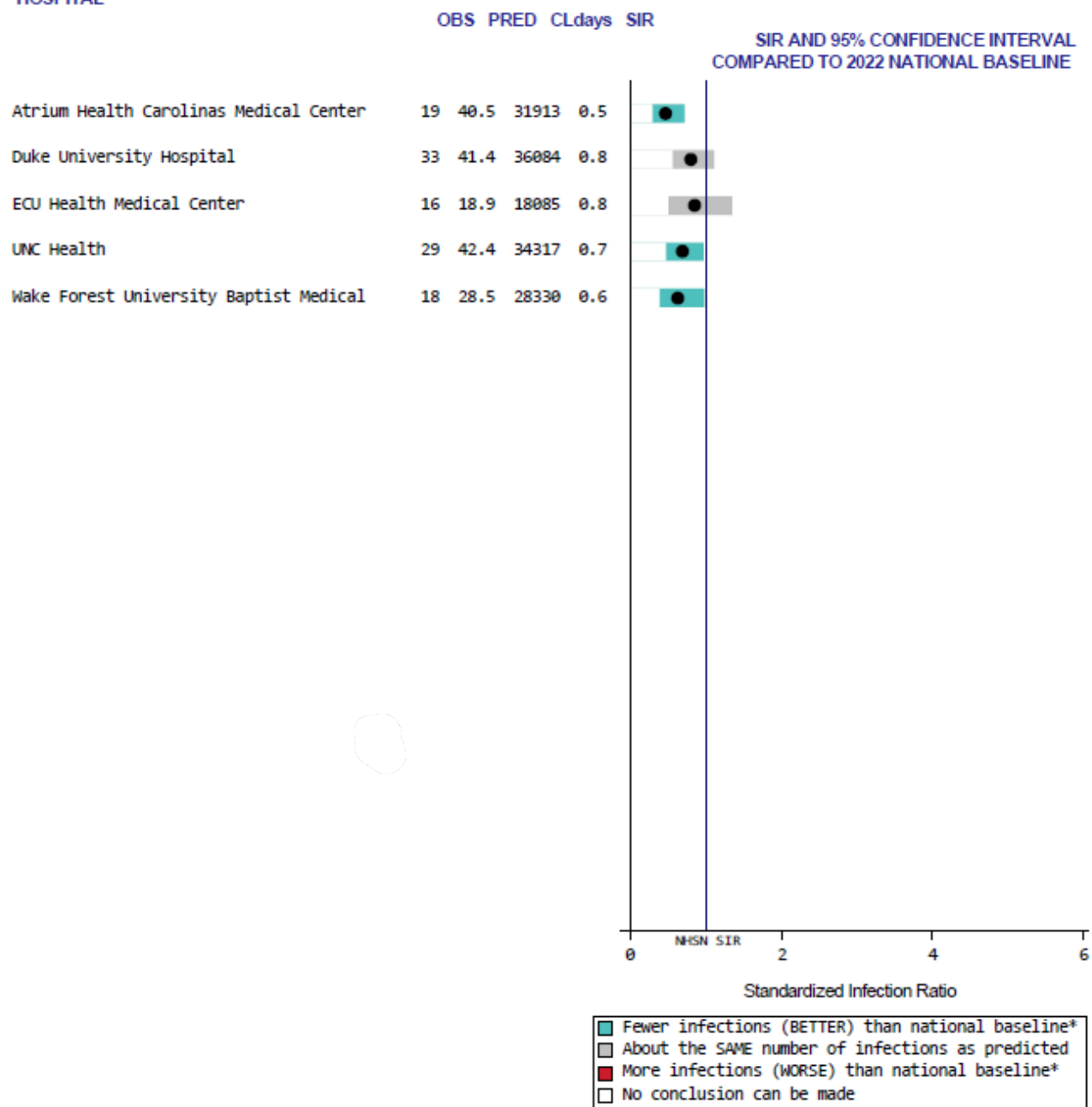
N = <50 catheter days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Catheter-Associated Urinary Tract Infections (CAUTI)
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

UCD = # Urinary Catheter Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 catheter days

N = <50 catheter days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

C. Surgical Site Infections (SSI)

1. Abdominal Hysterectomies

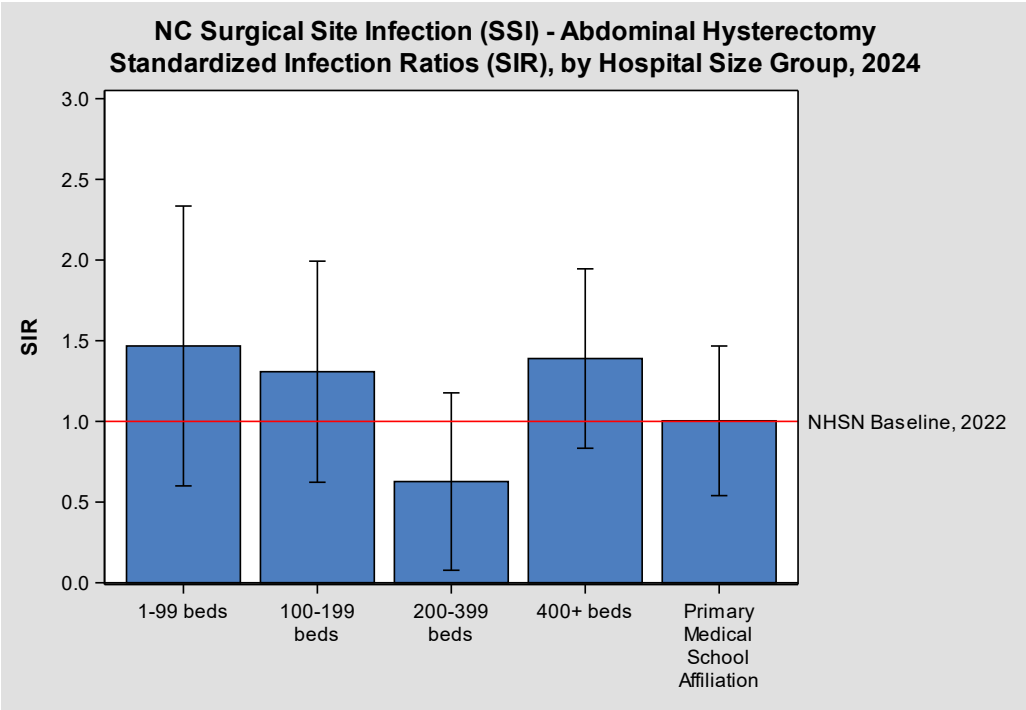
North Carolina 2024 SSI Following Abdominal Hysterectomy Highlights

- North Carolina reported 72 surgical site infections (SSIs) after inpatient abdominal hysterectomies performed on adults ≥ 18 years in North Carolina acute care hospitals, which was not significantly different than the 63.85 infections predicted.
- In 2024, the most identified organism from adult patients with SSI following inpatient abdominal hysterectomies was other gram-negative bacteria.

Table 4. NC Surgical Site Infections following Abdominal Hysterectomies, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	72	63.85	= SAME: about the same number of infections as predicted (same as the national experience)

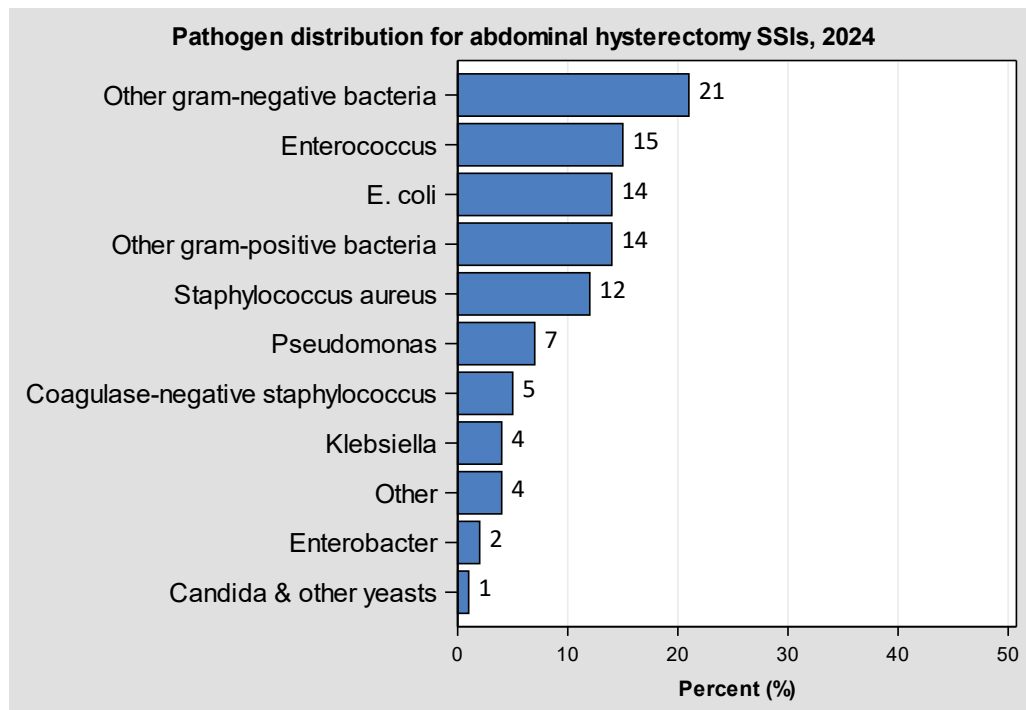
Figure 19.



Interpreting Figure 19:

- All hospital size groups observed about the same number of SSIs following abdominal hysterectomies as predicted, performing the SAME as the 2022 national experience.

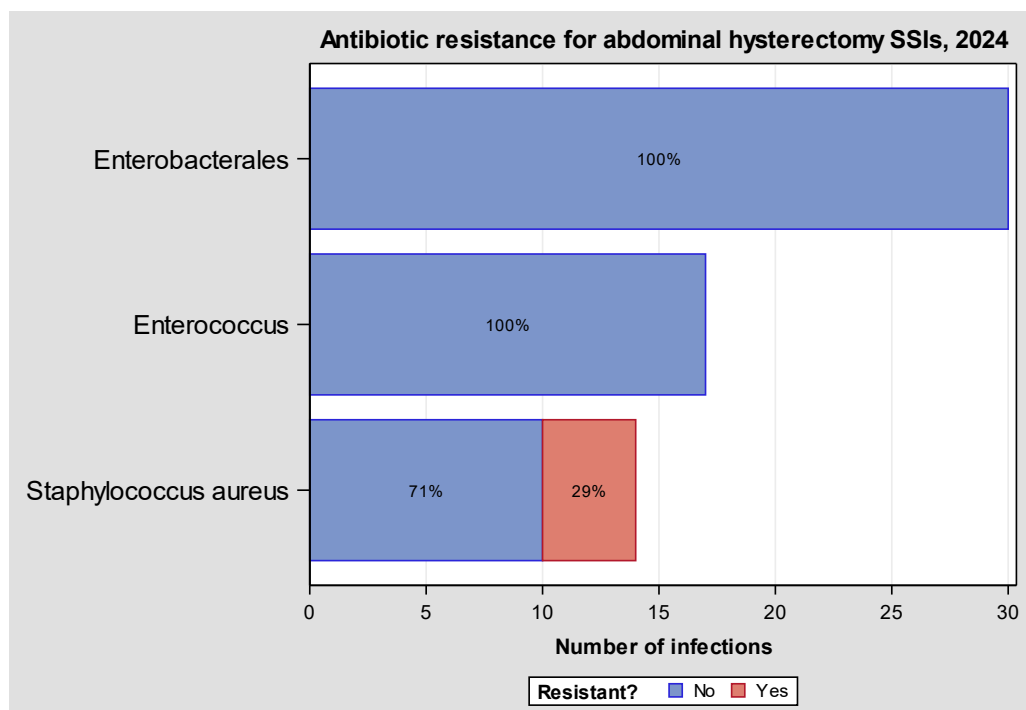
Figure 20.



Interpreting Figure 20:

- In 2024, “other gram-negative bacteria” (21%) was the most commonly reported pathogen among SSIs following abdominal hysterectomies followed by *Enterococcus* spp. (15%) and *E. coli* (14%).

Figure 21.



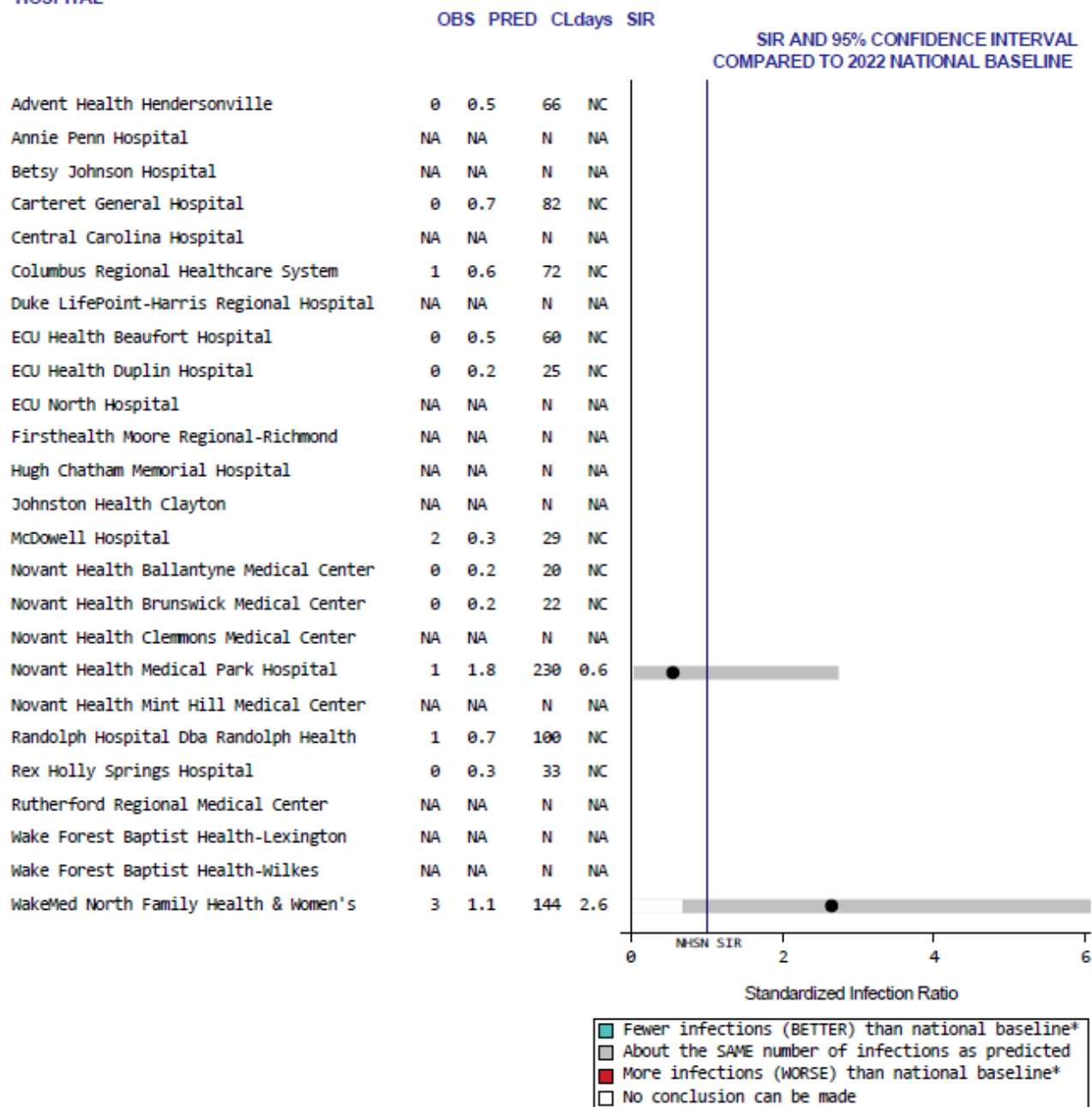
Interpreting Figure 21:

- In 2024, 29% of *Staphylococcus aureus* identified among SSIs following abdominal hysterectomies were resistant to methicillin.
- None of the Enterobacterales from SSIs following abdominal hysterectomies were resistant to carbapenems.
- None of the *Enterococcus* spp. from SSIs following abdominal hysterectomies were resistant to vancomycin.

The following SIR plots summarize SSI infection following abdominal hysterectomy data for North Carolina hospitals by hospital groups (Appendix D).

Surgical Site Infections (SSI) - Abdominal Hysterectomies
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with less than 100 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

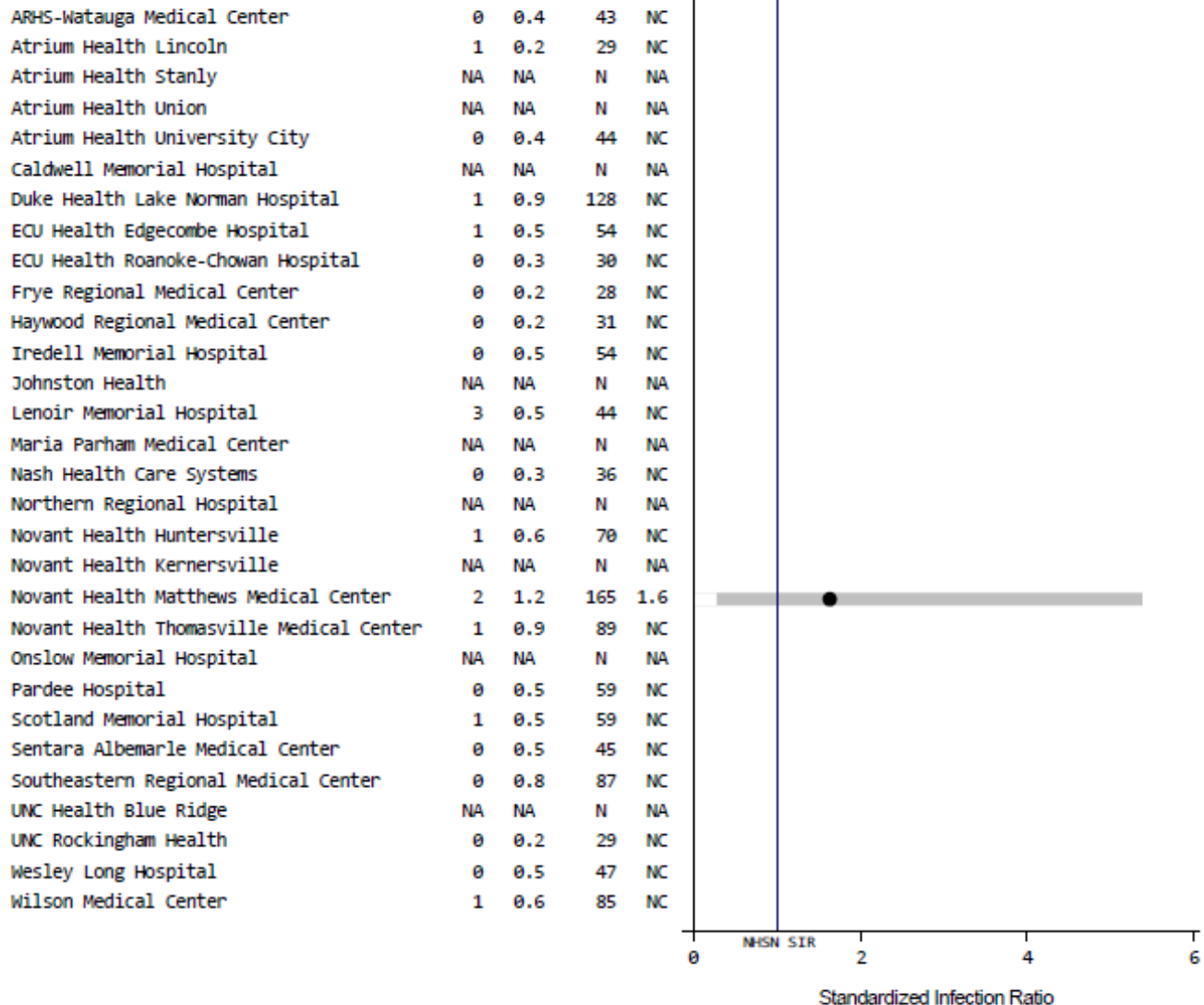
*Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Abdominal Hysterectomies
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL

OBS PRED CLdays SIR

**SIR AND 95% CONFIDENCE INTERVAL
 COMPARED TO 2022 NATIONAL BASELINE**



Fewer infections (BETTER) than national baseline*
 About the SAME number of infections as predicted
 More infections (WORSE) than national baseline*
 No conclusion can be made

Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

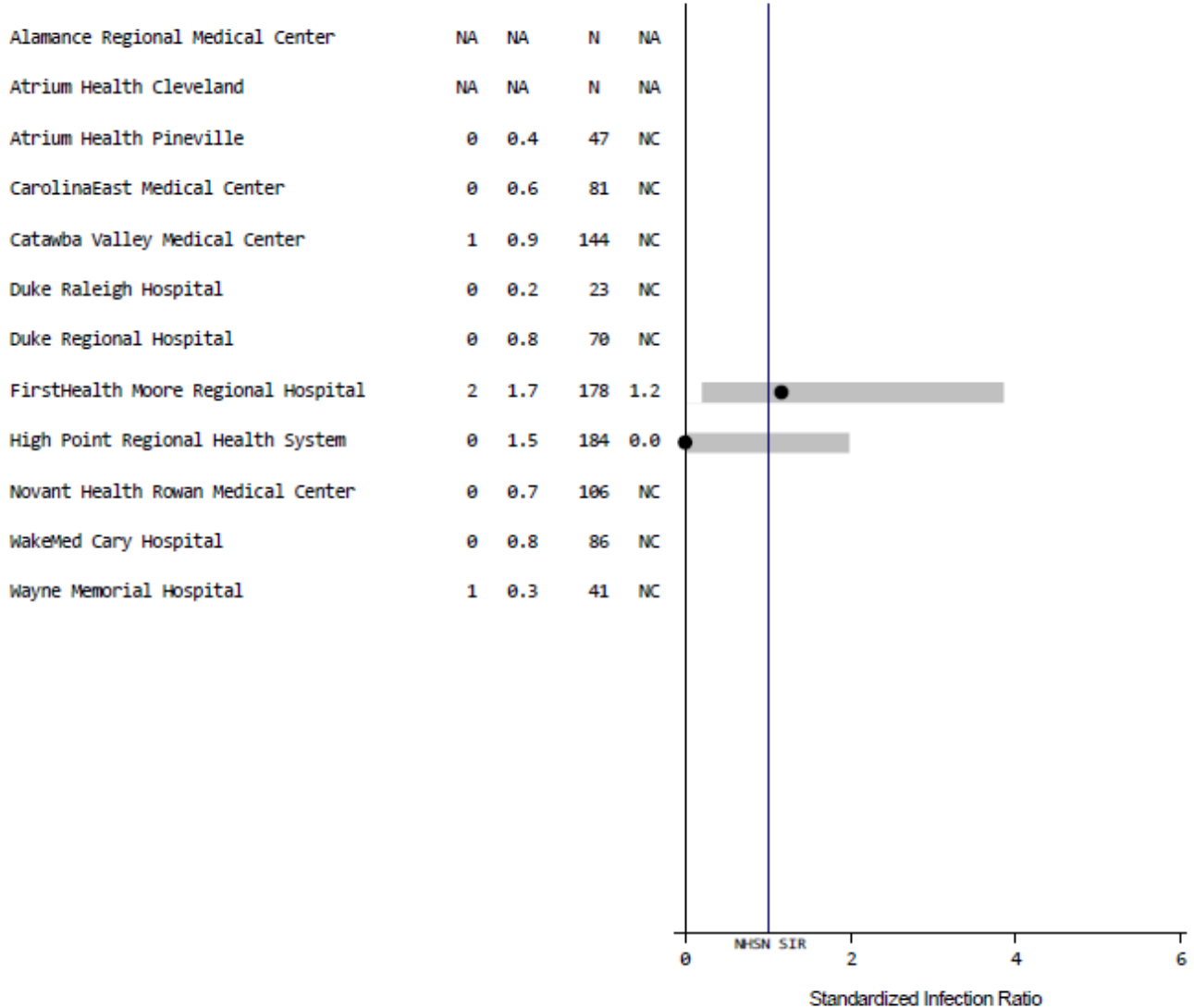
*Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Abdominal Hysterectomies
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

HOSPITAL

OBS PRED CLdays SIR

**SIR AND 95% CONFIDENCE INTERVAL
 COMPARED TO 2022 NATIONAL BASELINE**



- Fewer infections (BETTER) than national baseline*
- About the SAME number of infections as predicted
- More infections (WORSE) than national baseline*
- No conclusion can be made

Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

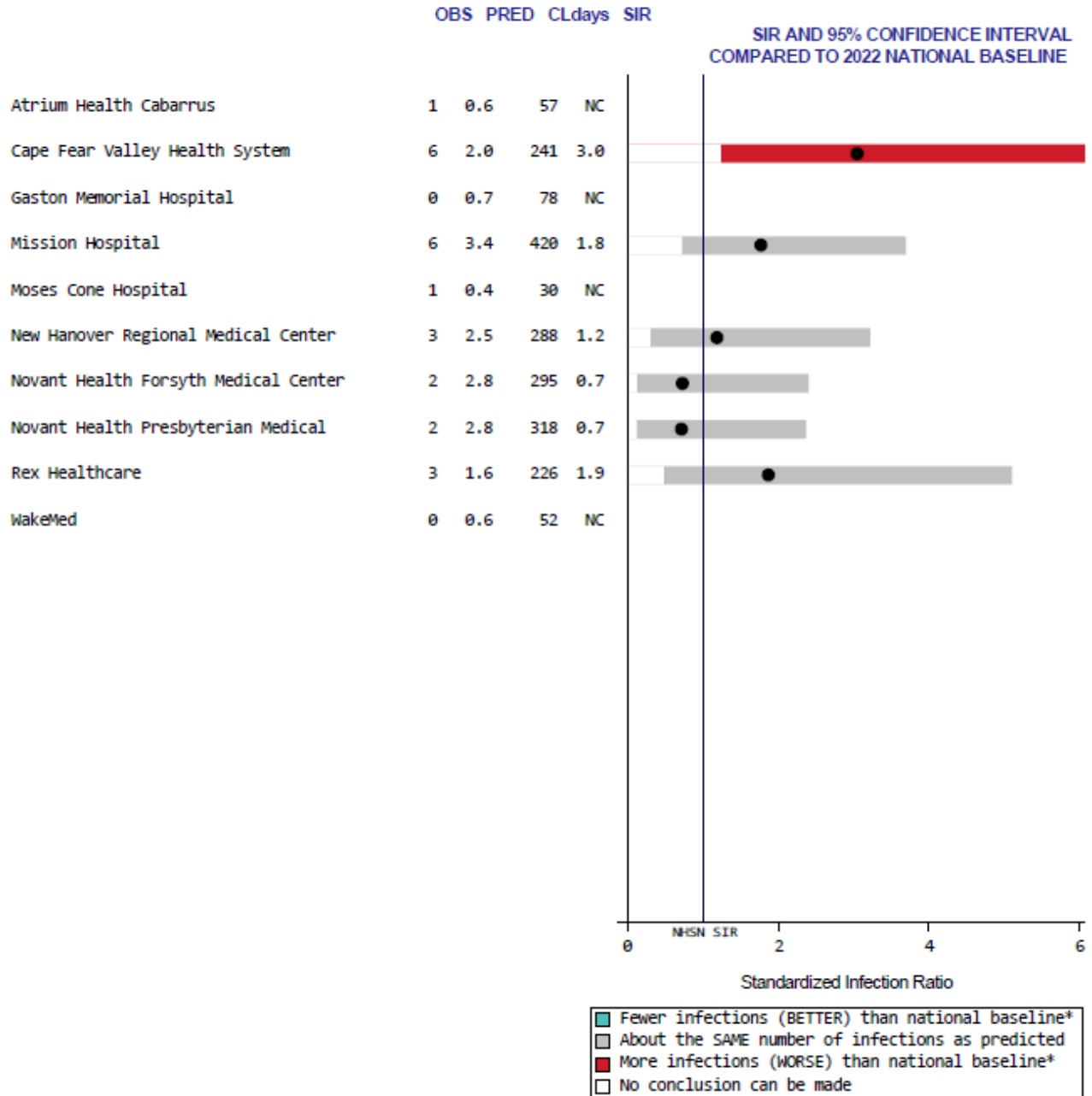
N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Abdominal Hysterectomies
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

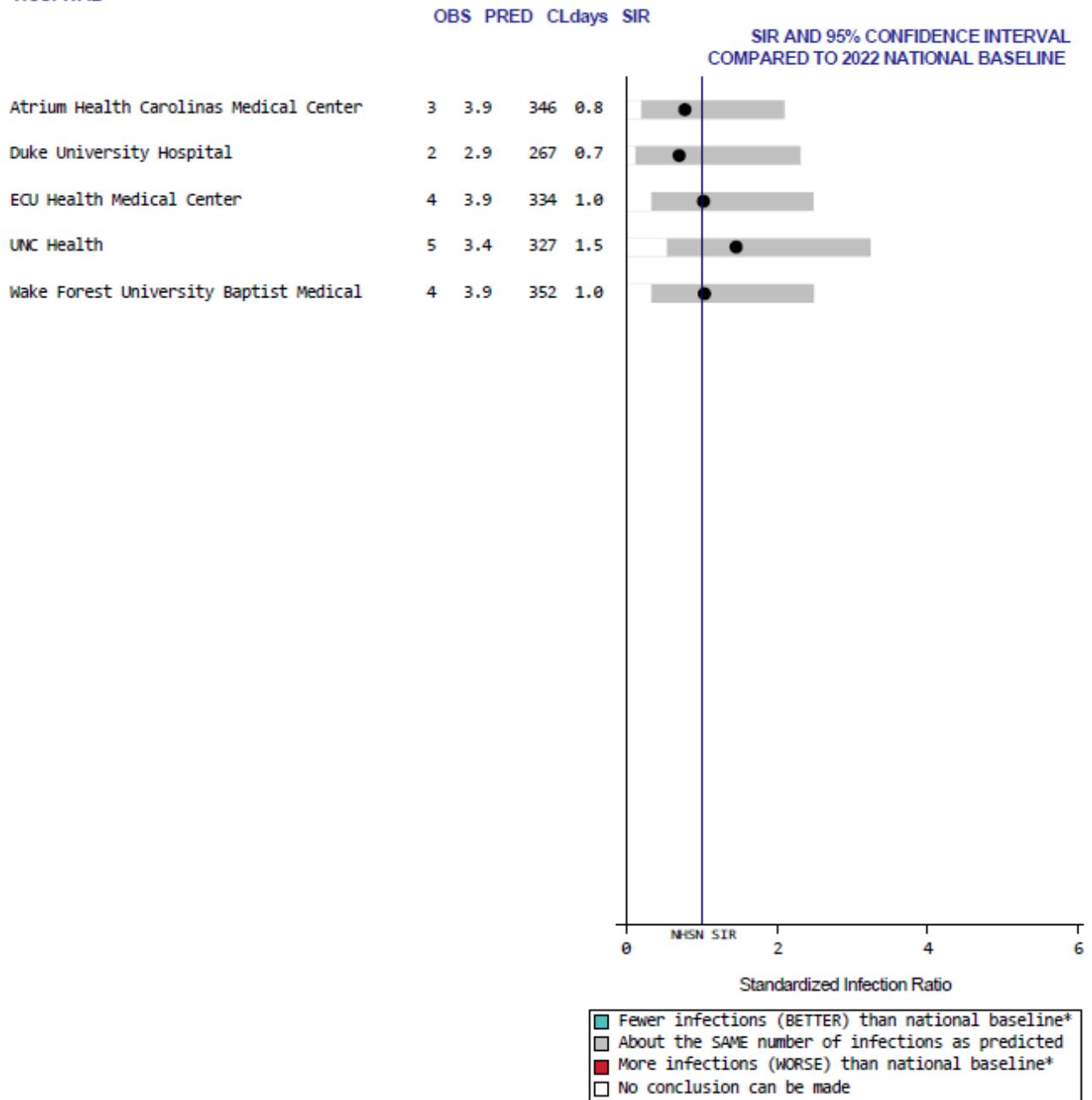
HOSPITAL



Data reported as of May 19, 2024.
 OBS = # infections observed
 PRED = # infections statistically predicted by national baseline
 OPAT = # Operative Procedures after 3 days
 SIR = Standardized infection ratio (OBS/PRED # of infections)
 NA = Data not shown for hospitals with <50 operative procedures after 3 days
 N = <50 operative procedures after 3 days reported
 NC = SIR not calculated for hospitals with <1 predicted infection
 *Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Abdominal Hysterectomies
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

2. Colon Surgeries

North Carolina 2024 SSI Following Colon Surgery Highlights

- Among inpatient colon surgeries performed on adults ≥ 18 years, North Carolina hospitals reported 317 infections, which was not significantly different than the 287.98 infections predicted.
- The most identified organisms isolated from colon surgery SSI patients was *Escherichia coli*.

Table 5. NC Surgical Site Infections following colon surgeries, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	317	287.98	= SAME: about the same number of infections as predicted (same as the national experience)

Figure 22.

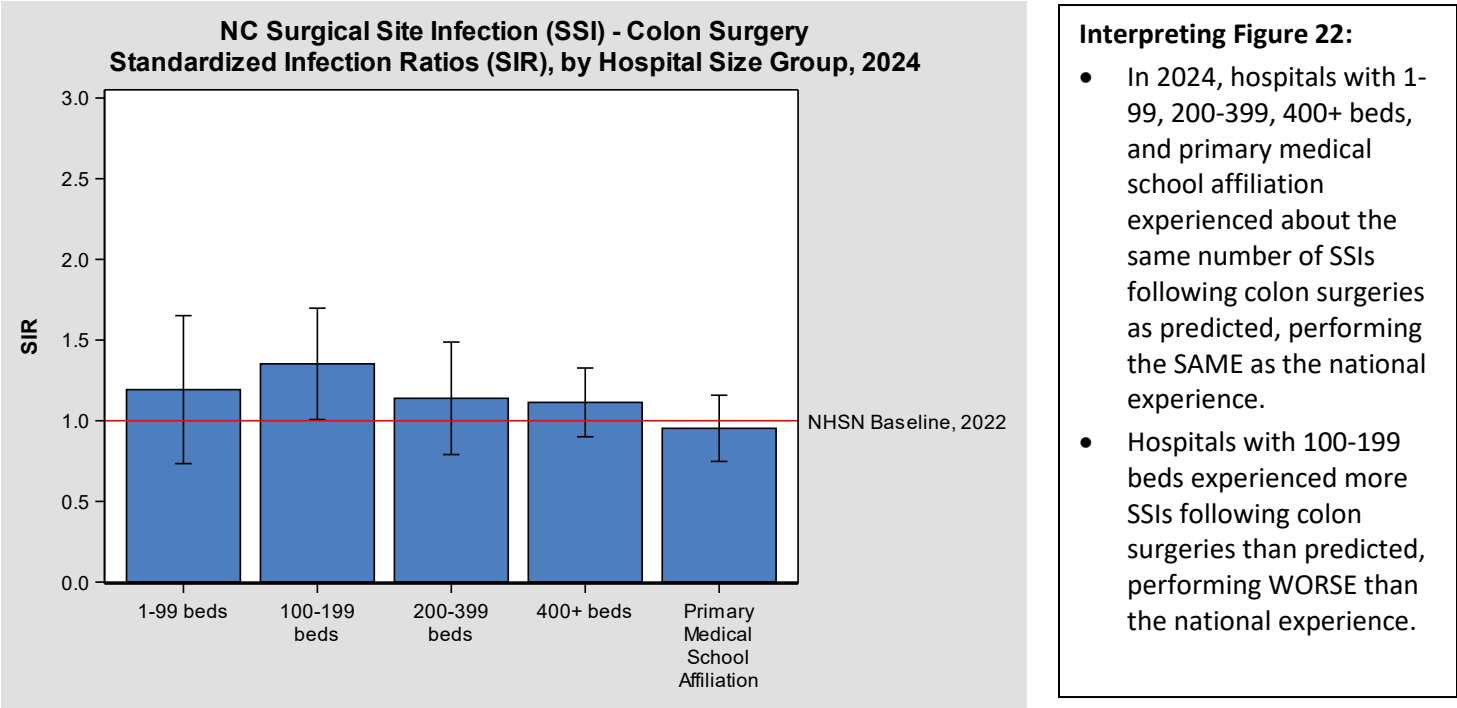
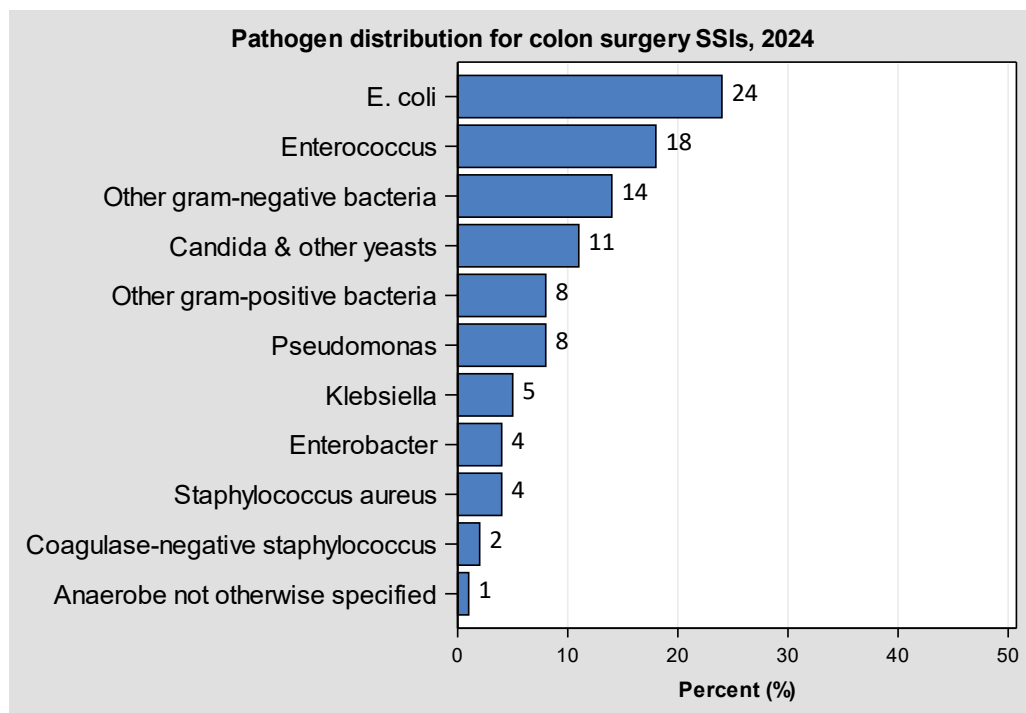


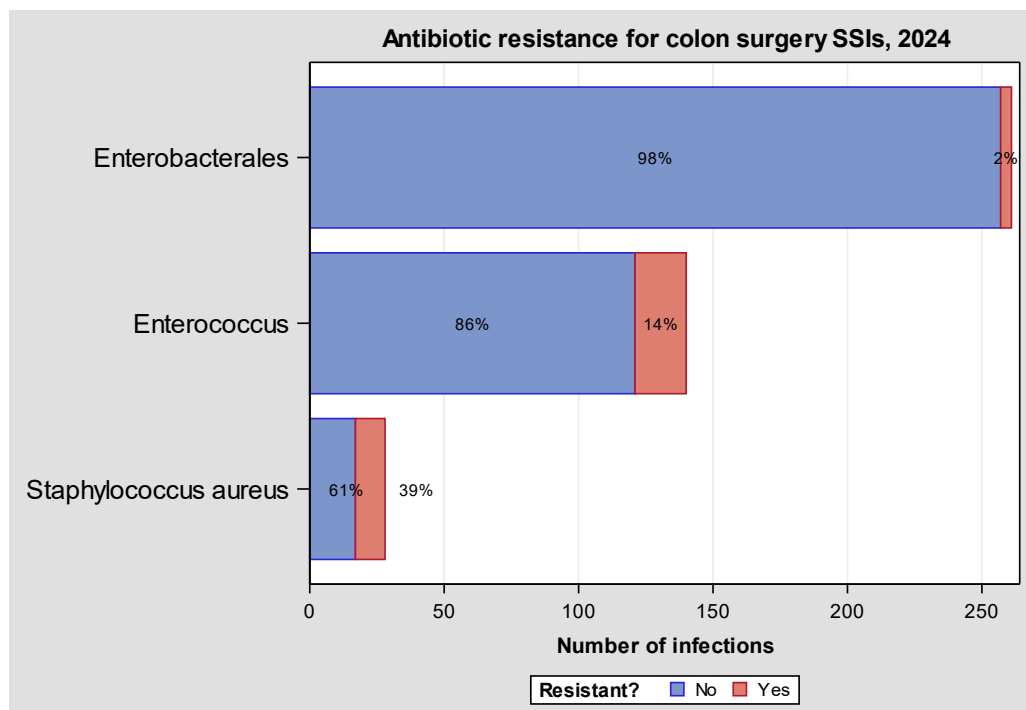
Figure 23.



Interpreting Figure 23:

- In 2024, the most commonly reported pathogens isolated from patients with surgical site infections following colon surgeries were *Escherichia coli* (24%) followed by *Enterococcus* spp. (18%) and “other gram-negative bacteria” (14%).

Figure 24.



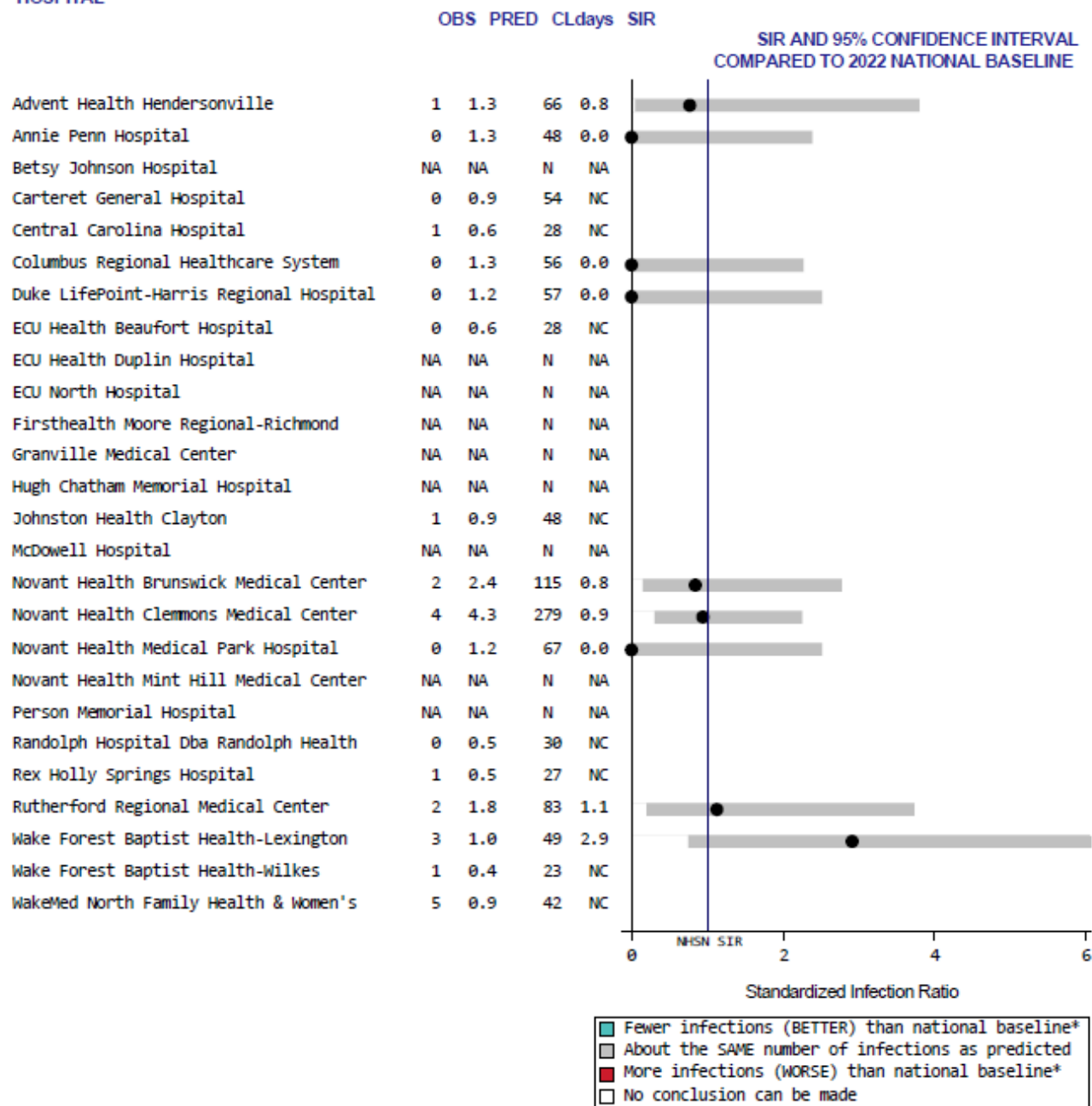
Interpreting Figure 24:

- In 2024, 39% of *Staphylococcus aureus* identified among SSIs following colon surgeries were resistant to methicillin.
- 14% of *Enterococcus* spp. identified among SSIs following colon surgeries were resistant to vancomycin.
- 2% of the Enterobacterales identified among SSIs following colon surgeries were resistant to carbapenems.

The following SIR plots summarize SSI following colon surgery infection data for North Carolina hospitals by hospital groups (Appendix D)

Surgical Site Infections (SSI) - Colon Surgeries
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with less than 100 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

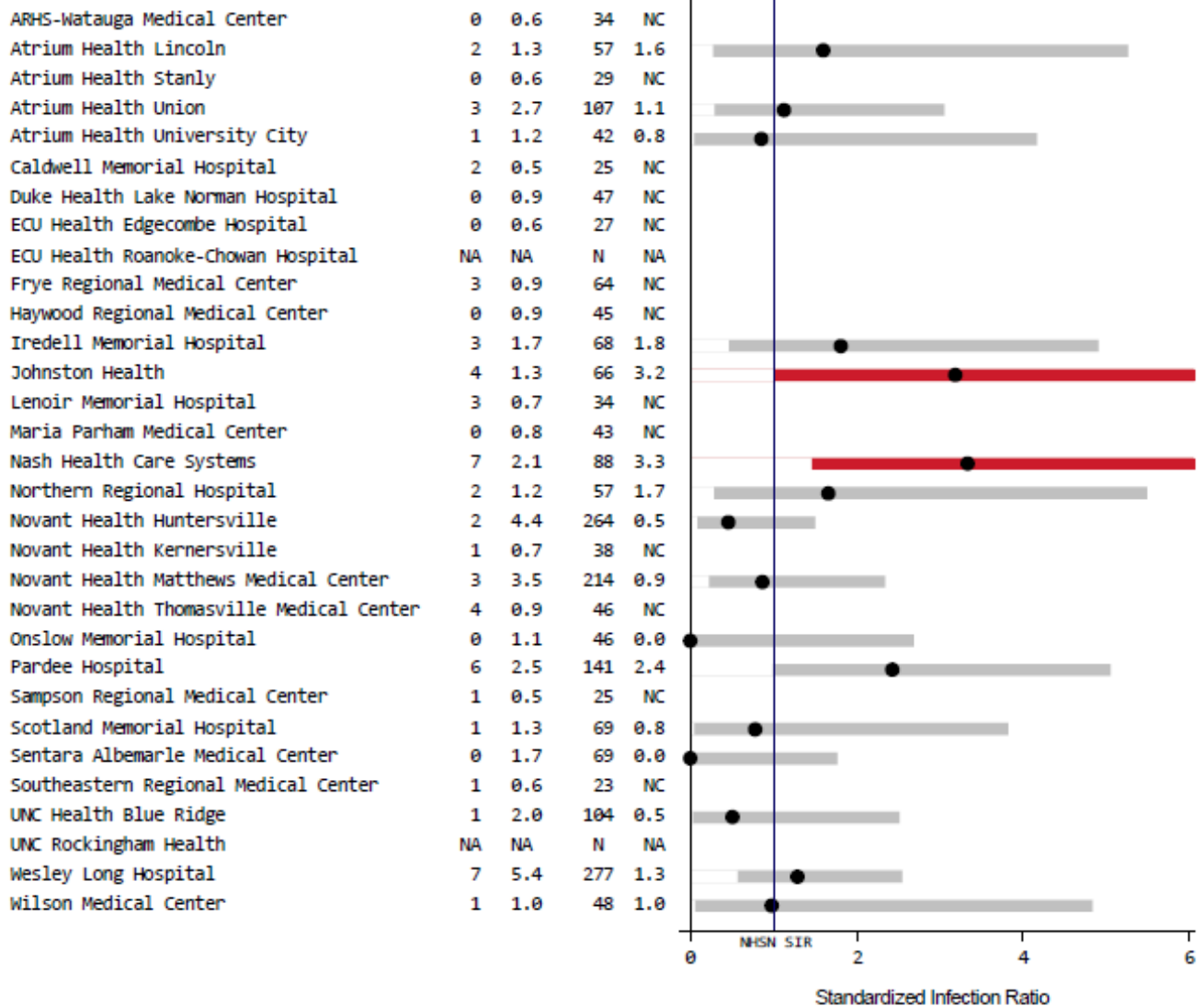
*Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Colon Surgeries
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL

OBS PRED CLdays SIR

SIR AND 95% CONFIDENCE INTERVAL
 COMPARED TO 2022 NATIONAL BASELINE



- Fewer infections (BETTER) than national baseline*
- About the SAME number of infections as predicted
- More infections (WORSE) than national baseline*
- No conclusion can be made

Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

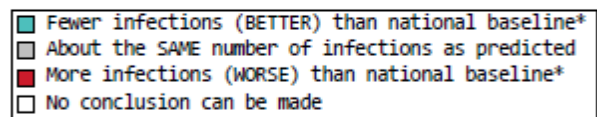
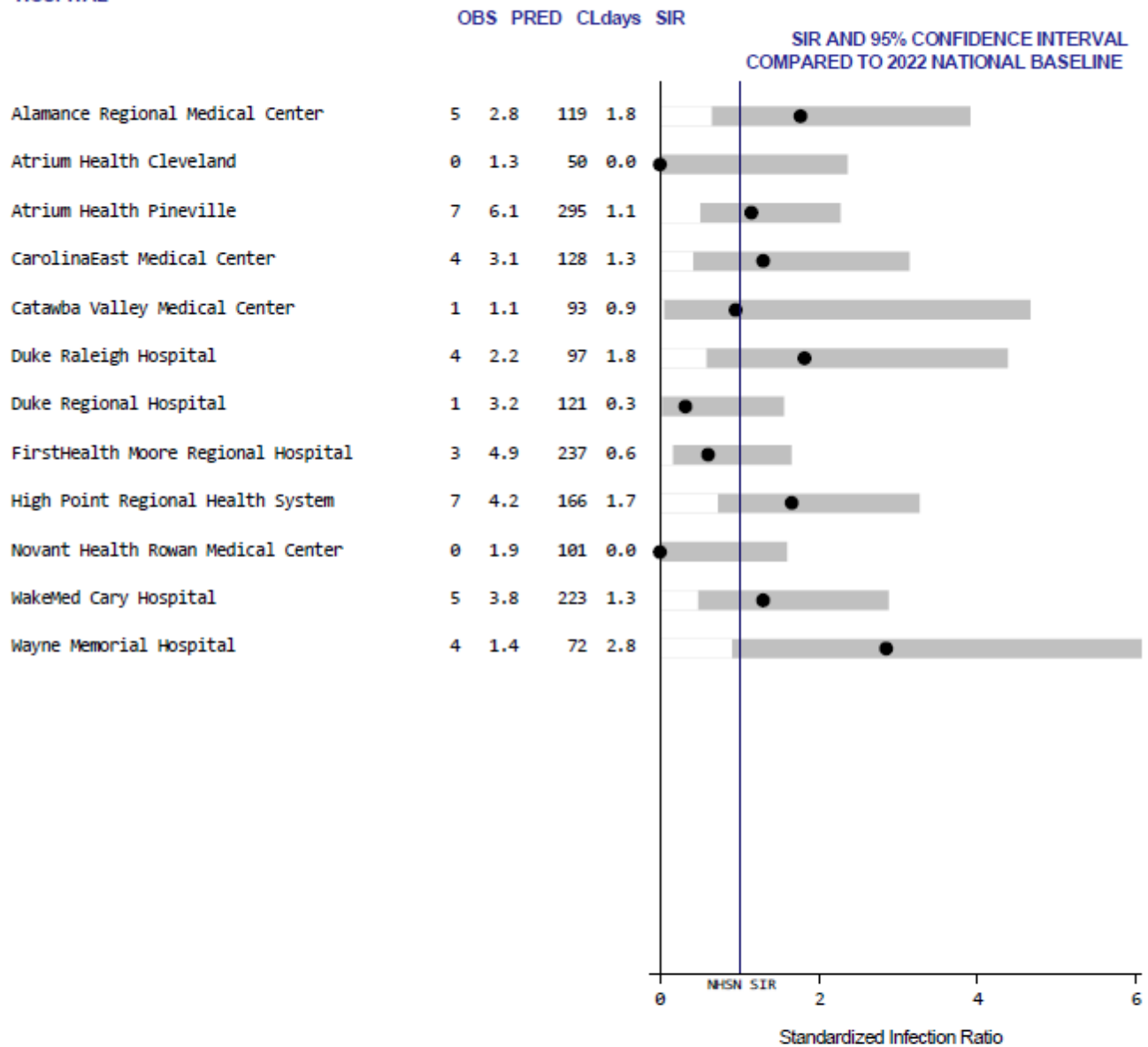
N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Colon Surgeries
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

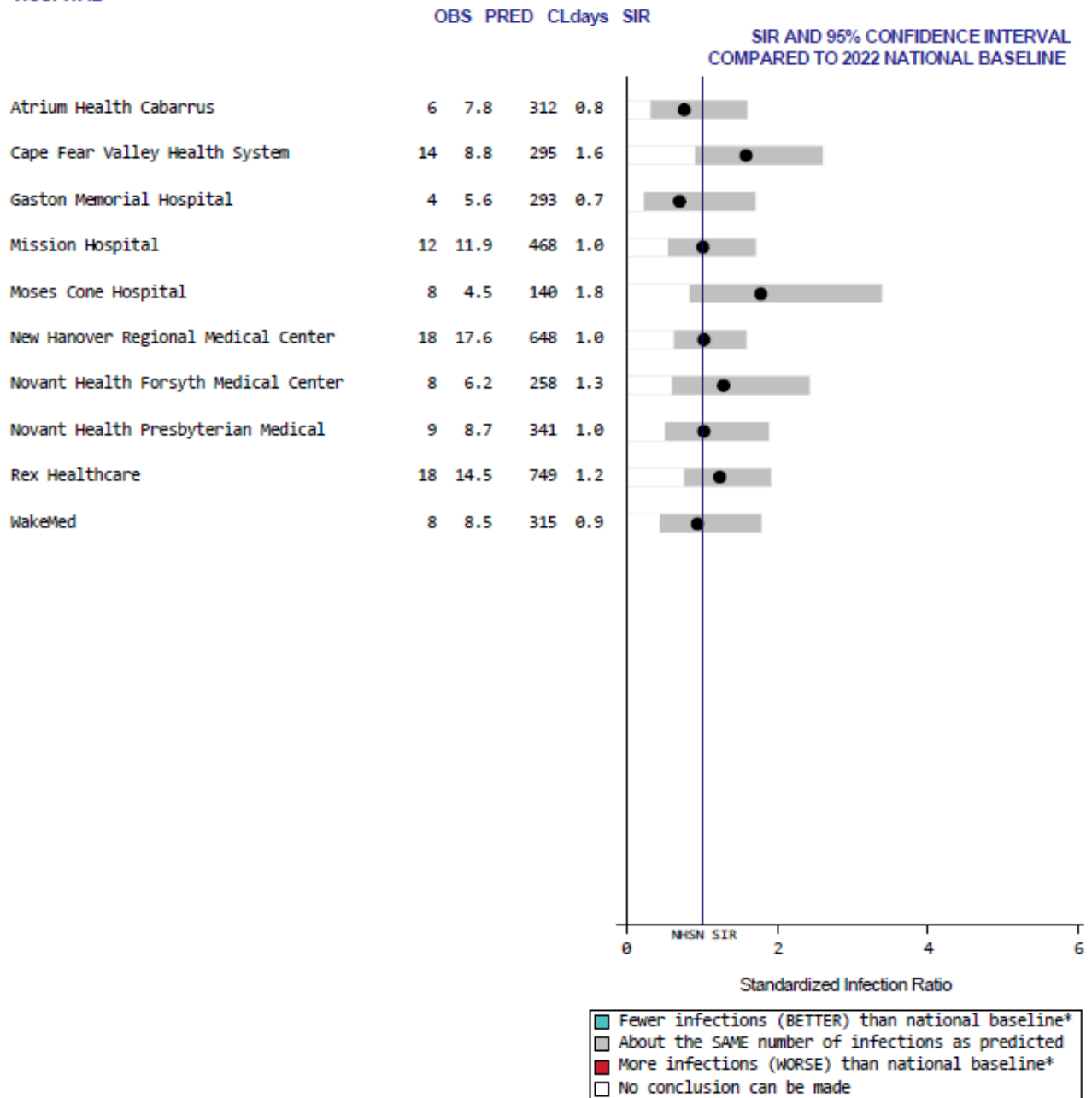
HOSPITAL



Data reported as of May 19, 2024.
 OBS = # infections observed
 PRED = # infections statistically predicted by national baseline
 OPAT = # Operative Procedures after 3 days
 SIR = Standardized infection ratio (OBS/PRED # of infections)
 NA = Data not shown for hospitals with <50 operative procedures after 3 days
 N = <50 operative procedures after 3 days reported
 NC = SIR not calculated for hospitals with <1 predicted infection
 *Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Colon Surgeries
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

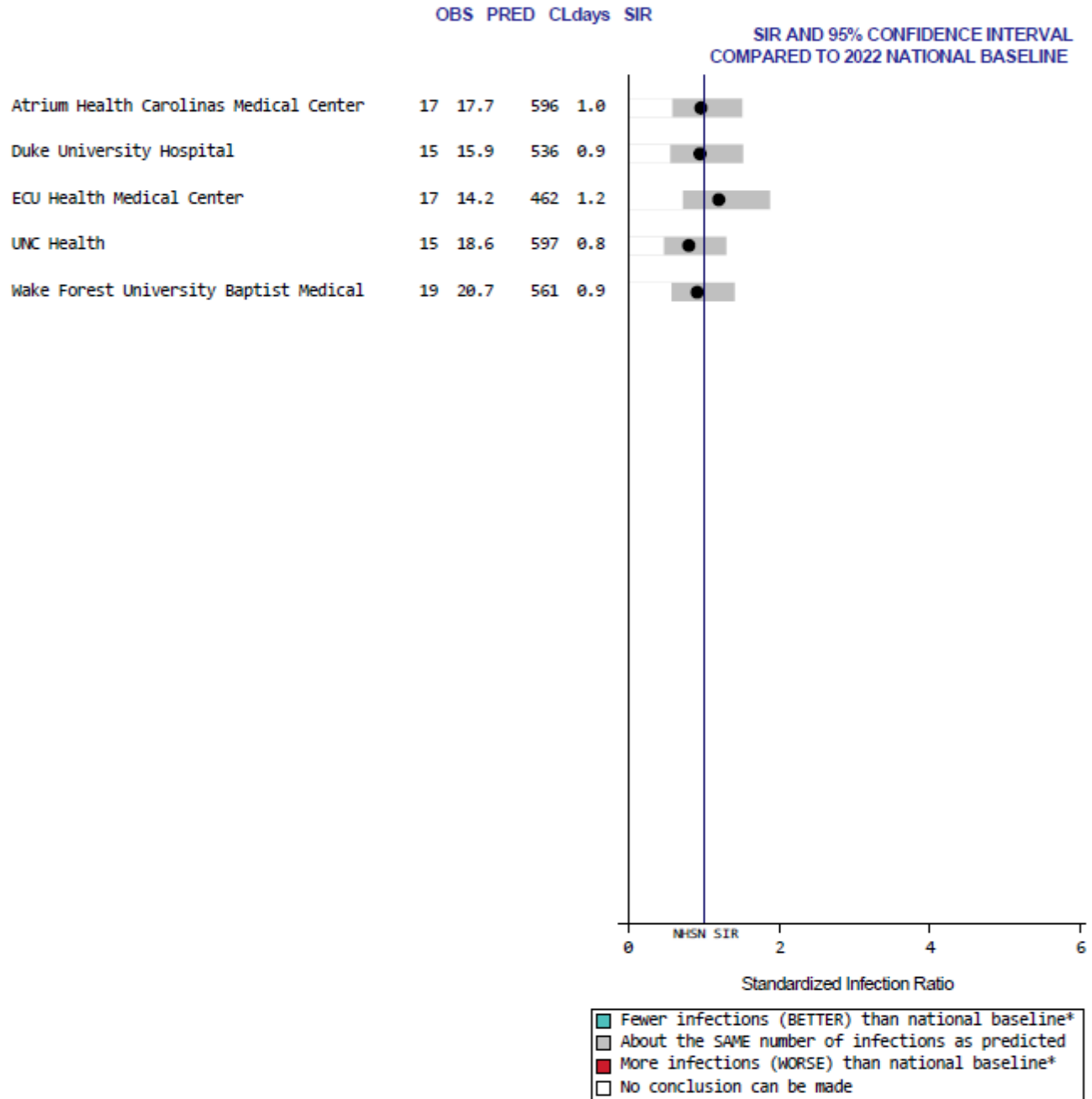
HOSPITAL



Data reported as of May 19, 2024.
 OBS = # infections observed
 PRED = # infections statistically predicted by national baseline
 OPAT = # Operative Procedures after 3 days
 SIR = Standardized infection ratio (OBS/PRED # of infections)
 NA = Data not shown for hospitals with <50 operative procedures after 3 days
 N = <50 operative procedures after 3 days reported
 NC = SIR not calculated for hospitals with <1 predicted infection
 *Significantly different than 2022 national baseline

Surgical Site Infections (SSI) - Colon Surgeries
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

OPAT = # Operative Procedures after 3 days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 operative procedures after 3 days

N = <50 operative procedures after 3 days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

D. Laboratory-Identified Events

1. Methicillin-Resistant *Staphylococcus aureus* Laboratory-Identified Events (MRSA LabID)

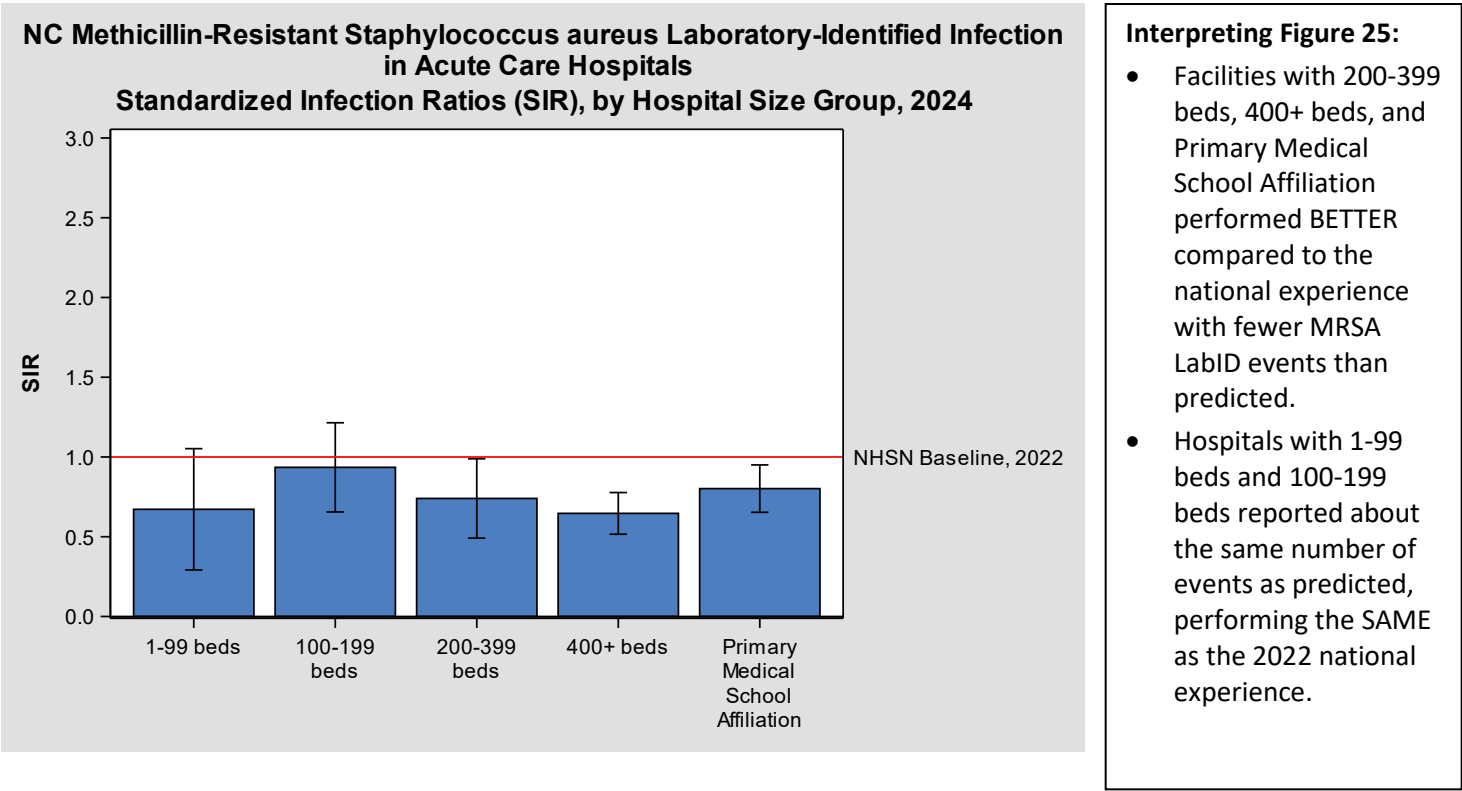
North Carolina 2024 MRSA LabID Highlights

- In 2024 North Carolina hospitals reported 298 MRSA LabID events, significantly lower than the 396.42 MRSA LabID events predicted by the national experience.

Table 6. NC Methicillin-Resistant *Staphylococcus aureus* Laboratory-Identified Events, 2024

Year	# Observed Events	# Predicted Events	How Does North Carolina compare to the National Experience?
2024	298	396.42	= BETTER: Fewer infections than were predicted (better than the national experience)

Figure 25.



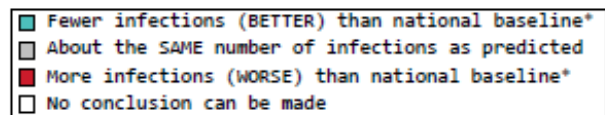
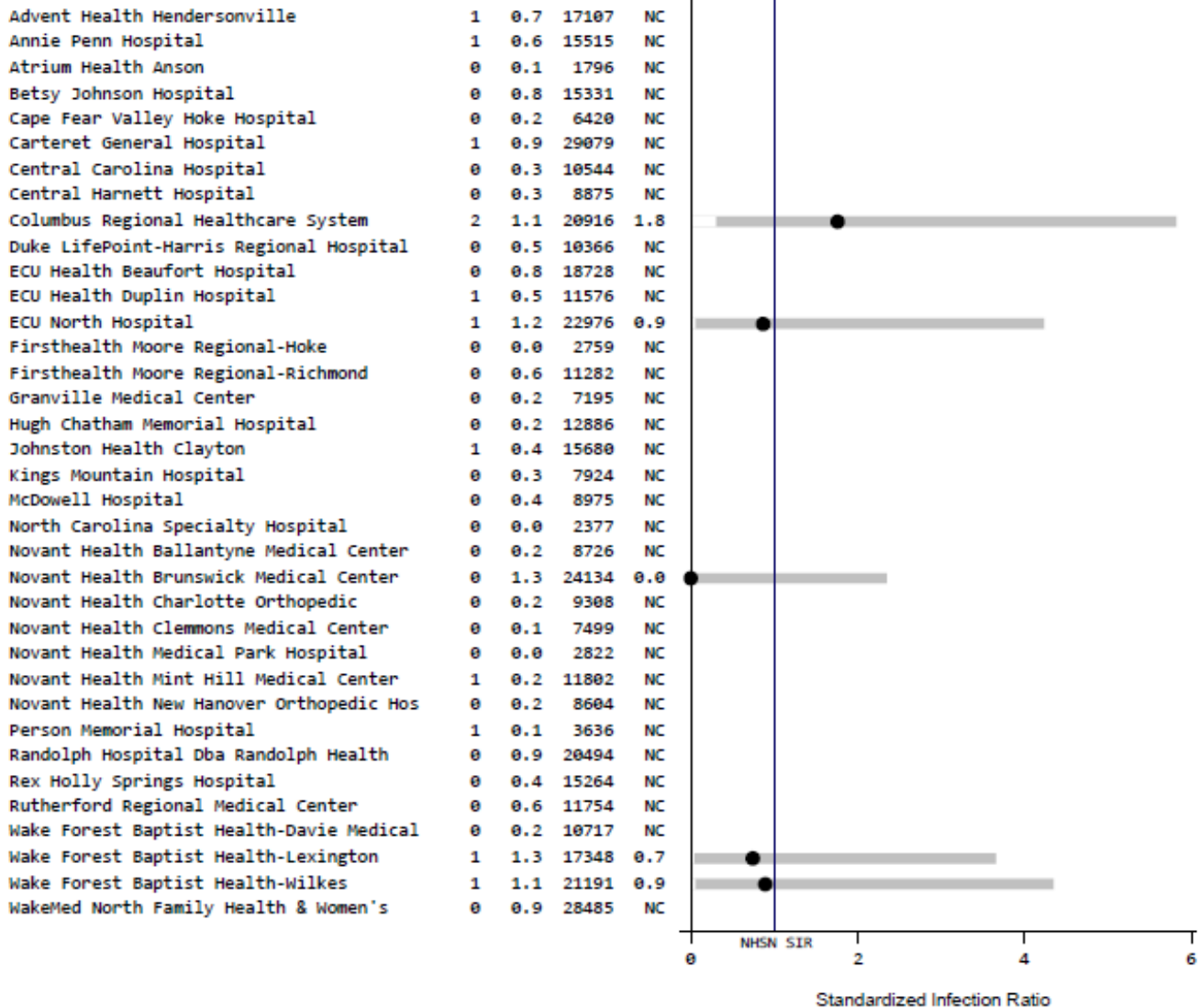
The following SIR plots summarize MRSA LabID data for North Carolina hospitals by hospital groups (Appendix D).

Methicillin-Resistant Staphylococcus aureus (MRSA) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with less than 100 Beds

HOSPITAL

OBS PRED CLdays SIR

**SIR AND 95% CONFIDENCE INTERVAL
 COMPARED TO 2022 NATIONAL BASELINE**



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

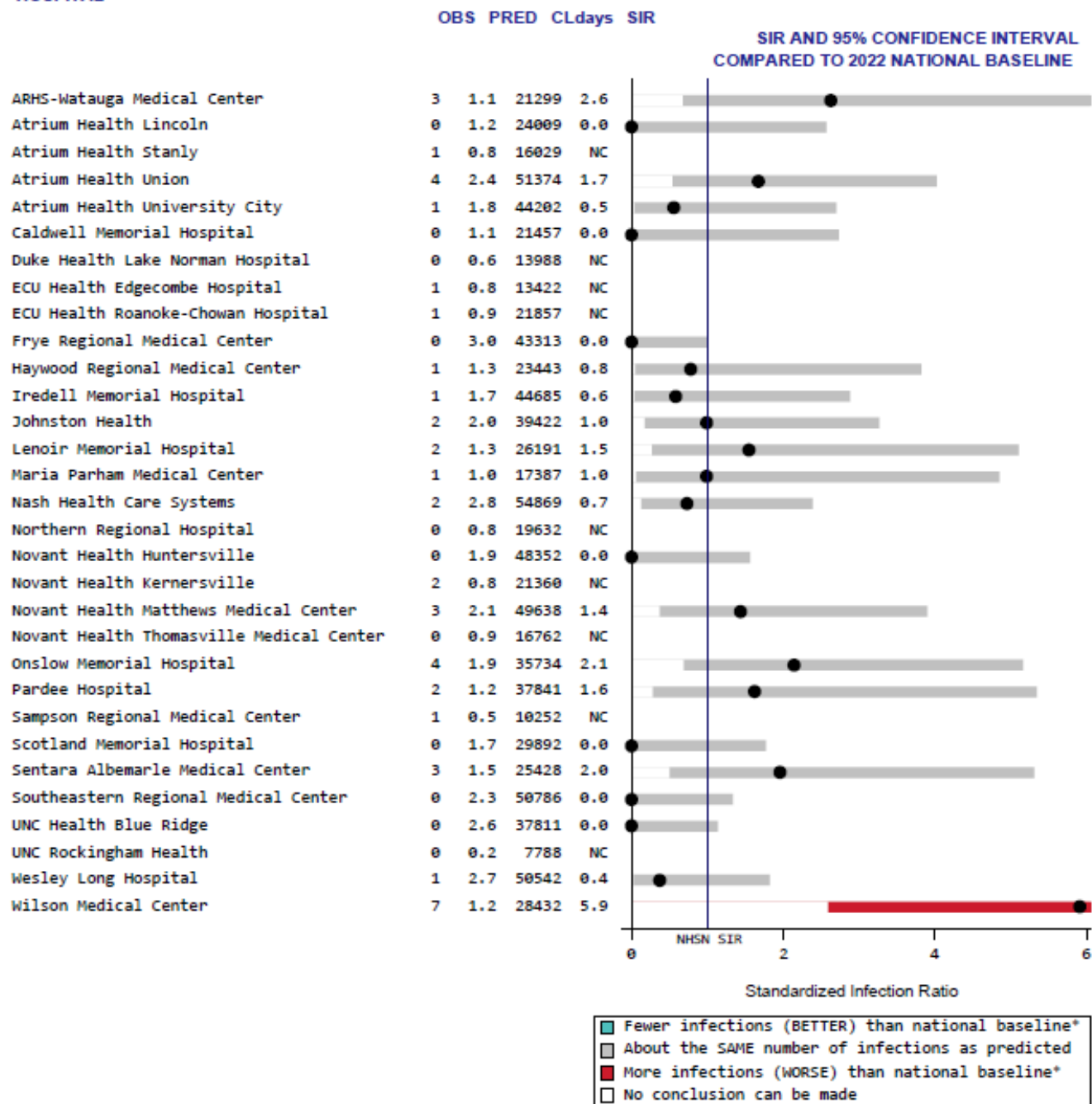
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Methicillin-Resistant Staphylococcus aureus (MRSA) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

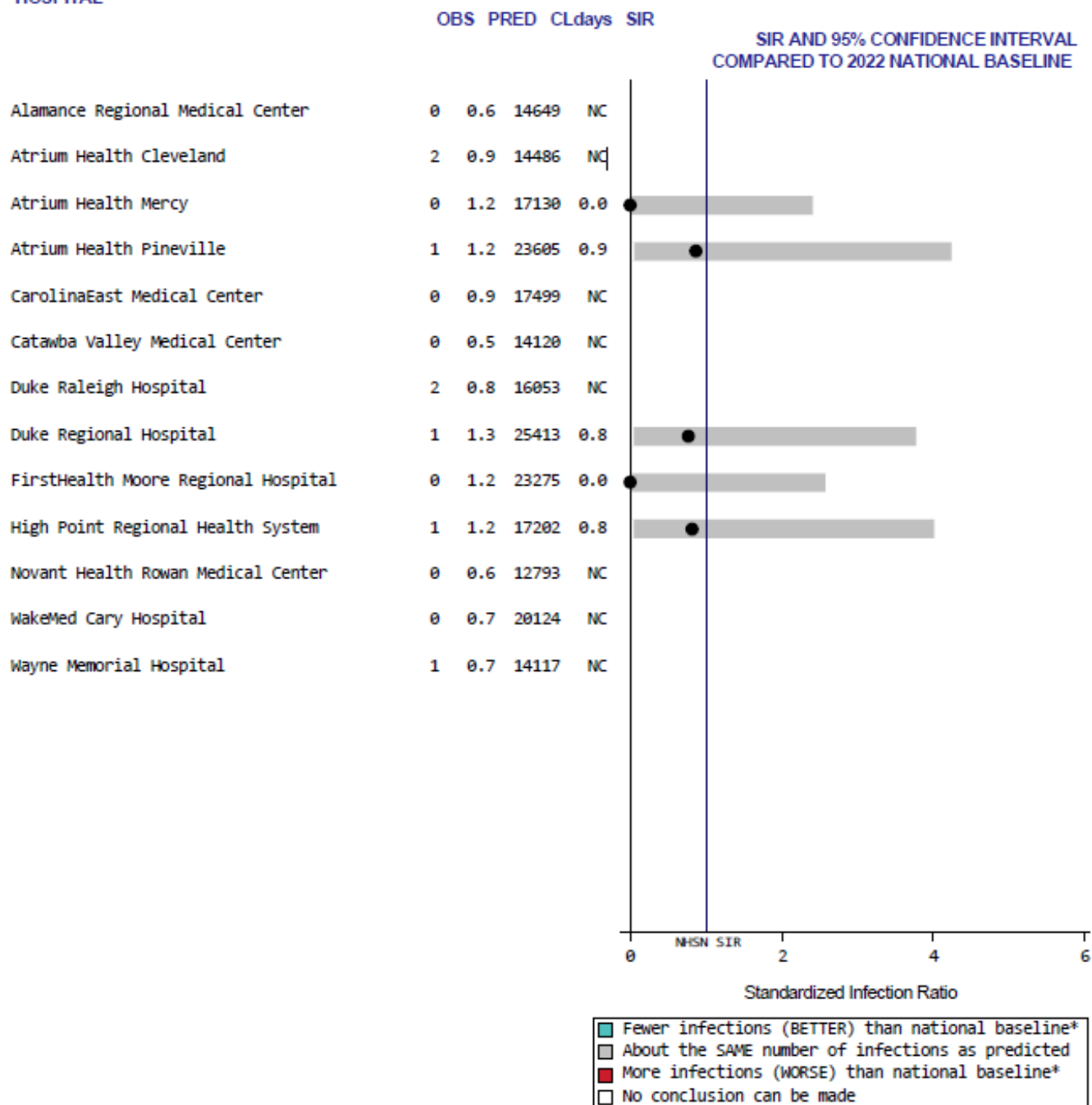
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Methicillin-Resistant Staphylococcus aureus (MRSA) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

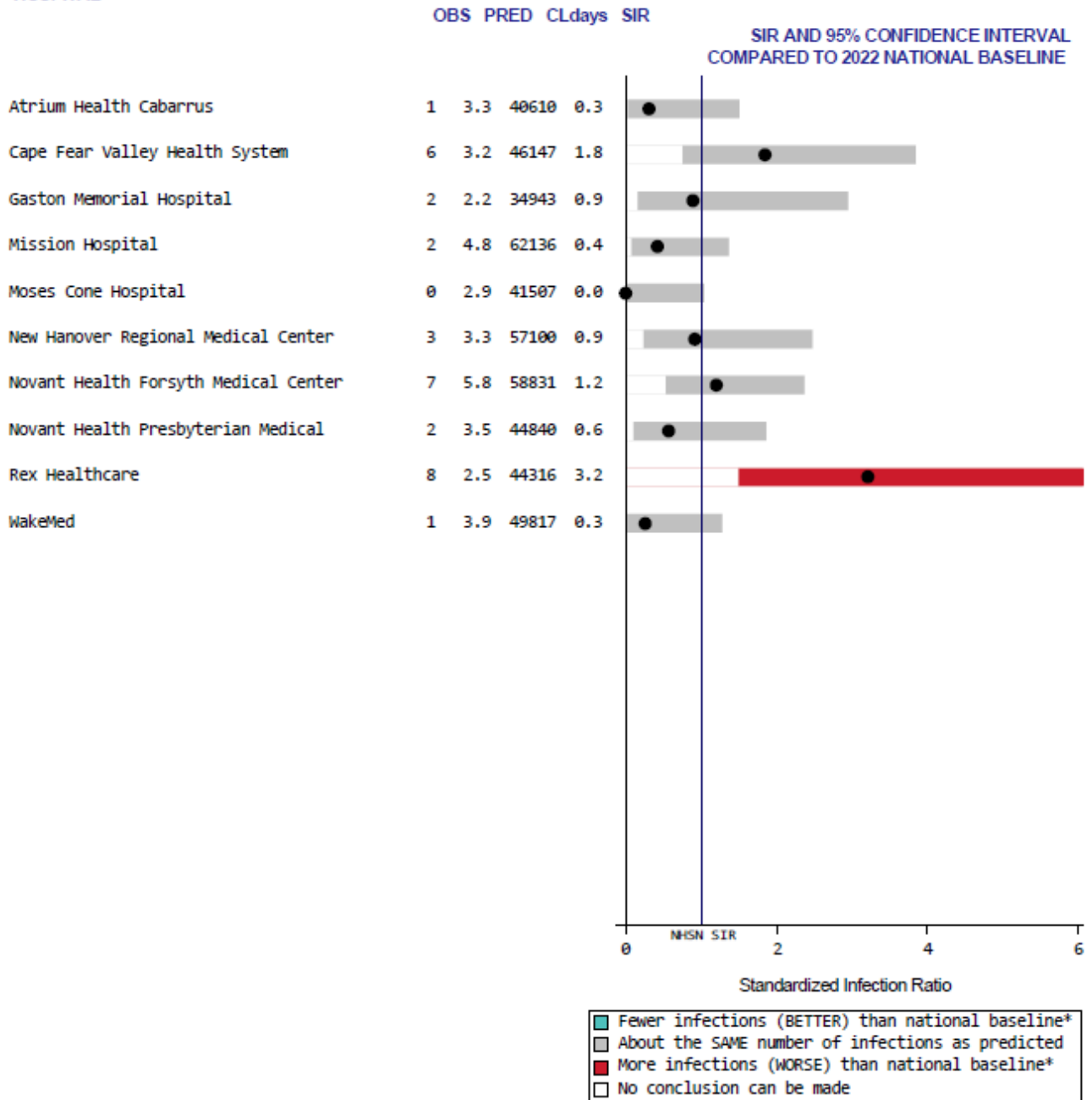
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Methicillin-Resistant Staphylococcus aureus (MRSA) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

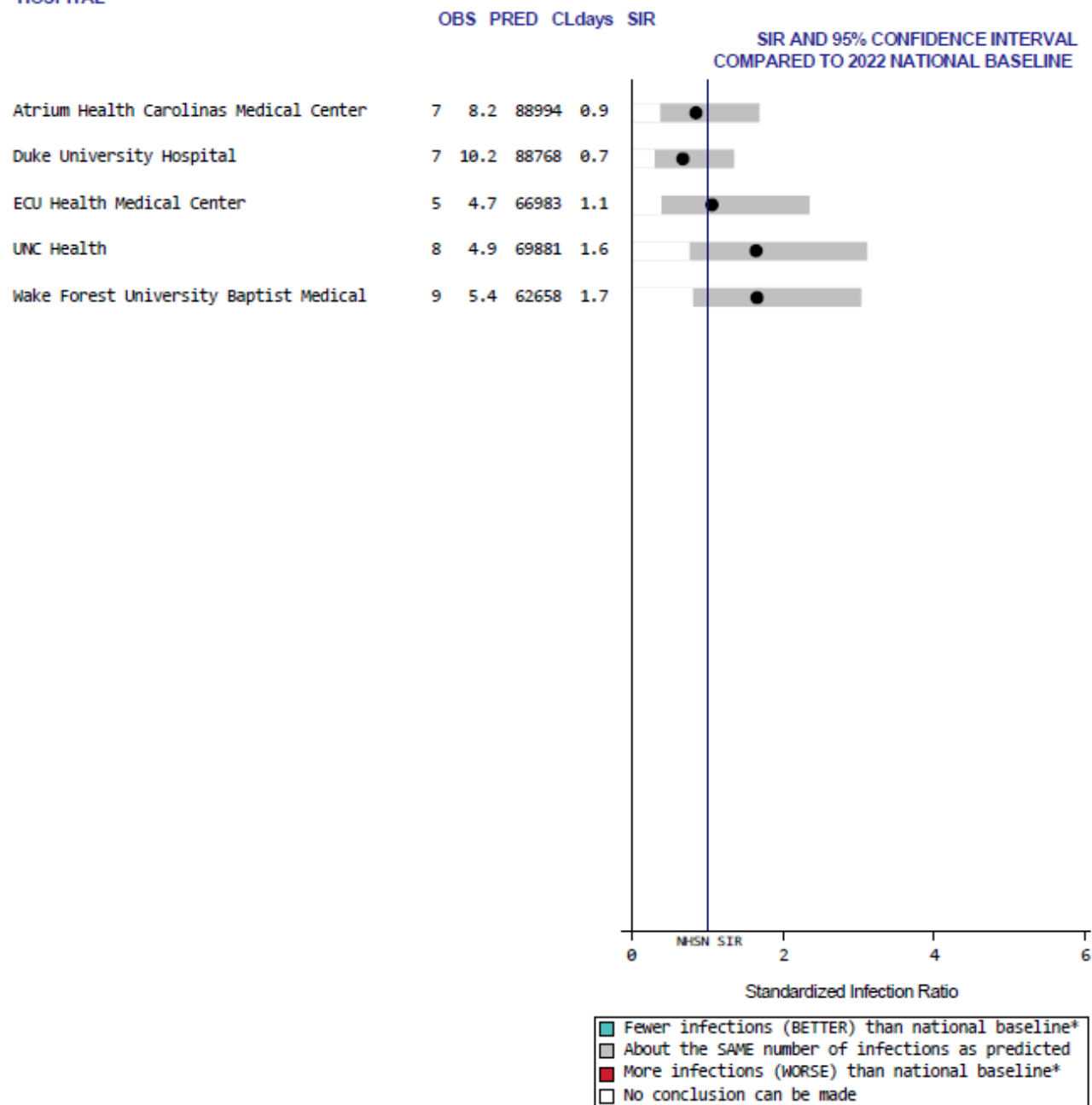
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Methicillin-Resistant Staphylococcus aureus (MRSA) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

3. *Clostridioides difficile* Laboratory-Identified Events (CDI LabID)

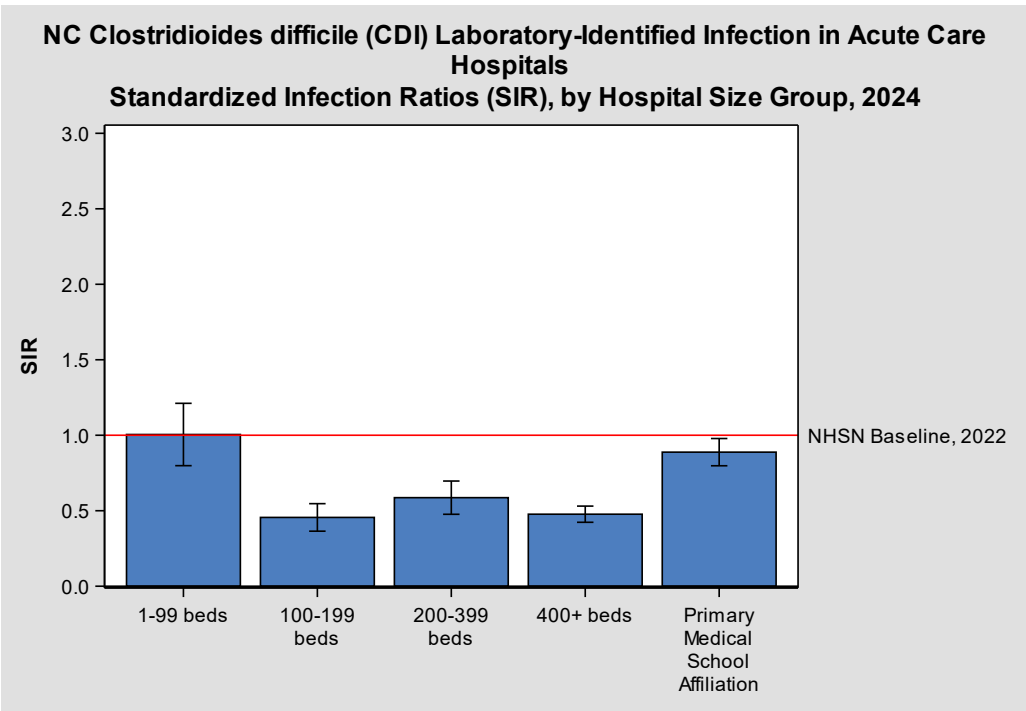
North Carolina 2024 CDI LabID Highlights

- In 2024 North Carolina hospitals reported 976 CDI LabID events, significantly lower than the 1,549.3 CDI LabID events predicted by the national experience.

Table 7. NC *Clostridioides difficile* Laboratory-Identified Events, 2024

Year	# Observed Infections	# Predicted Infections	How Does North Carolina compare to the National Experience?
2024	976	1,549.3	BETTER: Fewer infections than were predicted (better than the national experience)

Figure 26.



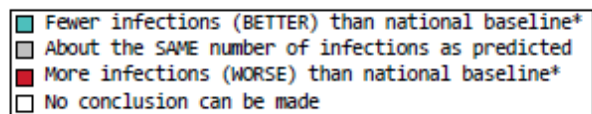
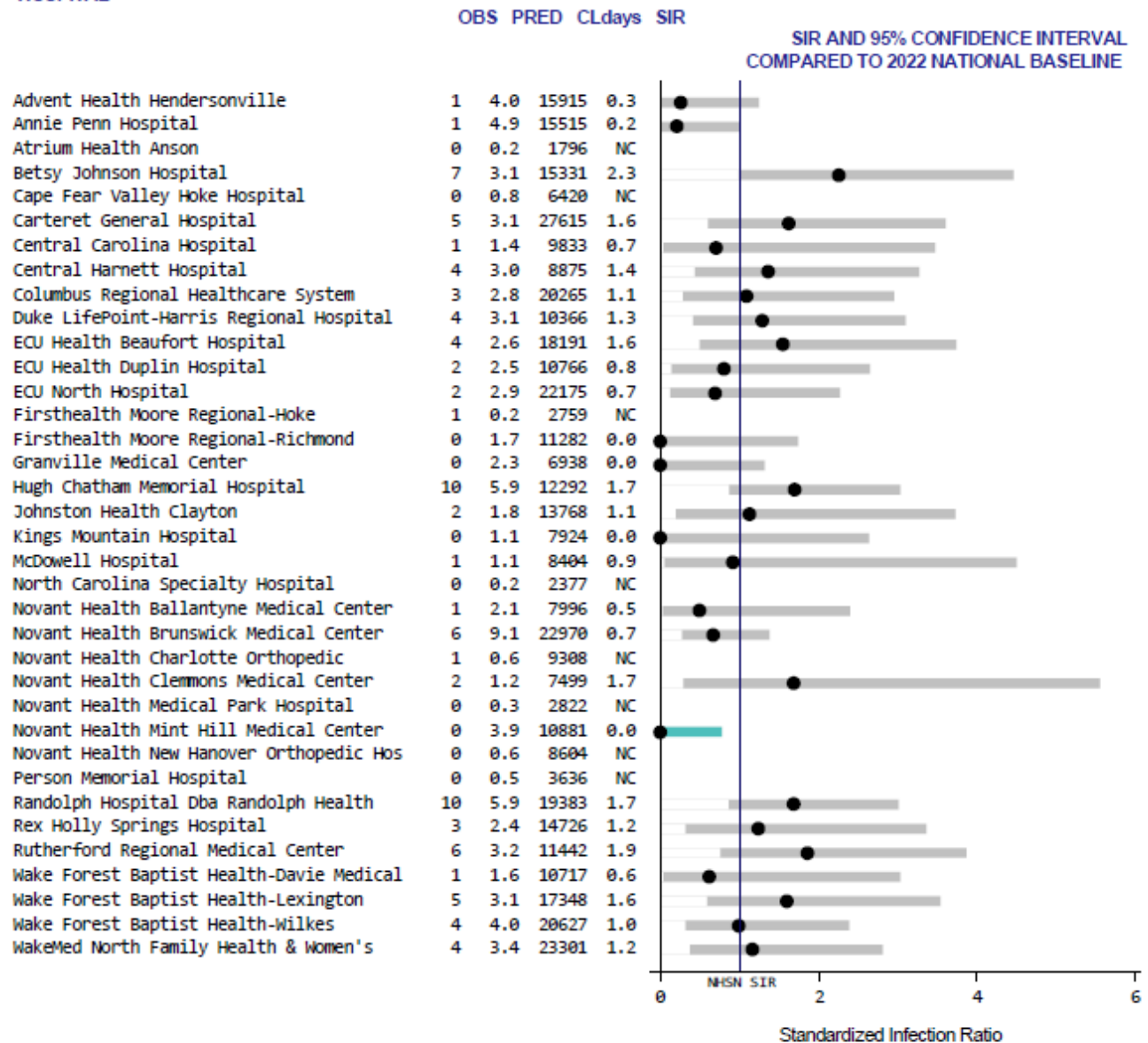
Interpreting Figure 26:

- In 2024, hospitals with 100-199, 200-399, and 400+ beds and primary medical school affiliation experienced fewer CDI LabID events than predicted, performing BETTER than the national experience.
- Hospitals with 1-99 beds experienced about the same number of CDI LabID events as predicted, performing the SAME as the national experience.

The following SIR plots summarize CDI LabID data for North Carolina hospitals by hospital groups (Appendix D)

Clostridioides difficile infection (CDI) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with less than 100 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

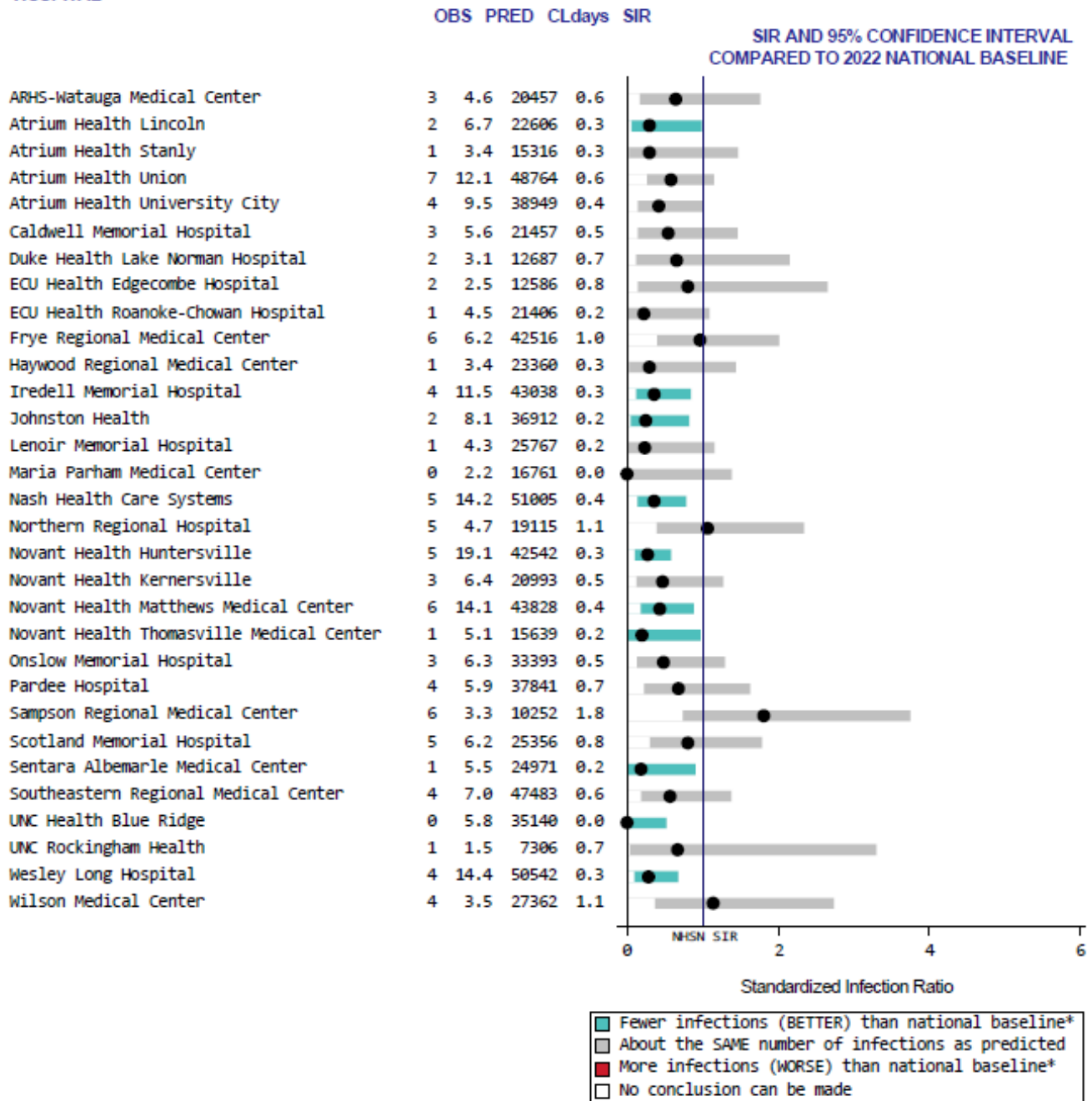
NC = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Clostridioides difficile infection (CDI) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 100 to 199 Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

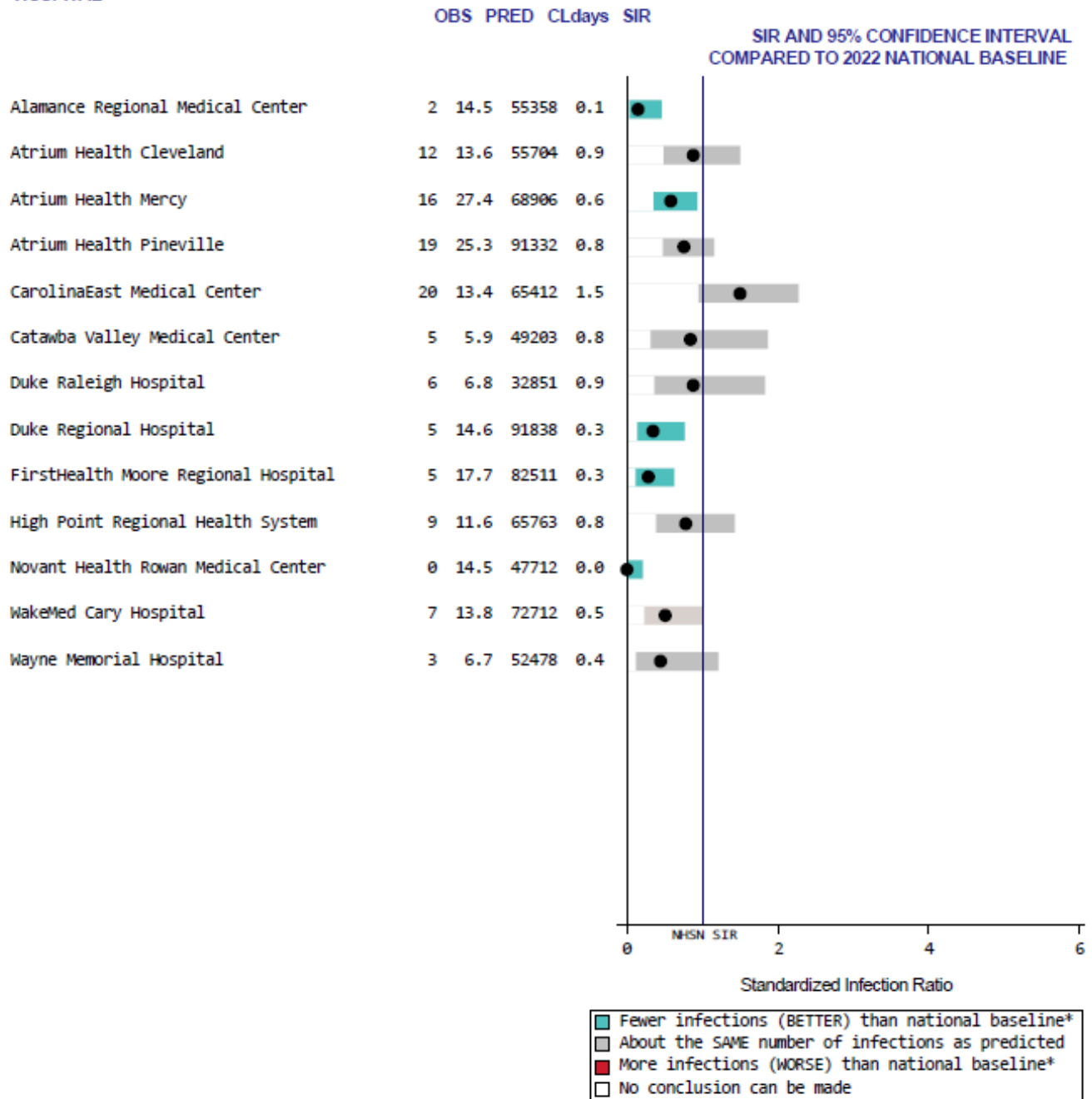
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Clostridioides difficile infection (CDI) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 200 to 399 Beds

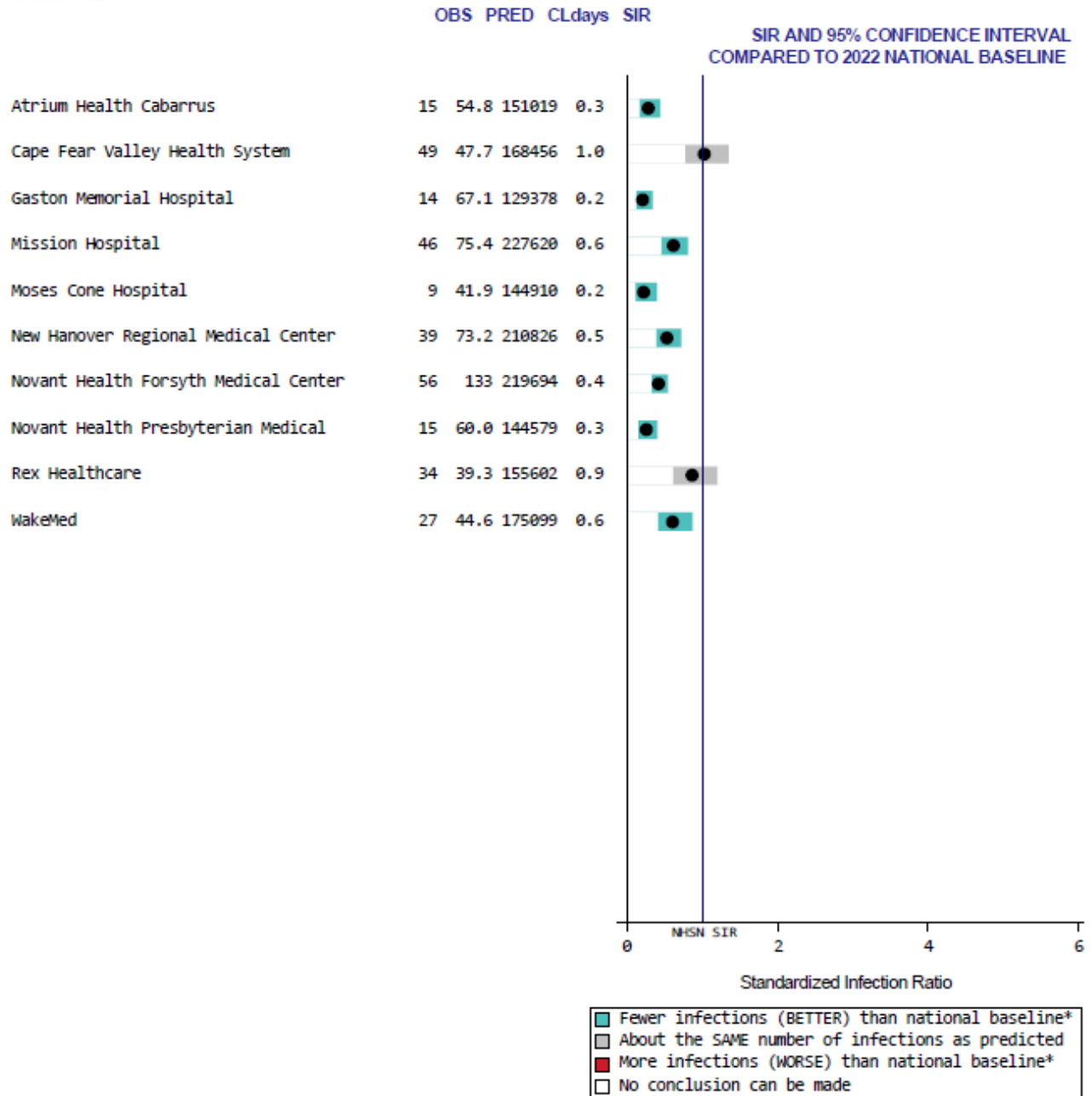
HOSPITAL



Data reported as of May 19, 2024.
 OBS = # infections observed
 PRED = # infections statistically predicted by national baseline
 PD = # Central Line Days
 SIR = Standardized infection ratio (OBS/PRED # of infections)
 NA = Data not shown for hospitals with <50 central line days
 N = <50 central line days reported
 NC = SIR not calculated for hospitals with <1 predicted infection
 *Significantly different than 2022 national baseline

Clostridioides difficile infection (CDI) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with 400 or More Beds

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

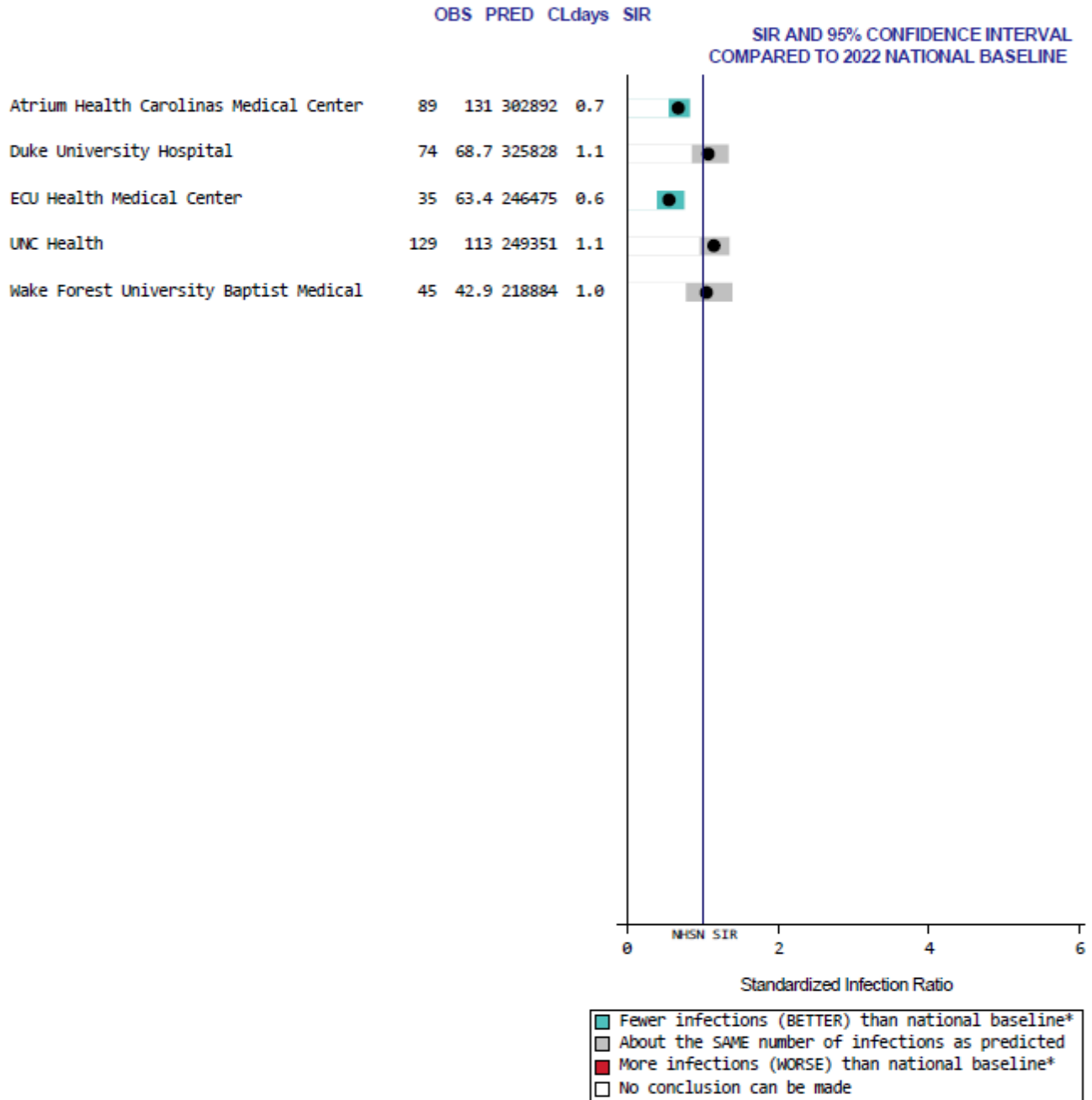
N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

Clostridioides difficile infection (CDI) LabID Events
Standardized Infection Ratios: January 1 – December 31, 2024
Hospital Group: Hospitals with Primary Medical School Affiliation

HOSPITAL



Data reported as of May 19, 2024.

OBS = # infections observed

PRED = # infections statistically predicted by national baseline

PD = # Central Line Days

SIR = Standardized infection ratio (OBS/PRED # of infections)

NA = Data not shown for hospitals with <50 central line days

N = <50 central line days reported

NC = SIR not calculated for hospitals with <1 predicted infection

*Significantly different than 2022 national baseline

FAST FACTS: What You Need to Know About Health Care-Associated Infections

Device-Associated HAIs

Sometimes, patients have medical devices inserted into their bodies to provide necessary medical care. These devices are called “invasive devices” and patients with these devices have a higher chance of getting an infection. Here is what you need to know about invasive devices and what kinds of infections they can be associated with:

- A **central line** is a tube placed in a large vein to allow access to the bloodstream and provide the patient with important medicine. A **central line-associated bloodstream infection (CLABSI)** can occur when bacteria or other germs travel along a central line and enter the blood. When not put in correctly or kept clean, central lines can become a pathway for germs to enter the body and cause serious bloodstream infections.
- A **urinary catheter** is a tube placed in the bladder to drain urine. A **catheter-associated urinary tract infection (CAUTI)** can occur when bacteria or other germs travel along a urinary catheter, resulting in an infection in the bladder or kidneys.

Other HAIs

- A **surgical site infection (SSI)** occurs after surgery in the part of the body where the surgery took place. These infections may involve only the skin or may be more serious and involve tissue under the skin or organs. SSIs sometimes take days or months after surgery to develop. Symptoms may include fever, redness or pain around the surgical site, and drainage of fluid from the wound.
- **Methicillin-resistant *Staphylococcus aureus* (MRSA)** infections are caused by bacteria that are resistant to certain types of drugs including the antibiotic methicillin. MRSA can cause skin or wound infections. Sometimes, MRSA can infect the blood and cause serious illness and even death. Only bloodstream infections are shown in this report.
- ***Clostridioides difficile* (*C. difficile*)** is a type of bacteria that causes severe diarrhea and can be deadly. *C. difficile* infections usually occur in people who have recently taken antibiotics and been under medical care.

READING GUIDE: Explanation of Each Variable in the Tables and Figures

Below is a list of all variables shown in the data tables and figures:

- **Title:** The title of the table gives you information about the infection type, time period, and facility unit(s)/group(s) included in the table.
- **Procedure Type:** This is the specific type of surgery for which the surgical site infection (SSI) data are presented (e.g., abdominal hysterectomy, colon surgery).
- **Unit/Unit Type:** This is the specific unit/type of unit in the hospital from which the data was collected. Hospitals have distinct locations, or units, within the facility that are designated for certain types of patients. For example: “Med/Surg ICU” represents the intensive care unit (ICU) for very sick patients needing medical or surgical care.
- **Observed Infections (or Observed Events):** This is the number of infections (or events, for LabID measures) reported in the hospital.
- **Predicted Infections (or Predicted Events):** This is a calculated value that reflects the number of infections (or events, for LabID measures) that we have “predicted” to occur in each hospital state, based on the national experience.
- **“How Does North Carolina Compare to the National Experience?”** Colors and symbols are used to help you quickly understand and interpret the data. This is the “take-home message” about health care-associated infections in North Carolina.

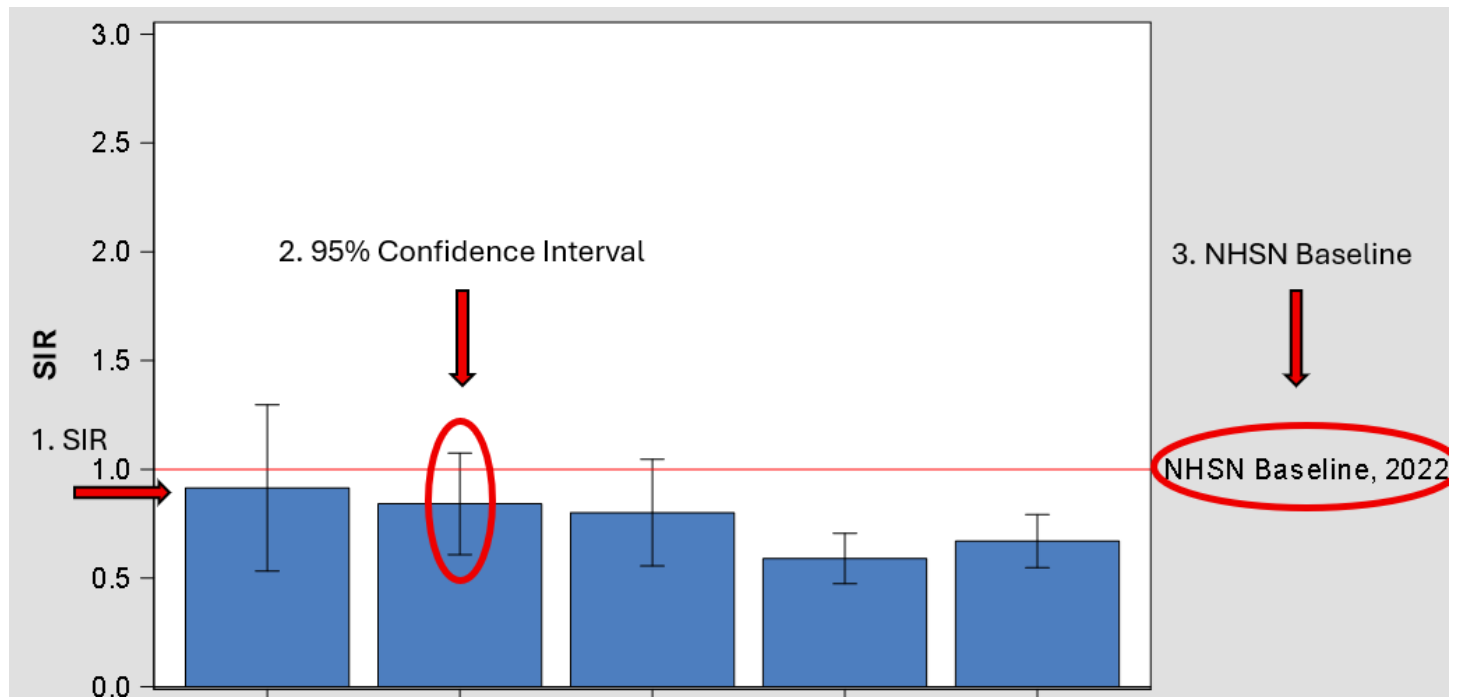
Indicates that North Carolina had fewer infections than were predicted (better than the national experience)

Indicates that North Carolina had about the same number of infections as were predicted (same as the national experience)

Indicates that North Carolina had more infections than were predicted (worse than the national experience)

NUMBERS GUIDE: Explanation of Numbers and Data Calculations

Below is an explanation of numbers and data calculations used in the figures:



1. SIR - Represented by the colored bars in each figure.

- SIR = number of *observed* infections / numbers of *predicted* infections based on the 2022 national baseline experience.
- An SIR of 1 means that the same number of infections were observed as was predicted. An SIR greater than 1 means that more infections were observed than predicted (worse), while an SIR less than 1 means fewer infections were observed than predicted (better).
- SIR is calculated for each HAI.
- The SIR is considered a “best guess” or estimate of observed infections compared to those predicted during the time period presented.

2. 95% confidence intervals for the SIR – Represented by the skinny gray lines in each figure.

These gray lines represent a lower and a higher limit around the SIR; together these limits create an interval. It means there is 95% confidence the SIR estimate falls within this interval. Wider bars indicate less confidence in the SIR estimate.

Interpreting the 95% confidence intervals:

- If the value of 1.0 is included between the lower and upper limit, there is **NO** significant difference between the number of observed and predicted infections. For example, the bar marked A above is not significantly better than the national experience because the 95% confidence interval crosses the red line at 1.0 (the NHSN baseline).
- If the value of 1.0 is NOT included between the lower and upper limit, there **IS** a significant difference between the number of observed and predicted infections. For example, the bar marked B above is significantly better than the national experience because the 95% confidence interval does not cross the red line at 1.0.

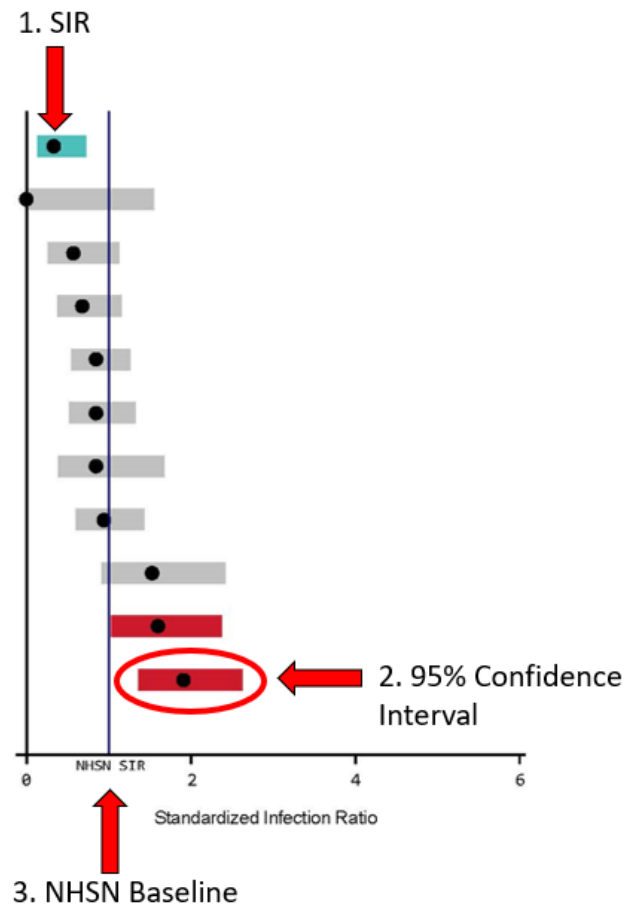
3. NHSN Baseline (i.e., national experience) – Represented by the solid red line in each figure.

- The NHSN baseline is the number of predicted infections based on national experience.

- The NHSN baseline year for all HAIs use data from 2022.

4. How can I use the SIR, 95% Confidence Interval, and the NHSN Baseline to know how North Carolina compared to the national experience? To understand each figure, you will need to look at all three of these numbers. You'll specifically need to know whether the SIR falls around 1.0 (the NHSN baseline), less than 1.0 or greater than 1.0 and whether the 95% Confidence Interval contains the value of 1.0.

Below is an explanation of numbers and data calculations used in the SIR plots:



SIR plots are used to compare HAI infection data in North Carolina by hospital size groups. Each plot displays the facilities in a particular hospital size group on the left-hand side. To the right of each facility's information is the plot. The elements of this plot are described as follows:

1. SIR - Represented by a black circle on the plots

- SIR = number of *observed* infections / numbers of *predicted* infections based on the 2022 national baseline experience.
- SIR is calculated for each facility.
- The SIR is considered a “best guess” or estimate of observed infections compared to those predicted during time period displayed.

2. 95% confidence intervals for the SIR – Represented by the red, grey, and green bands surrounding the SIR dot.

These bands represent a lower and a higher limit around the SIR. It means we are 95% confident the SIR estimate falls within this interval. Wider bands indicate less confidence in the SIR estimate.

Interpreting the 95% confidence intervals:

- If the value of 1.0 is included between the lower and upper limit, there is NO significant difference between the number of observed and predicted infections. Facilities with about the same number observed infections as predicted will have a **grey** confidence interval.
- If the upper confidence limit is less than 1.0, there were FEWER observed infections than predicted by the national experience. Facilities with fewer observed infections than predicted will have a **green** confidence interval.
- If the lower confidence limit is greater than 1.0, there were MORE observed infections than predicted by the national experience. Facilities with MORE observed infections than predicted will have a **red** confidence interval.

3. NHSN Baseline (i.e. national experience) – Represented by the solid line in each plot.

- The NHSN baseline is the number of predicted infections based on national experience.
- The NHSN baseline year is 2022.

APPENDICES

APPENDIX A. Definitions

<u>Term</u>	<u>Definition</u>
Aggregate data	Sum or total data. For example, aggregate NC HAI data refers to the sum, or total, of all hospital HAI data in NC.
Beds	The number of staffed patient beds in a facility or patient care location. This may be different from the number of licensed beds.
Catheter-associated urinary tract infection	Urinary tract infection (UTI) that occurs in a patient who had an indwelling urinary catheter in place within the 48-hour period before the onset of the UTI.
Central line	A catheter (tube) that doctors place in a large vein in the neck, chest, or groin ending in a large vein near the heart. It is used to give medication or fluids or to collect blood for medical tests. Also known as a central venous catheter.
Central line-associated bloodstream infection	A bloodstream infection (BSI) that occurs in a patient who had a central line within the 48-hour period before the onset of the BSI and is not related to an infection at another site.
Health care-associated infections	Infections caused by a wide variety of common and unusual bacteria, fungi, and viruses during the course of receiving medical care.
Intensive care unit	A nursing care area that provides intensive observation, diagnosis, and therapeutic procedures for adults and children who are critically ill. Also referred to as critical care unit.
Medical affiliation	Affiliation with a medical school. There are four categories: <i>Major teaching</i> – Hospital is an important part of the teaching program of a medical school and the majority of medical students rotate through multiple clinical services. <i>Graduate</i> – Hospital used by the medical school for graduate training programs only (i.e., residency and/or fellowships). <i>Limited</i> – Hospital used in the medical school’s teaching program to a limited extent. <i>No</i> – Hospital not affiliated with a medical school.
Standardized infection ratio	A ratio of observed to expected (or predicted) numbers of infection events that is adjusted for selected risk factors.
Surgical site infection	Infection that occurs after surgery, in the part of the body where the surgery took place.
Urinary catheter	A drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system.
Validity (data)	The extent to which reported cases of a disease or event correspond accurately to cases of a disease event that actually occurred.

APPENDIX B. Acronyms

APIC-NC	Association for Professionals in Infection Control and Epidemiology, NC Chapter
BSI	Bloodstream infection
CAUTI	Catheter-associated urinary tract infection
CDC	Centers for Disease Control and Prevention
<i>C. diff</i>	<i>Clostridioides difficile</i>
CDI	<i>Clostridioides difficile</i> infection
CI	Confidence interval
CMS	Centers for Medicare & Medicaid Services
CLABSI	Central line-associated bloodstream infections
CRE	Carbapenem-resistant Enterobacterales
DHHS	Department of Health and Human Services
DHSR	Division of Health Service Regulation
DPH	Division of Public Health
HAI	Health care-associated Infections
ICU	Intensive care unit
IP	Infection preventionist
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
NCHA	North Carolina Healthcare Association
NC SPICE	North Carolina Statewide Program for Infection Control and Epidemiology
NHSN	National Healthcare Safety Network
NICU	Neonatal intensive (critical) care unit
SIR	Standardized infection ratio
SSI	Surgical site infection

Appendix C. 2024 Surveillance for Health Care-Associated and Resistant Pathogens Patient Safety (SHARPPS) Program Advisory Group

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Duke University Department of Medicine

Erica Wilson, MD, MPH
Head, Medical Consultation Unit
Division of Public Health

Appendix D. Health care Facility Groupings, 2024 National Healthcare Safety Network Annual Hospital Survey

Hospital Group	Hospital Name	Number of Beds
1-99 Beds	FirstHealth Moore Regional Hospital - Hoke Campus	8
	Carolinas Healthcare System Anson	15
	Cherokee Indian Hospital	17
	Person Memorial Hospital	18
	North Carolina Specialty Hospital	24
	McDowell Hospital	30
	Novant Health Medical Park Hospital	33
	Asheville Specialty Hospital	34
	Novant Health Clemmons Medical Center	36
	Cape Fear Valley Hoke Hospital	41
	Iredell Davis Behavioral Health	42
	Novant Health Charlotte Orthopedic Hospital	42
	Granville Medical Center	43
	Central Harnett Hospital	44
	Wake Forest Baptist Health-Davie Medical Center	46
	Johnston Health Clayton	50
	Novant Health Mint Hill Medical Center	50
	Rex Holly Springs Hospital	50
	Novant Health New Hanover Orthopedic Hospital	55
	Central Carolina Hospital	55
	Novant Health Ballantyne Medical Center	56
	Annie Penn Hospital	59
	Hugh Chatham Memorial Hospital	60
	Kings Mountain Hospital	67
	Wake Forest Baptist Health-Lexington Medical Center	71
	Harris Regional Hospital	72
	Wake Forest Baptist Health Wilkes Medical Center	75
	ECU Health Beaufort Hospital	77
	Columbus Regional Healthcare System	77
	FirstHealth Moore Regional Hospital - Richmond Campus	79
	Randolph Hospital DbA Randolph Health	80

Hospital Group	Hospital Name	Number of Beds
	WakeMed North Family Health & Women's Hospital	81
	ECU Health Duplin Hospital	81
	Rutherford Regional Medical Center	82
	ECU Health North Hospital	82
	Betsy Johnson Hospital	87
	Novant Health Brunswick Medical Center	88
	Advent Health Hendersonville	95
	Carteret General Hospital	99
100-199 Beds	Novant Health Kernersville Medical Center	100
	Northern Regional Hospital	100
	Atrium Health Lincoln	101
	Lenoir Memorial Hospital	102
	Scotland Memorial Hospital	104
	ECU Health Edgecombe Hospital	105
	UNC Rockingham Health	108
	Atrium Health Stanly	109
	ECU Health Roanoke-Chowan Hospital	114
	Sentara Albemarle Medical Center	114
	Sampson Regional Medical Center	116
	Atrium Health University City	117
	ARHS-Watauga Medical Center	117
	Haywood Regional Medical Center	117
	Duke Health Lake Norman Hospital	123
	Maria Parham Medical Center	124
	Novant Health Thomasville Medical Center	130
	UNC Health Blue Ridge	133
	Caldwell Memorial Hospital	137
	Wilson Medical Center	141
	Atrium-Union	142
	Pardee Hospital	143
	Wesley Long Hospital	150
	Onslow Memorial Hospital	162
	Broughton Hospital	165

Hospital Group	Hospital Name	Number of Beds
	Johnston Health	165
	Nash Health Care Systems	184
	Frye Regional Medical Center	190
	Novant Health Matthews Medical Center	191
	Novant Health Huntersville Medical Center	193
	Southeastern Regional Medical Center	199
	Iredell Memorial Hospital	199
200-399 Beds	Duke Raleigh Hospital	204
	Atrium-Mercy	207
	Wayne Memorial Hospital	226
	WakeMed Cary Hospital	234
	Alamance Regional Medical Center	240
	Carolinas Healthcare System Cleveland	241
	Novant Health Rowan Medical Center	245
	Catawba Valley Medical Center	253
	Cherry Hospital	259
	High Point Regional Health System	304
	Atrium-Pineville	308
	CarolinaEast Medical Center	350
	FirstHealth Moore Regional Hospital	362
	Duke Regional Hospital	388
	Central Regional Hospital	398
400 + Beds	Gaston Memorial Hospital	497
	Atrium Health Cabarrus	501
	Rex Healthcare	544
	Moses Cone Hospital	581
	Cape Fear Valley Health System	636
	Novant Health Presbyterian Medical Center	642
	WakeMed	719
	Novant Health Forsyth Medical Center	832
	Mission Hospital	853
	New Hanover Regional Medical Center	877
Primary Medical School Affiliation	Carolinas Medical Center	868

Hospital Group	Hospital Name	Number of Beds
	Wake Forest University Baptist Medical Center	881
	ECU Health Medical Center	1039
	Duke University Hospital	1062
	UNC Health Care	1089