

# Nebraska Healthcare-Associated Infections and Antimicrobial Resistance (HAI/AR) Program Update

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## Disclosure

- Merck & Co. Inc – Principal Investigator for an investigator-initiated research grant focused on training consultant pharmacist in antibiotic stewardship implementation in LTCF



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# Objectives

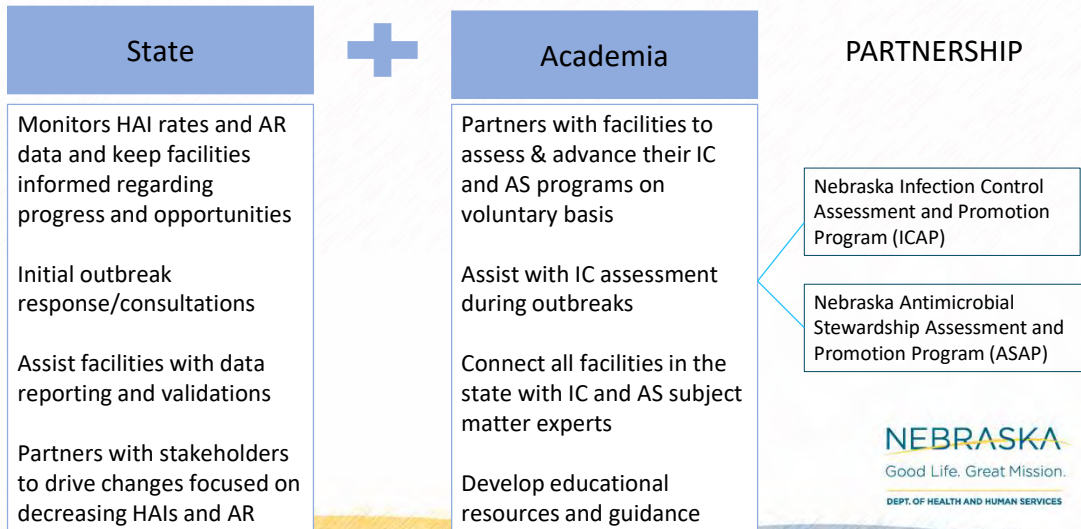
- Review trends in healthcare-associated infections and antimicrobial resistance (HAI/AR) in Nebraska
- Identify opportunities for improvement related to infection prevention and control (IPC) and antimicrobial stewardship (AS) programs
- Discuss upcoming and ongoing projects focused on strengthening IPC and AS programs in healthcare facilities and decreasing HAI/AR



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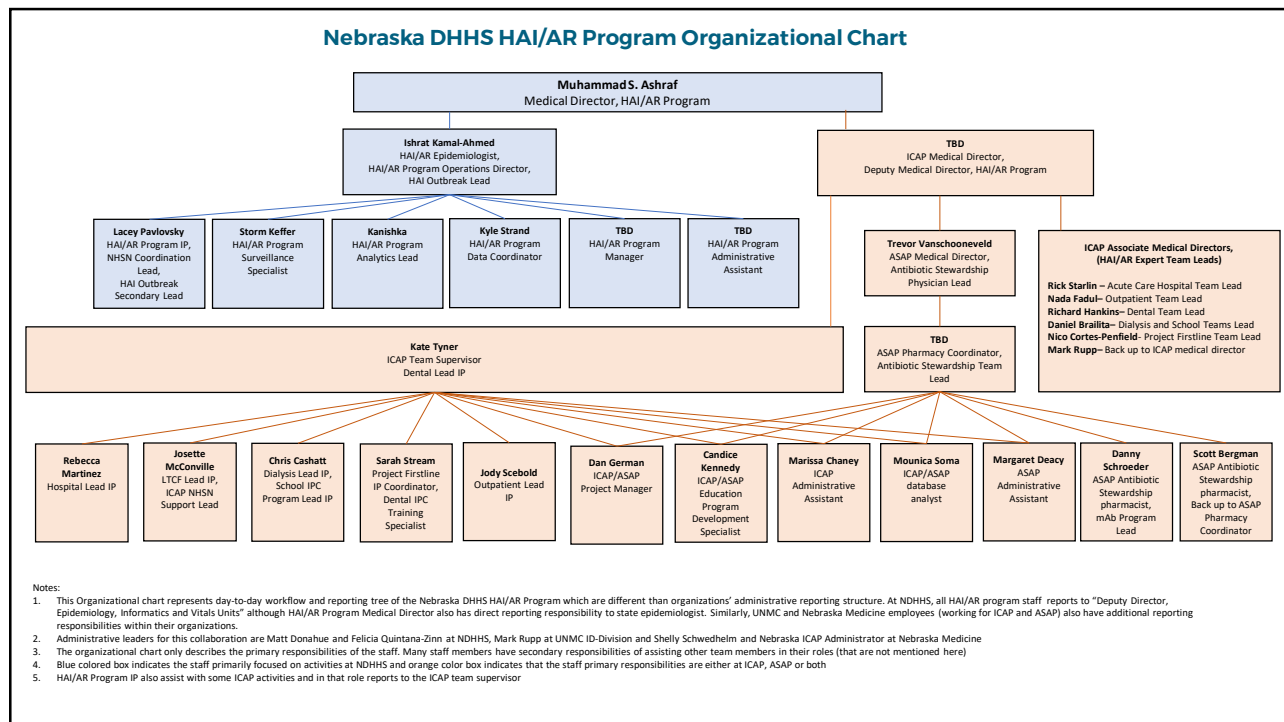
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# Nebraska DHHS HAI/AR Program

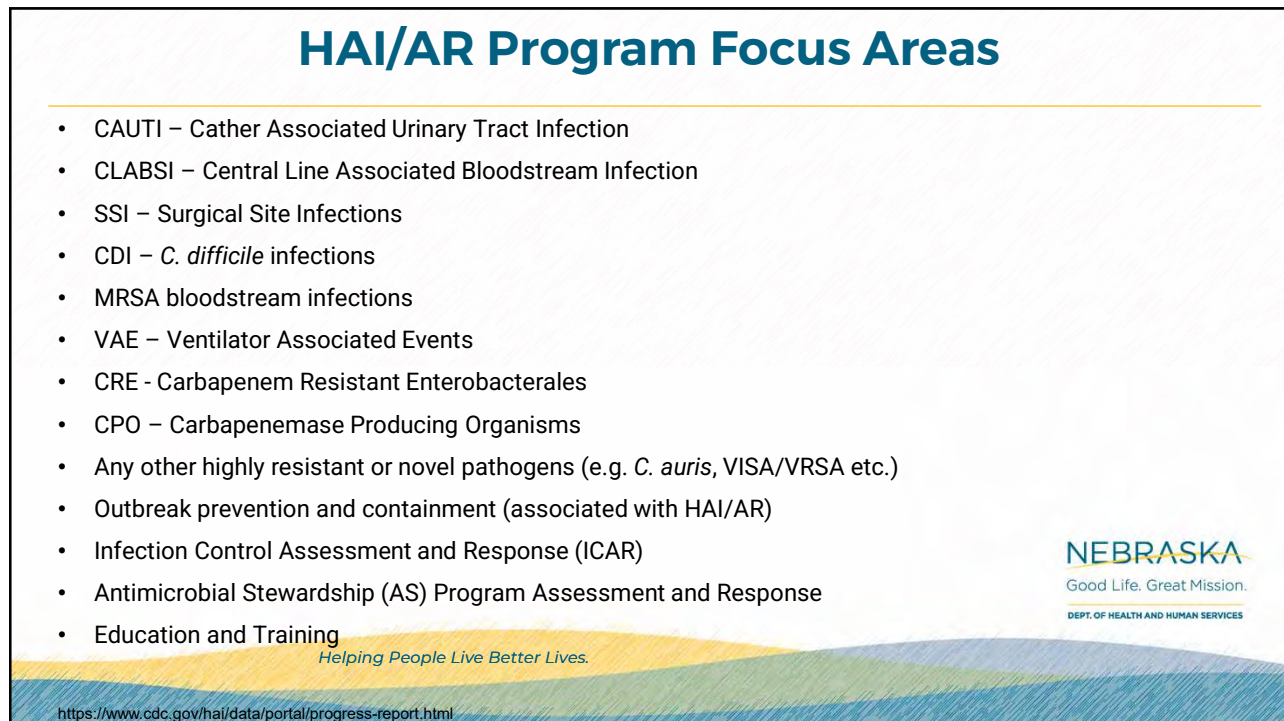


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## HAI's are Reportable in Nebraska - Title 173

1-003.01C Reporting by Healthcare Facilities in lieu of Physicians for Healthcare Associated Infections (HAIs): Healthcare Associated Infections (HAIs) that are reported by healthcare facilities to CDC's NHSN are reportable. If a healthcare facility provides access to NHSN Healthcare Associated Infection (HAI) data to the department and its local public health department and Healthcare Associated Infections (HAIs) are reported to NHSN on a quarterly basis aligning with the CMS Reporting Schedule, the physician is not required to make the Healthcare Associated Infection (HAI) report. Physicians remain obligated to report Healthcare Associated Infections (HAIs) when access to NHSN data is not provided to the department. In the event of an outbreak, the department has the authority to require Healthcare Associated Infection (HAI) data reports from facilities not currently reporting to NHSN.

1-004.01B Clusters, Outbreaks, or Unusual Events, Including Possible Bioterroristic Attacks\*: Clusters, outbreaks, or epidemics of any health problem, infectious or other, both in the community and in healthcare settings, including food poisoning, healthcare-associated outbreaks or clusters, influenza, or possible bioterroristic attack; increased disease incidence beyond expectations; unexplained deaths possibly due to unidentified infectious causes; and any unusual disease or manifestations of illness must be reported immediately.

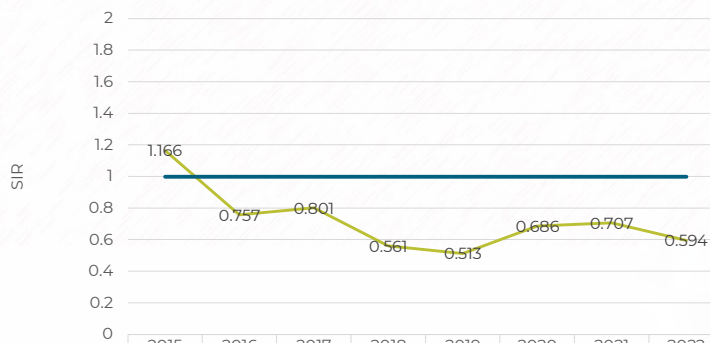


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[https://www.nebraska.gov/rules-and-regs/regsearch/Rules/Health\\_and\\_Human\\_Services\\_System/Title-173/Chapter-01.pdf](https://www.nebraska.gov/rules-and-regs/regsearch/Rules/Health_and_Human_Services_System/Title-173/Chapter-01.pdf)

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## CLABSI [COMBINED ICU-WARD] - Nebraska 2015-2022



	2015	2016	2017	2018	2019	2020	2021	2022
Observed	186	119	124	88	80	103	112	46
Predicted	159	157	155	157	156	150	159	77
Goal	1	1	1	1	1	1	1	1

\*2022 Data is for January-June 2022

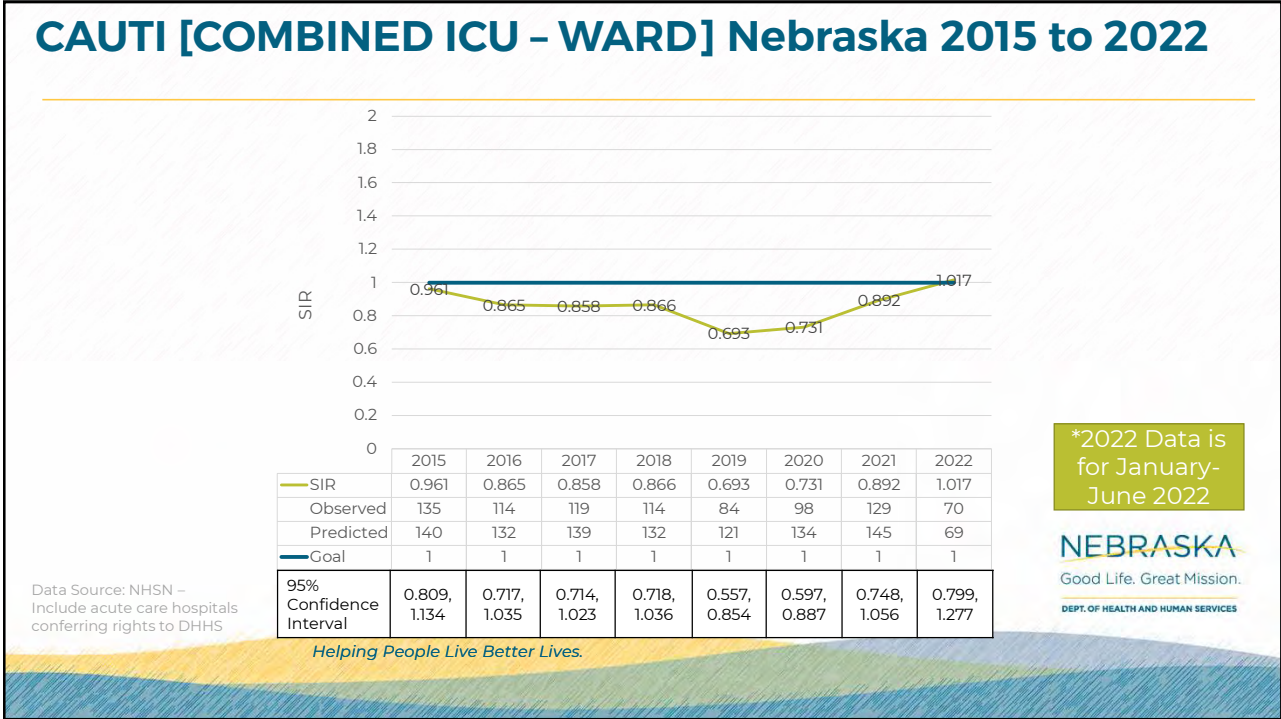


Data Source: NHSN - Include acute care hospitals conferring rights to DHHS

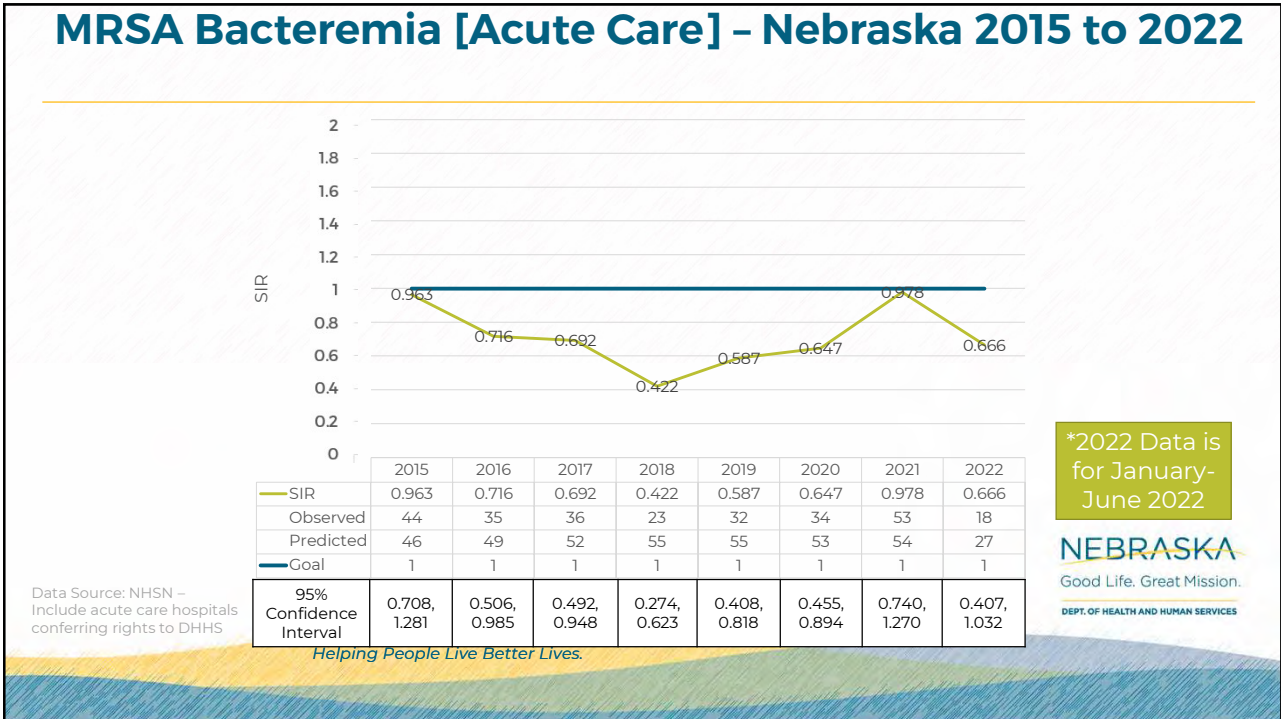
95% Confidence Interval	2015	2016	2017	2018	2019	2020	2021	2022
	1.008, 1.343	0.630, 0.902	0.669, 0.952	0.453, 0.688	0.410, 0.635	0.563, 0.829	0.586, 0.849	0.440, 0.786

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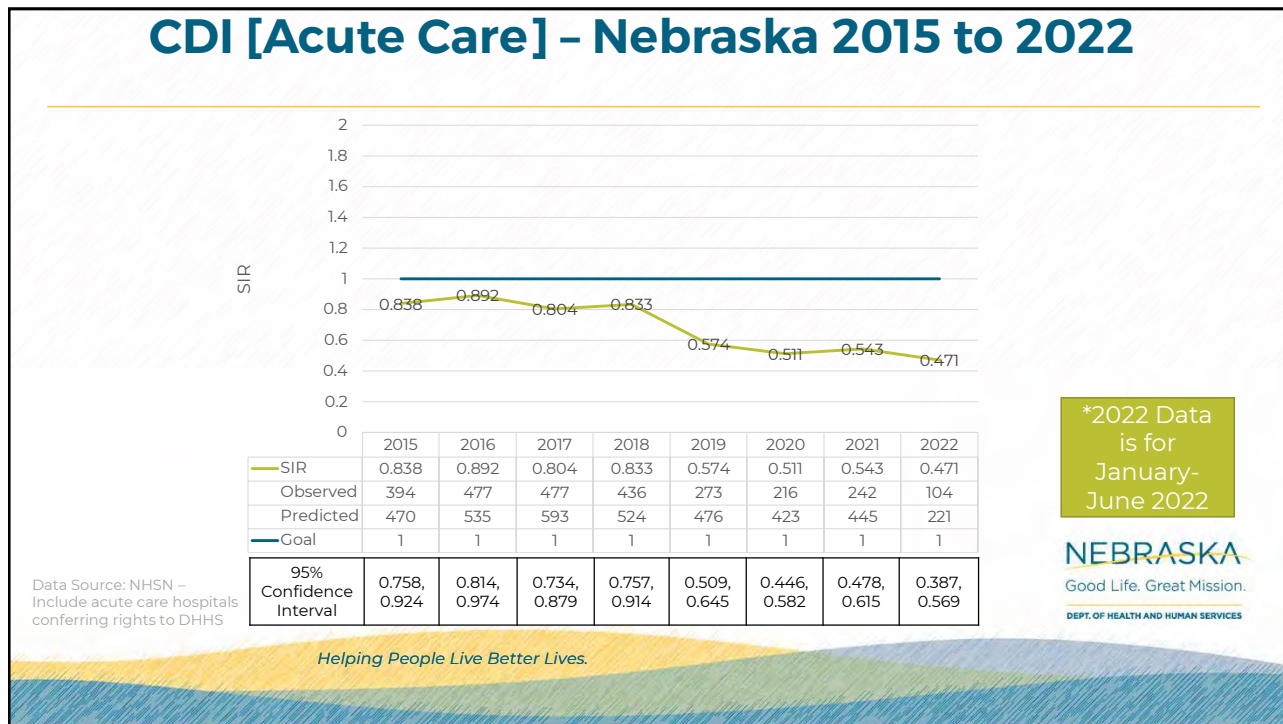
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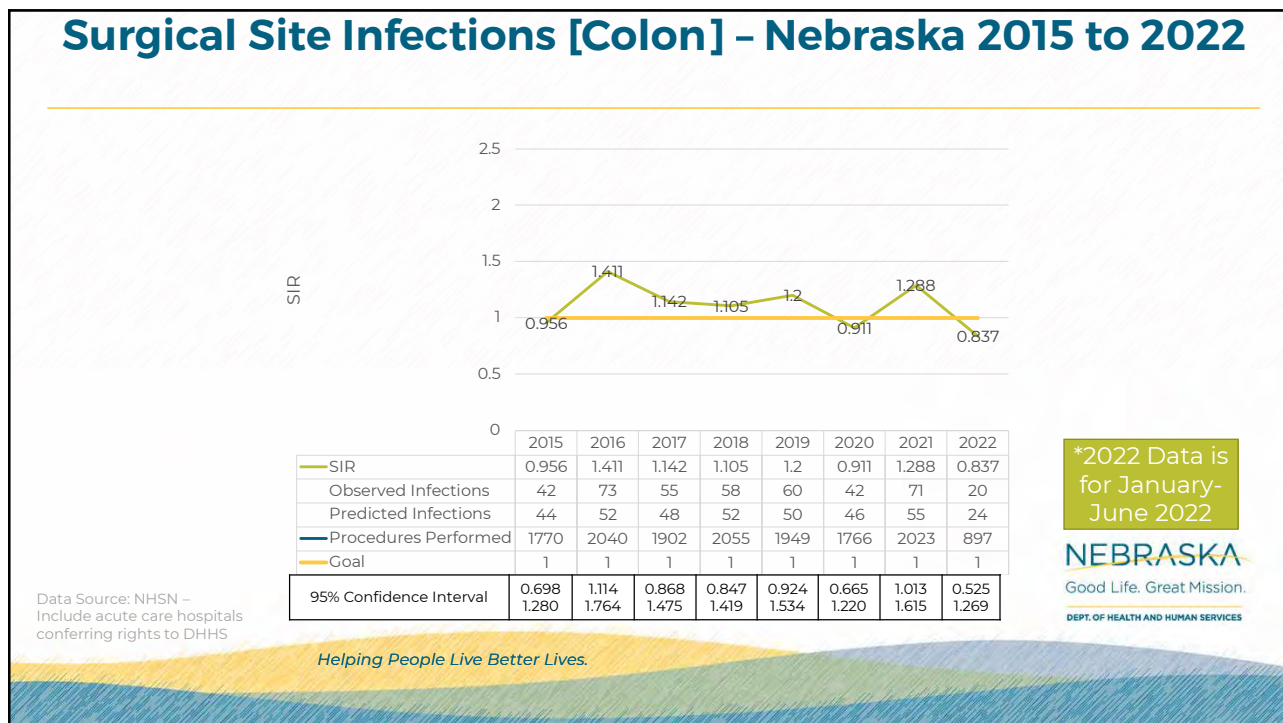
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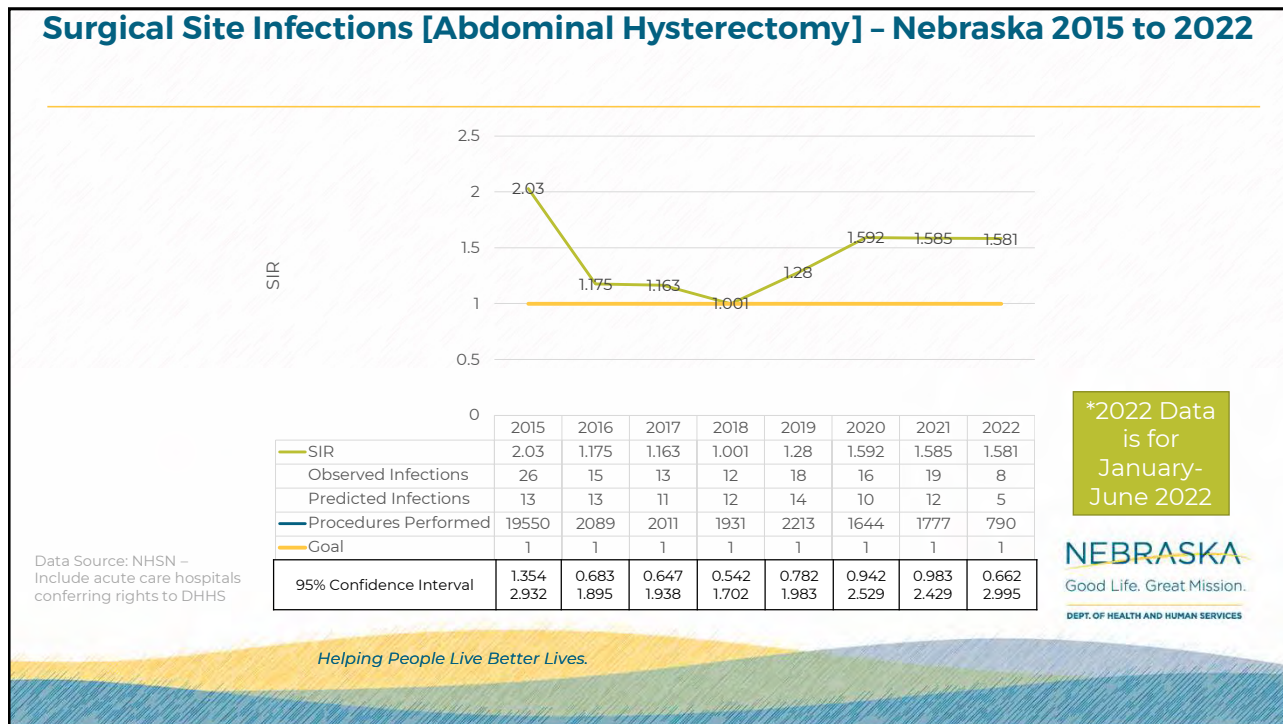
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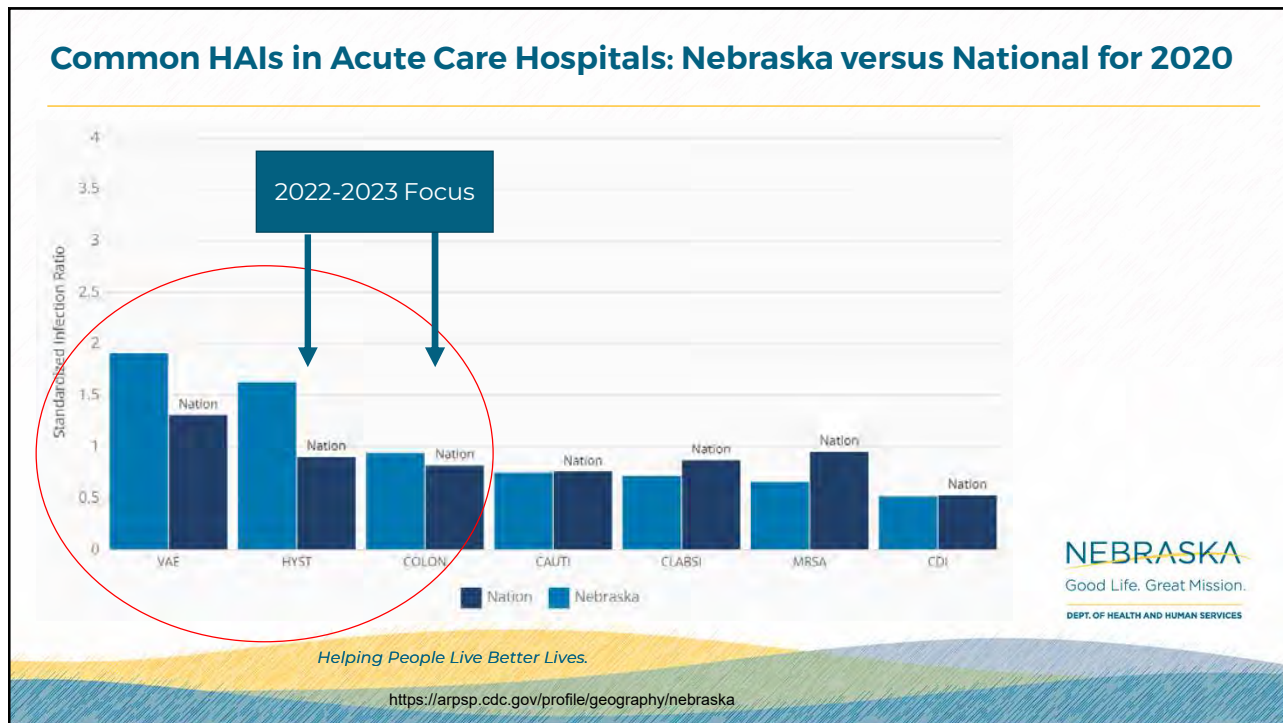
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## Surgical Site Infections – Planned Activities

- Development of SSI subcommittee of Nebraska HAI/AR Advisory Council
  - Statewide survey of protocols and procedures related to SSI prevention
  - Establishing joint collaboratives to share best practices, lessons learned and mitigation strategies for encountered challenges
  - Creating best practice guidance, tools and resources for all Nebraska hospitals
- One-on-one outreach and assistance, as needed, for healthcare facilities with higher SSI SIR

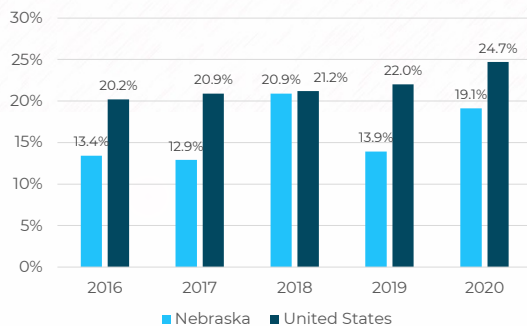


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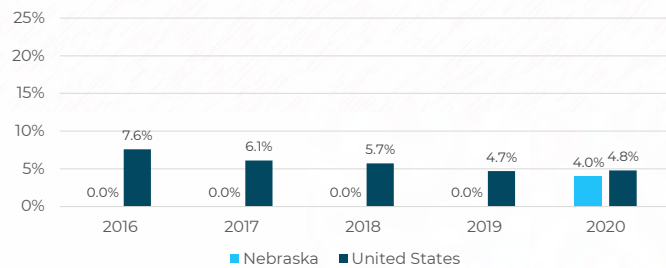
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## Antibiotic Resistant Organisms Associated with Healthcare-Associated Infections

Cephalosporin Resistance Among *E. coli* Isolates Identified in Healthcare-Associated Infections



Carbapenem Resistance Among Klebsiella Isolates Identified in Healthcare-Associated Infections



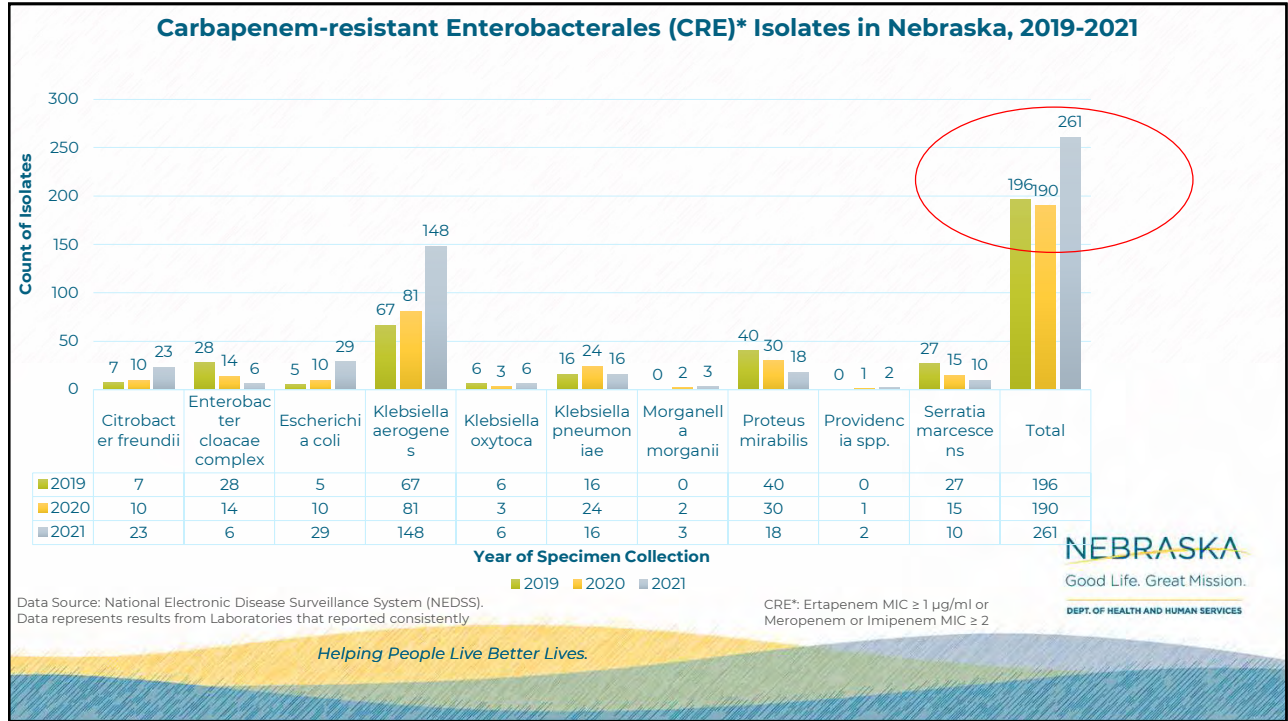
<https://arpsp.cdc.gov/profile/geography/nebraska>



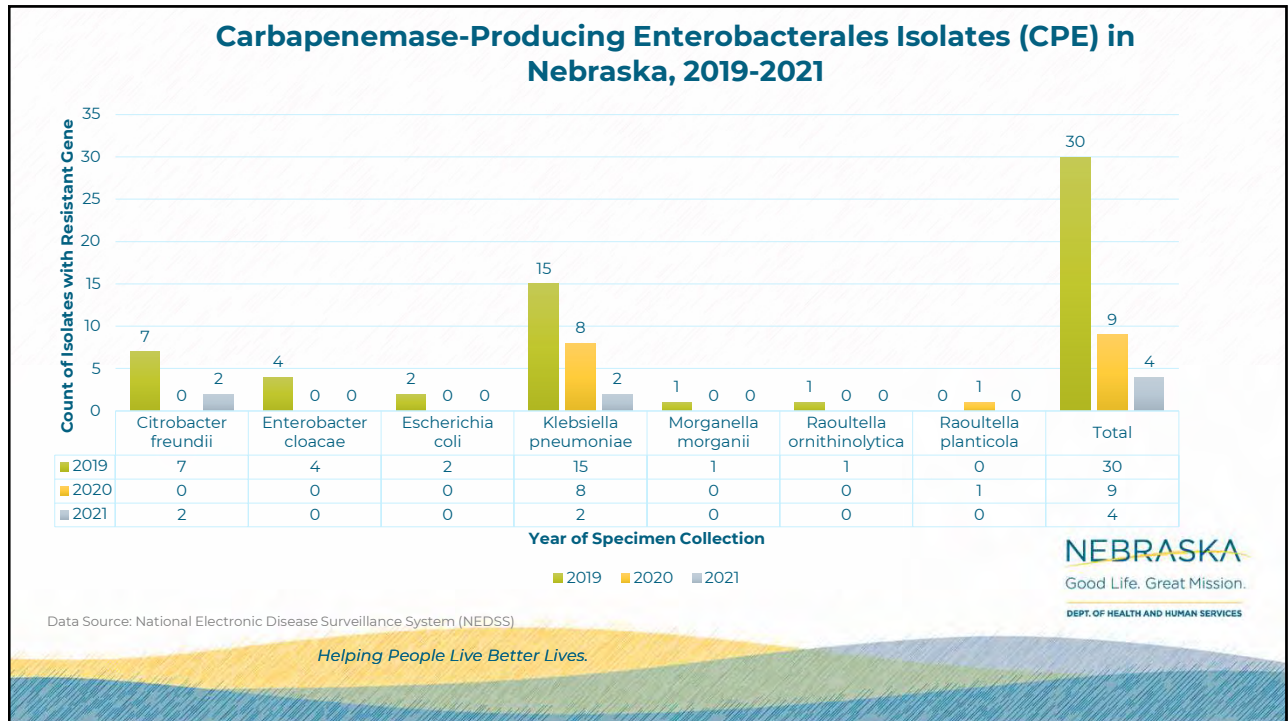
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## Carbapenemase Genes Identified in Enterobacterales Isolates, Nebraska 2019-2021

Year	KPC	NDM	OXA-181	OXA-48	Total
2019	18	9	3	0	30
2020	8	0	0	1	9
2021	3	0	0	1	4

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## Nebraska DHHS CP-CRE Containment Response

- Isolation
- Epidemiologic investigation
- Screening/testing for additional cases
- Infection Control Assessments (as needed)
- Alerting other healthcare facilities with potential exposures and initiating detection and containment response, as needed

### Antimicrobial Resistance Information For Healthcare Providers

#### Sections on this page

1. Reportable Organisms
2. Emerging Resistant Organisms
3. Carbapenem Resistant Organisms
4. CRE Data
5. CRE Guidelines and Forms
6. Additional Resources

Back to Healthcare Associated Infections Home

More

Alert DHHS about HAI/AR Event or Organism

About Healthcare Associated Infections (HAI)

Antimicrobial Resistance (AR)

COVID-19 Resources for Health Care Providers

<https://dhhs.ne.gov/Pages/Antimicrobial-Resistance.aspx#SectionLink5>

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C. The detection of any single carbapenemase-producing organism in Nebraska will be considered an outbreak that requires investigation. In facilities not able to perform testing for carbapenemases, any CRE detected will be considered an outbreak that requires an investigation.

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## Antibiotic Resistance Information Exchange (ARIE)

- Statewide ARIE do not exist in Nebraska
- DHHS HAI/AR Program notifies facilities upon becoming aware of a patient colonized or infected with a pathogen of concern in their facility
- Working with CyncHealth to identify short term and long-term solutions
- Developed a HAI/AR Advisory Council subcommittee to work with DHHS and CyncHealth partners to identify best strategies for implementation

<https://www.cdc.gov/hai/pdfs/ARIE-Interim-Guidance-508.pdf>

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### Guiding Principles

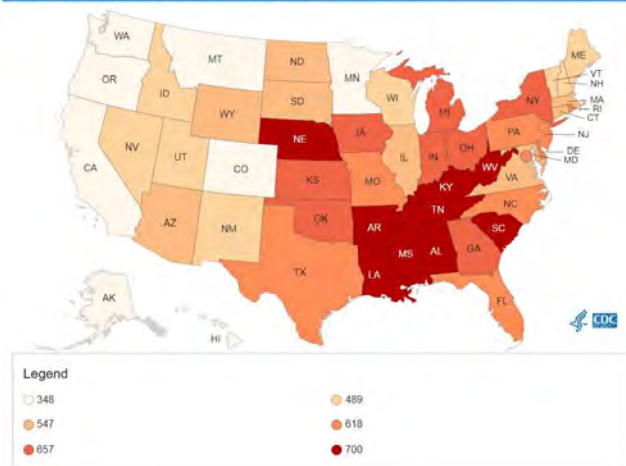
This document provides interim guidance for developing and implementing ARIE. CDC recognizes that a one-size-fits-all approach to developing an ARIE is not feasible given the unique aspects of jurisdictions, including existing systems and infrastructure, the availability of resources, and the ARIE users and stakeholders. Ideally, all ARIEs align with the guiding principles and work toward interoperability and standards-based systems that benefit all levels of stakeholders. An ARIE should:

1. Facilitate the timely sharing of relevant patient, facility, and pathogen information to trigger appropriate action in anticipation of or as soon as possible in a patient encounter.
2. Protect health information to maintain patient privacy and data security.
3. Minimize the implementation burden by:
  - a. Adhering to a parsimonious, well-defined set of data elements.
  - b. Facilitating interoperability and automated electronic data entry and exchanges by aligning with existing data systems, health IT standards, vocabularies, specifications, and messaging when possible.
4. Incorporate performance and engagement metrics for quality improvement.

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## Community Antibiotic Prescribing in Nebraska

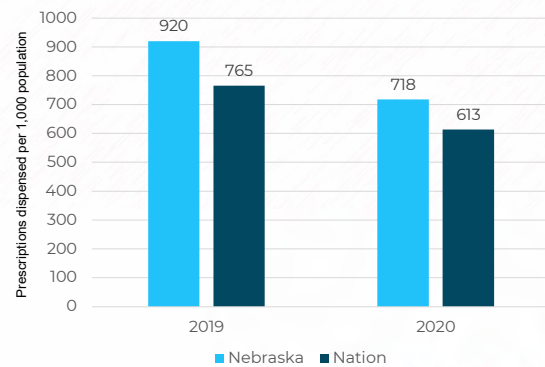
Community Antibiotic Prescriptions per 1,000 Population by State – 2020



<https://www.cdc.gov/antibiotic-use/data/report-2020.html>

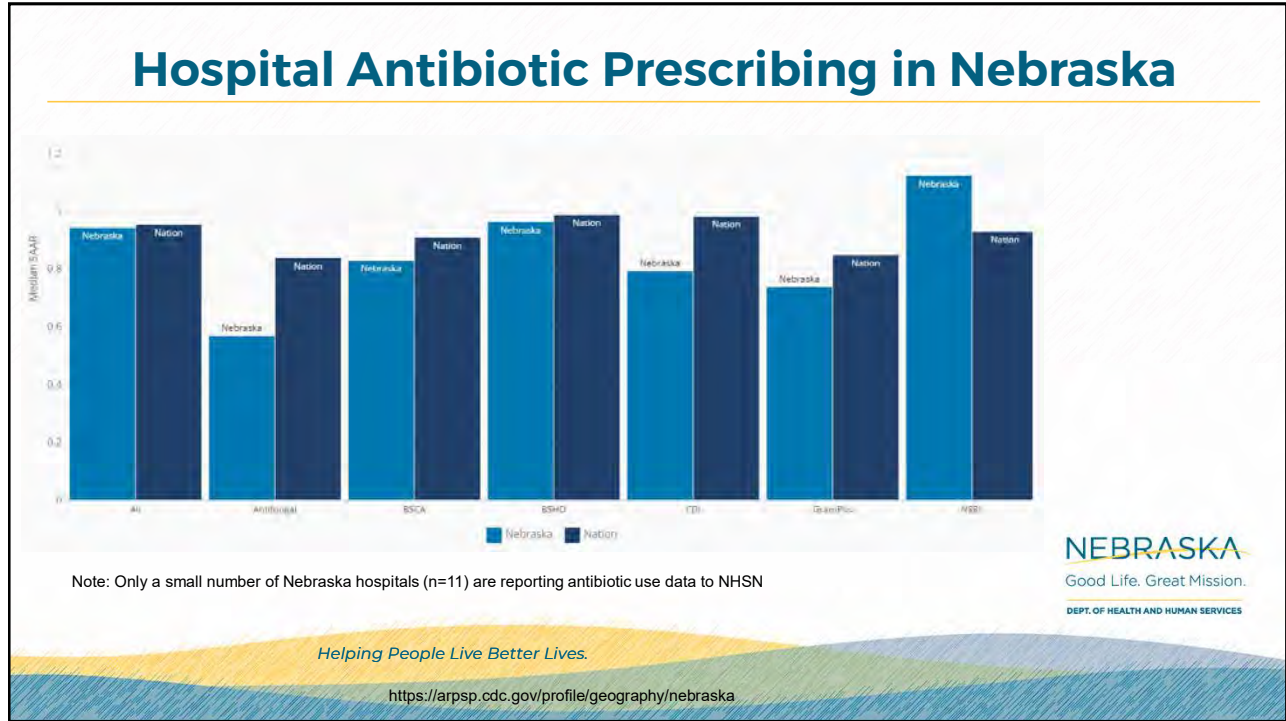
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Changes over time in outpatient antibiotic prescription rates

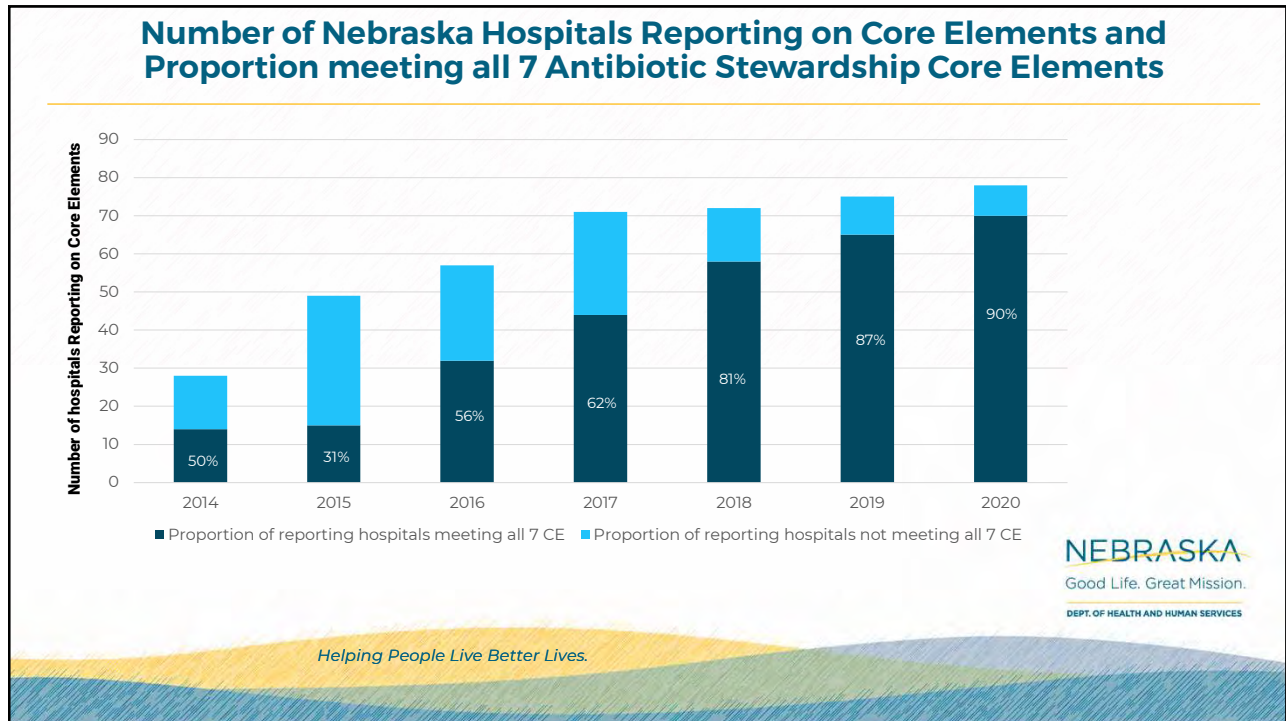


<https://arpsp.cdc.gov/profile/geography/nebraska> **NEBRASKA**  
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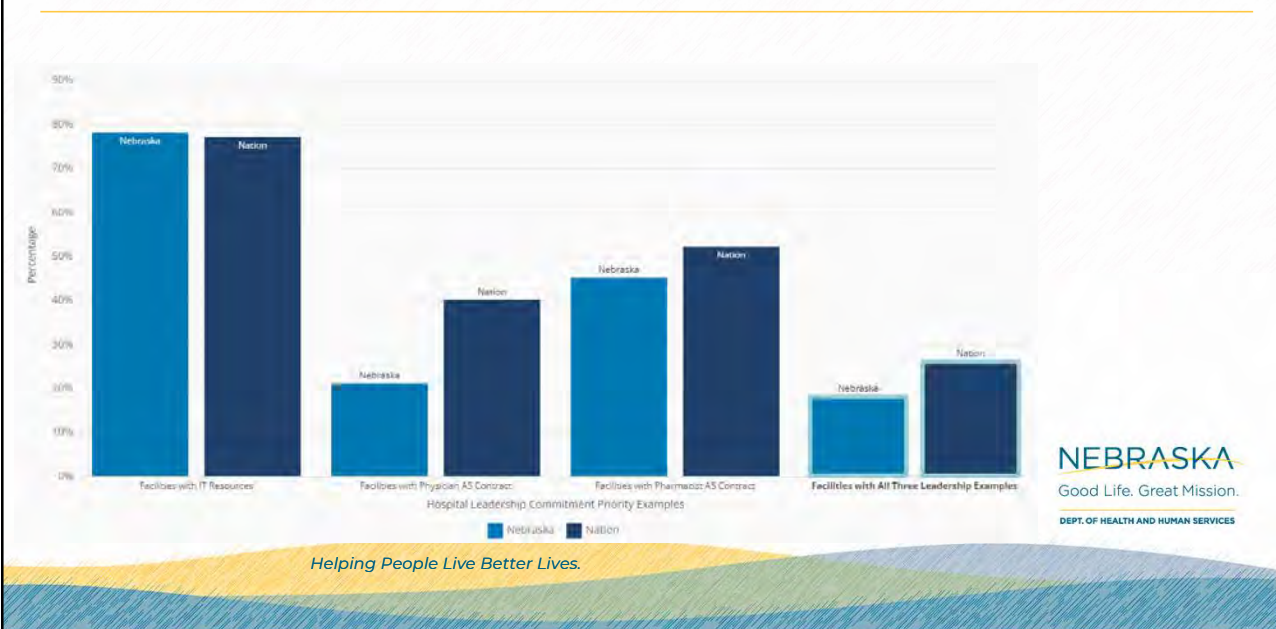


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## Hospital Leadership Commitment to Antibiotic Stewardship: Nebraska vs. US



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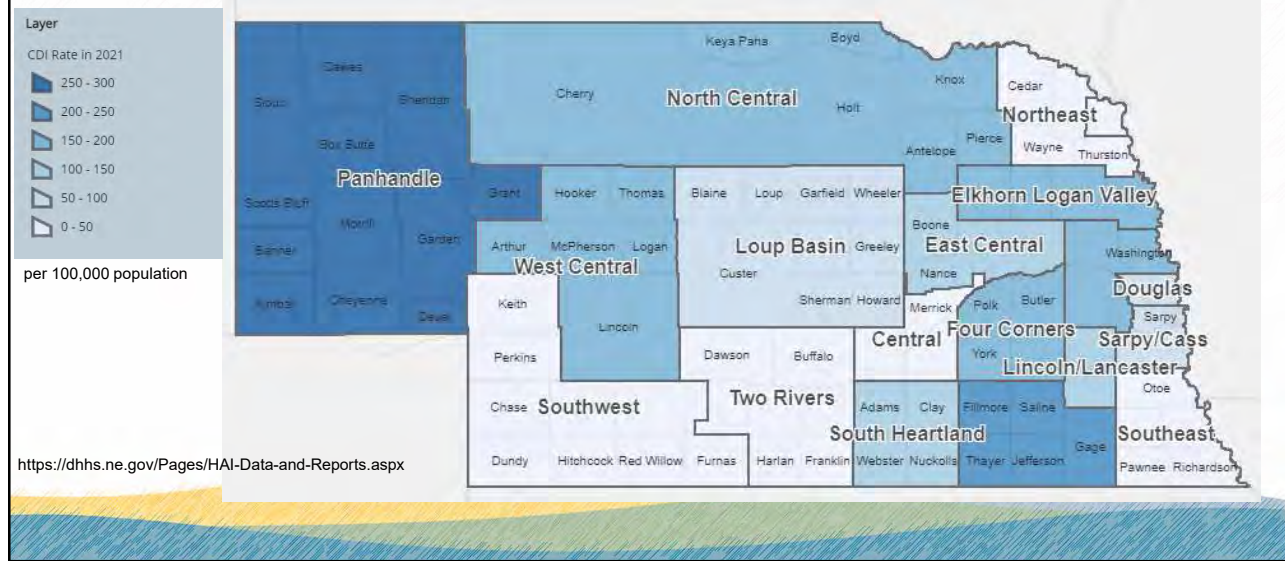
## Specific Steps for Improving Antibiotic Stewardship Programs

- Promoting use of NHSN Antimicrobial Use and Resistance (AUR) module [Partial cost reimbursement proposal in development]
- Recognition of facilities meeting all antibiotic stewardship core elements and looking to further strengthen their program
- Free antibiotic stewardship program assessments and feedback through Nebraska ASAP initiative
- Collaboration with LTC consultant pharmacists focusing on improving antibiotic stewardship in LTC settings
- Sharing data with healthcare facilities at local health department level



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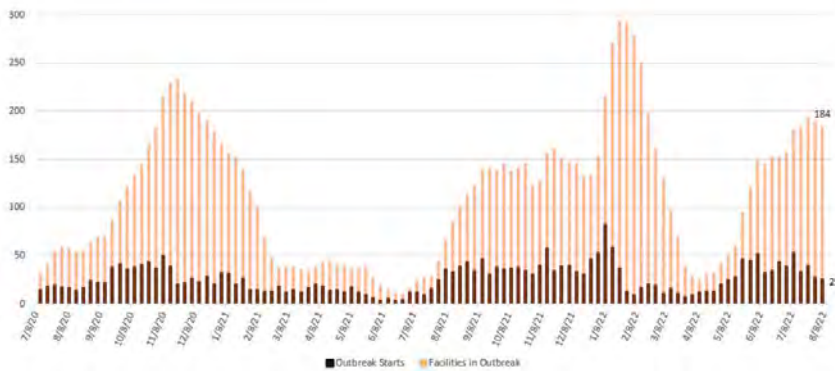
## Interactive Dashboard for *C. difficile* Cases in Nebraska Using ELR Data



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## Nebraska DHHS HAI/AR Program LTCF Support During COVID-19 Pandemic

Nebraska LTCF COVID-19 outbreaks by Week  
Max numbers of LTCF in outbreaks and total new outbreaks for each week



From 3/2020 to 7/2022, ICAP has assisted 396 of 489 (81.0%) NE LTCFs during COVID-19 outbreaks

ICAP has held weekly webinars since March 2020 with average weekly attendance of 322 IPC leaders in 2020, 282 in 2021 and 261 in 2022

ASAP has assisted with review and distribution of >1600 COVID-19 treatment courses

Note: Identification of a single case of resident or staff in a LTCF with no previous case in last 14 days is considered a new outbreak. LTCF is considered to have ongoing outbreak until there is no new cases identified for 14 days.

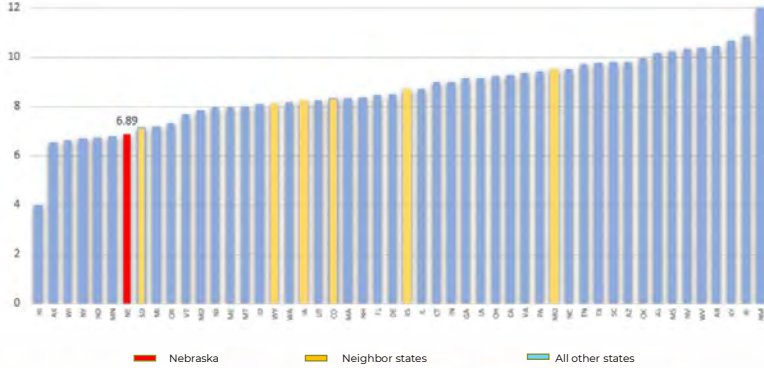
Data Source: ICAP compilation of data from NHSN and facility reports to DHHS and/or ICAP *Helping People Live Better Lives.*



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## Nursing Home COVID-19 Case Rates During COVID-19 Pandemic

LTCF Resident COVID Cases per 1000-Resident Week  
CMS Data Through July 24, 2022  
Total Resident COVID Cases / Total weekly reported Occupied beds \*1000



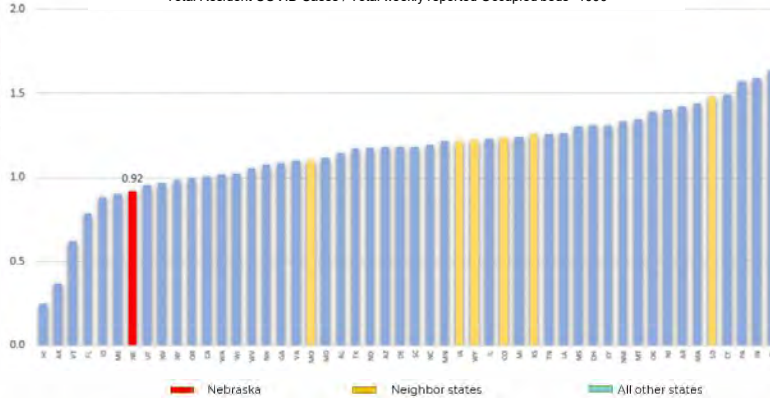
When compared to other states through July 24, 2022, Nebraska has the 7<sup>th</sup> lowest COVID-19 case rate for nursing home residents



Data Source: Publicly available data through CMS  
Helping People Live Better Lives.

## Nursing Home COVID-19 Death Rate During COVID-19 Pandemic

LTCF Resident COVID Deaths per 1000-Resident Week  
CMS Data Through July 24, 2022  
Total Resident COVID Cases / Total weekly reported Occupied beds \*1000



When compared to other states through July 24, 2022, Nebraska has the 7<sup>th</sup> lowest COVID-19 death rate for nursing home residents



Data Source: Publicly available data through CMS  
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## Expanding IPC Support to Nebraska LTCF (SNF and ALF)

- LTCF Strike Team Project (Partial cost reimbursement available for facilities meeting specific criteria)
  - Training a few LTCF staff in each facility on performing N-95 fit testing
  - Newly trained staff in each LTCF fit testing all their staff
  - Provision of fit testing equipment to each LTCF
  - Facilitating training of additional infection preventionists in each LTCF
  - Facilitating training of basic infection control champions (frontline staff)
  - Organizing virtual LTCF basic infection control champions meeting on regular interval
  
- Working with NICN to offer additional Basic IP training courses in the coming year

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## Additional ICAP initiatives for All Healthcare Settings

- Voluntary free infection control assessments for all healthcare settings upon request
- Infection preventionist mentoring program
- Individualized IPC training sessions for healthcare facilities staff through Project Firstline
- IPC office hours
- Social media outreach for infection control education of frontline healthcare workers
  - Facebook, LinkedIn, Twitter
  - Mouthy IP podcast
  - Dirty Drink podcast
  - Dental IPC bites (Newsletter)
  - Nebraska ASAP YouTube Channel

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## Various Ways to Contact HAI/AR Team

ICAP/ASAP office hours line: 402-552-2881

DHHS HAI/AR Program Director: 402-219-3115

<https://dhhs.ne.gov/Pages/HAI-Professional-Resources.aspx>

<https://icap.nebraskamed.com/>

<https://asap.nebraskamed.com/>

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## Final Thoughts...

- In many areas related to HAI/AR, Nebraska is either better or similar than the national average
- Collaborative efforts from all relevant stakeholders has been instrumental over the years
- Improvement opportunities exist in several areas (especially SSI, VAE, NHSN use, outpatient antibiotic prescribing)
- Additional data need to be collected in various areas to inform further improvement (e.g. CE implementation and antibiotic use in outpatient and LTC settings, impact of health disparities on HAI/AR)

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Thank You

Questions?

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[dhhs.ne.gov](https://dhhs.ne.gov)

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