Guidance and responses were provided based on information known on 10.09.25 and may become out of date. Guidance is being updated rapidly; users should look to CDC and NE DHHS guidance for updates.

NEBRASKA
Good Life. Great Mission.
DEPT. OF HEALTH AND HUMAN SERVICES

Long Term Care Webinar Series

October 9, 2025

NE ICAP

NEBRASKA INFECTION CONTROL ASSESSMENT AND PROMOTION PROGRAM

Presentation Information

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Moderated by Marissa Chaney — machaney@nebraskamed.com

- Slides and a recording of this presentation will be available on the ICAP website: https://icap.nebraskamed.com/events/webinar-archive/

- Use the Q&A box in the webinar platform to type a question. Questions will be read aloud by the moderator. If your question is not answered during the webinar, please either e-mail NE ICAP or call during our office hours to speak with one of our IPs.

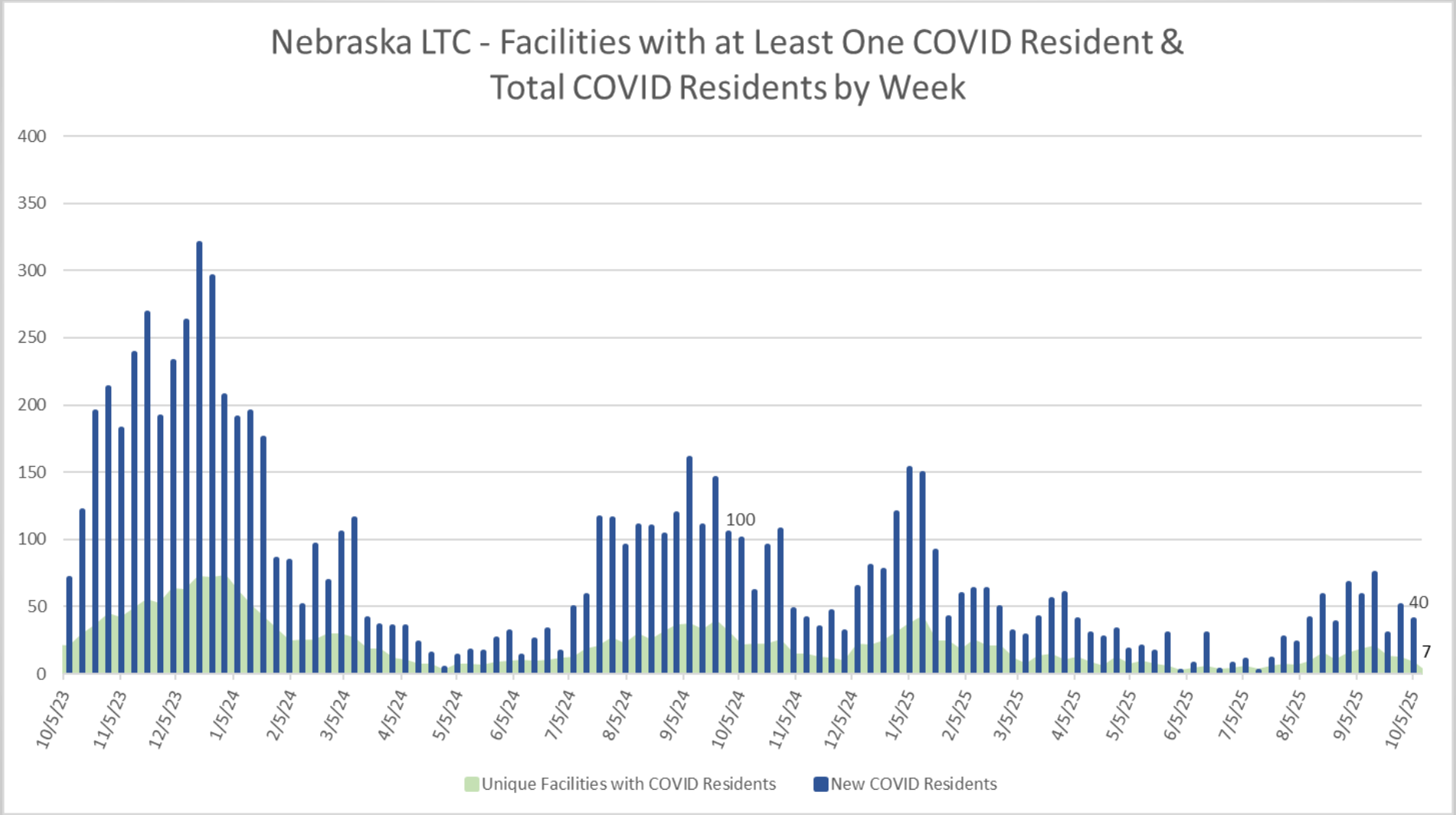
Continuing Education Disclosures

- 1.0 Nursing Contact Hour is awarded for the LIVE viewing of this webinar
- In order to obtain the nursing contact hour, you must attend the entire live activity and complete the post webinar survey
- No relevant financial relationships were identified for any member of the planning committee or any presenter/author of the program content
- This CE is hosted Nebraska ICAP along with Nebraska DHHS
- Nebraska Infection Control Assessment and Promotion Program is approved as a provider of nursing continuing professional development by the VTL Center for Professional Development, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation

Communicable Illness Update

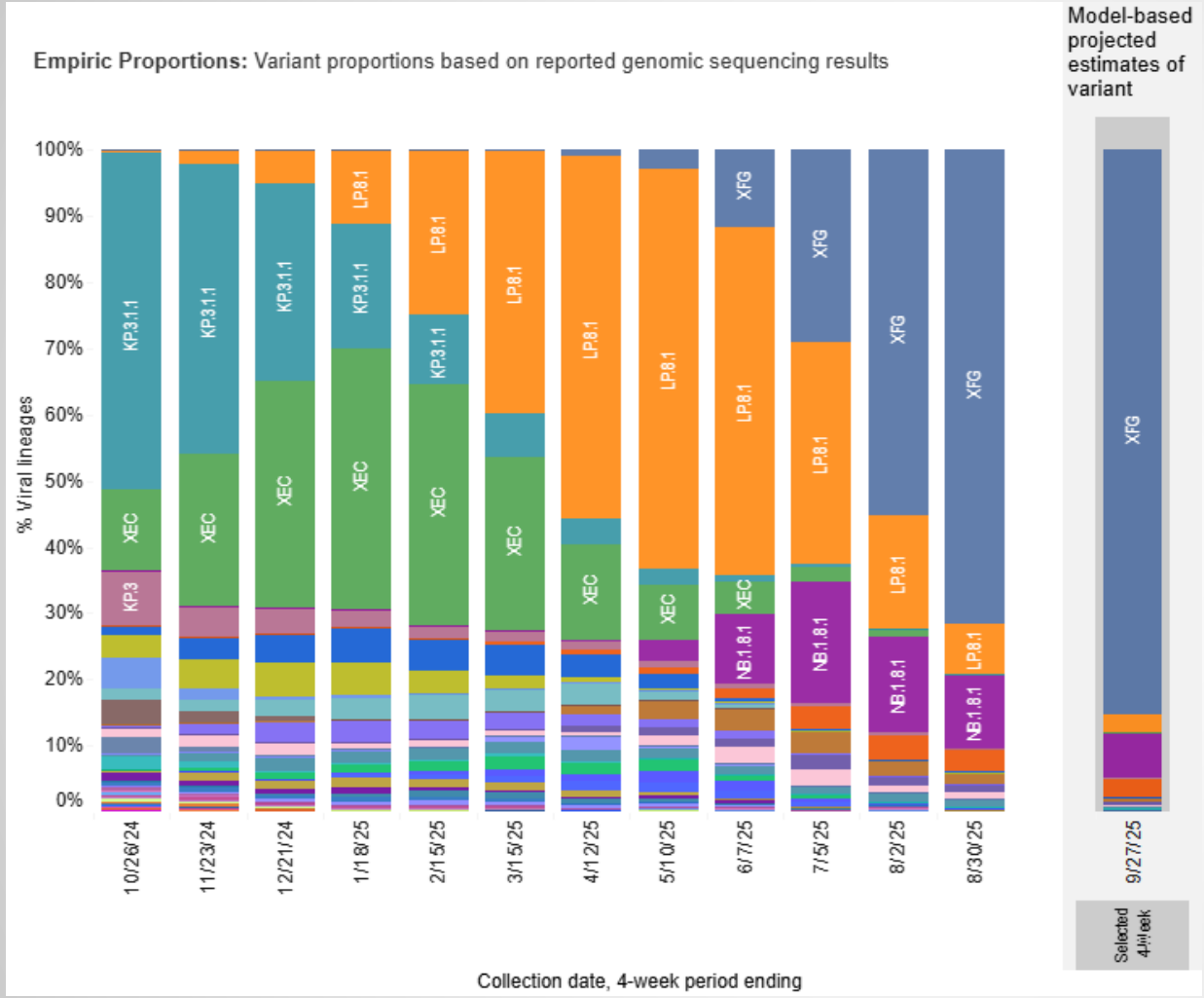
NE ICAP

Nebraska LTC Facility COVID-19 Outbreaks



**Updated: 10/6/2025
Source: Unofficial Counts Compiled by Nebraska ICAP based on data reported by facilities and DHHS; Actual numbers may vary.

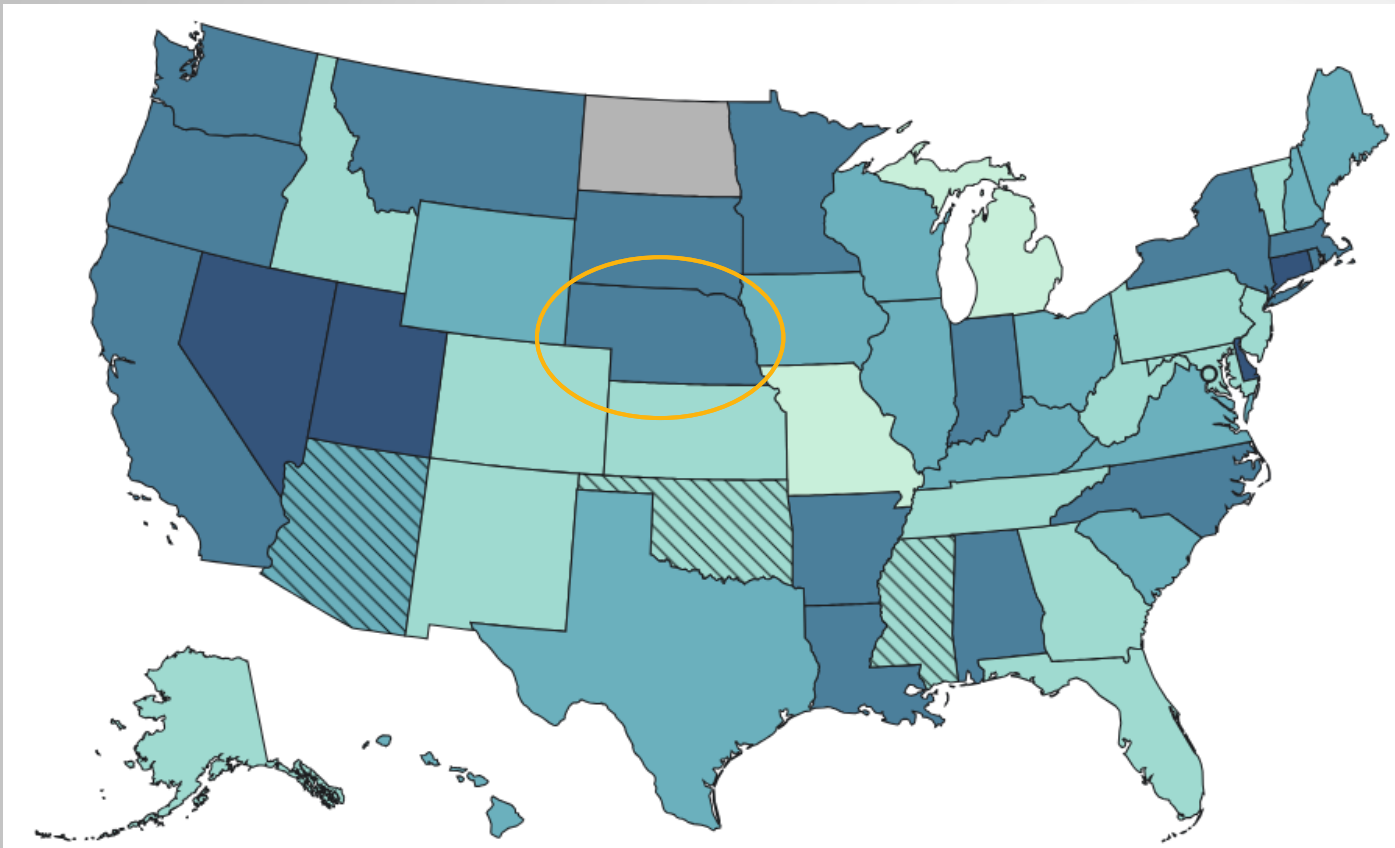
Nowcast Estimates in U.S. for 9/29/25 - 9/27/25



Lineage[#]	Share	95%PI/CI
XFG	85%	78–91%
NB.1.8.1	7%	5–10%
NW.1	3%	2–5%
LP.8.1	3%	1–8%
LF.7	1%	0–2%
XFC	1%	0–1%
LF.7.9	0%	0–1%

[Variants and Genomic Surveillance | COVID-19 | CDC]

COVID Wastewater Surveillance



SARS-CoV-2 Wastewater Viral Activity Levels

Select a level to add or remove from map.

Very High | High | Moderate | Low | Very Low | No Data | *Limited Coverage

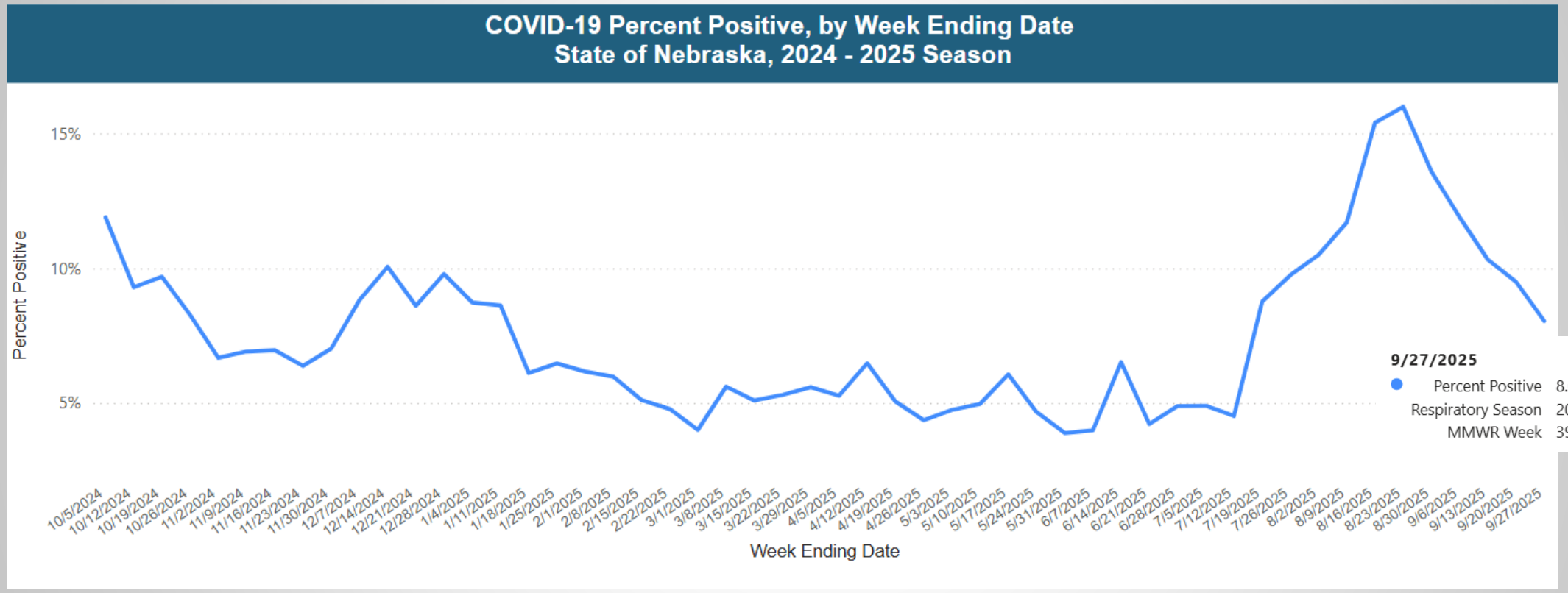
September 14, 2025 - September 20, 2025

MODERATE

Nationally, the wastewater viral activity level for COVID-19 is currently **moderate**.

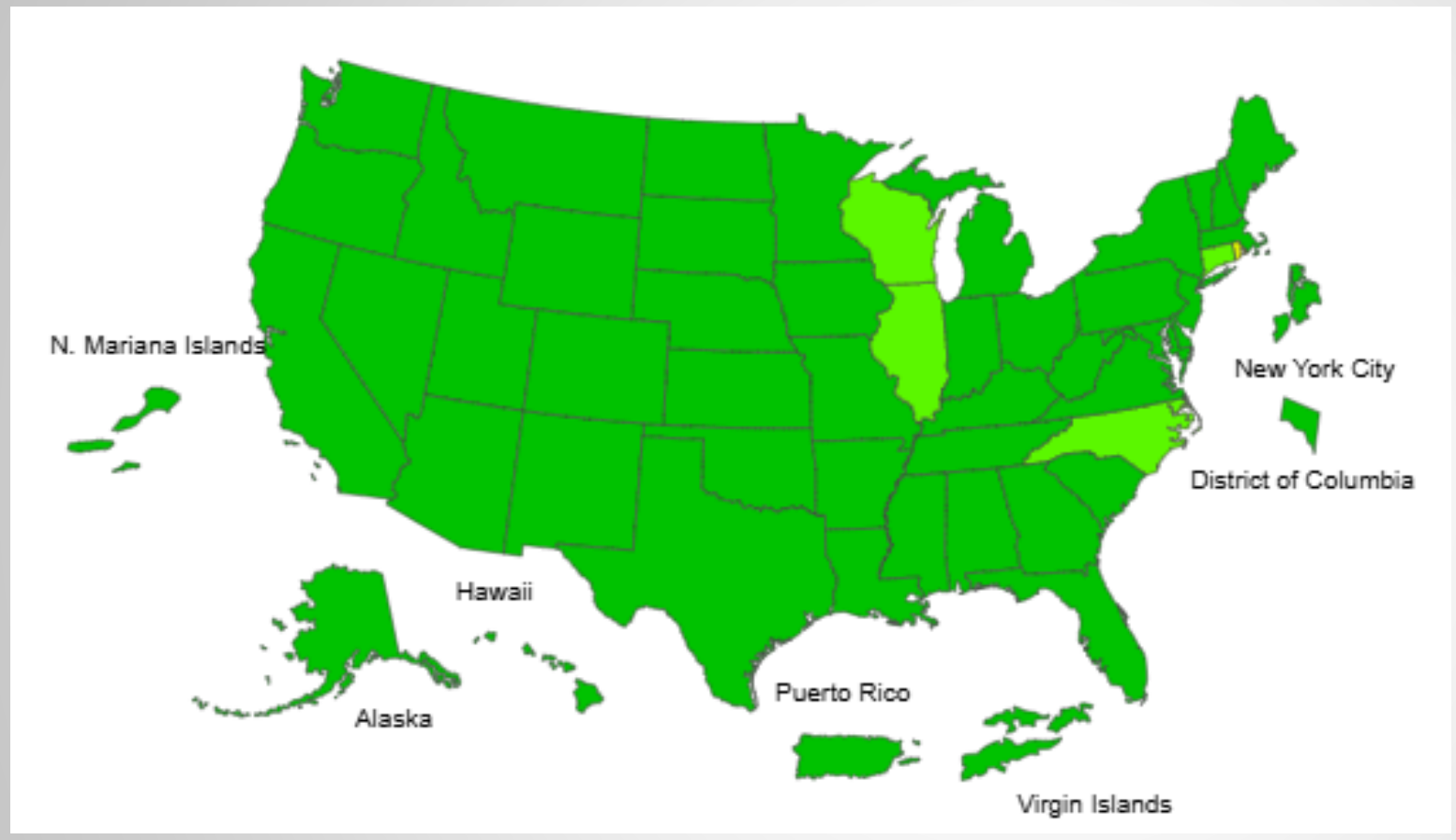
[COVID-19 Wastewater Data – National Trends | NWSS | CDC]

NE DHHS Respiratory Disease Surveillance Report



https://dhhs.ne.gov/Pages/Seasonal-Respiratory-Diseases.aspx

Weekly US Flu Activity Map – Date ending 9/20/25



[Weekly US Map: Influenza Summary Update | CDC]

COVID-19 Vaccination 2025-2026 Season

Aug. 27, 2025, FDA approved the updated 2025-2026 COVID-19 vaccines and rescinded Emergency Use Authorizations (EUA) for previously authorized COVID-19 vaccines.

Manufacturer	Vaccine	FDA Approved Indication	Adult Dosing
Moderna	**SPIKEVAX** (mRNA)	65 years of age or older, or 6 mos. through 64 yrs with at least 1 high-risk conditions	Available in a pre-filled syringe formulation. Single dose, 0.5 mL If previously vaccinated, administer >2 months after the last dose of COVID-19 vaccine.
	MNEXSPIKE (mRNA)	**Previously vaccinated with any COVID-19 vaccine and:** 65 years of age or older, or 12 years through 64 yrs with at least 1 high-risk conditions	Available in a pre-filled syringe formulation. Single dose, 0.2 mL If previously vaccinated, administer >3 months after the last dose of COVID-19 vaccine.
Pfizer-BioNTech	**COMIRNATY** (mRNA)	65 years of age or older, or 5 years through 64 years with at least 1 high-risk condition	Available in single dose vials and pre-filled syringe formulation. Single dose, 0.3 mL If previously vaccinated, administer >2 months after the last dose of COVID-19 vaccine.
Novavax	**NUVAXOVID** (Protein-based vaccine)	65 years of age or older, or 12 yrs through 64 yrs with at least 1 high-risk conditions	Available in a pre-filled syringe formulation. Single dose, 0.5 mL If previously vaccinated, administer >2 months after the last dose of COVID-19 vaccine.

10/6/25 CDC NEWS RELEASE RELATED TO COVID-19 VACCINE: CDC ADOPTS INDIVIDUAL-BASED DECISION MAKING FOR INDIVIDUALS 6 MONTHS & OLDER(excerpt)

ACIP's recommendation emphasized that the risk-benefit of vaccination in individuals under age 65 is most favorable for those who are at an increased risk for severe COVID-19 and lowest for individuals who are not at an increased risk, according to the CDC list of COVID-19 risk factors. The U.S. Food and Drug Administration has approved marketing authorization for COVID-19 vaccines for individuals who have one or more of these risk factors, as well as for individuals age 65 and older.

Individual-based decision-making is referred to on the CDC's immunization schedules as vaccination based on shared clinical decision-making, which references providers including physicians, nurses, and pharmacists. It means that the clinical decision to vaccinate should be based on patient characteristics that unlike age are difficult to incorporate in recommendations, including risk factors for the underlying disease as well as the characteristics of the vaccine itself and the best available evidence of who may benefit from vaccination.

https://www.cdc.gov/media/releases/2025/cdc-immunization-schedule-adopts-individual-based-decision.html

COVID-19

EXPLORE THIS TOPIC

SEARCH

Ages 19 Years or Older

Legend

- Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity
- Recommended vaccination for adults with an additional risk factor or another indication
- Recommended vaccination based on shared clinical decision-making
- No Guidance/Not Applicable

Vaccine	19-26 years	27-49 years	50-64 years	≥65 years
COVID-19	1 or more doses of 2025–2026 vaccine (See Notes)			2 or more doses of 2025-2026 vaccine (See Notes)
Influenza inactivated (IIV3, ccIIV3) Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy. (See Notes)		60 through 74 years (See Notes)	≥75 years

CDC Adult Immunization Schedule
https://www.cdc.gov/vaccines/hcp/imz-schedules/downloads/adult/adult-combined-schedule.pdf

CDC Underlying Conditions and Higher Risk for Severe COVID-19
https://www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html

ACIP Shared Clinical Decision Making
https://www.cdc.gov/acip/vaccine-recommendations/shared-clinical-decision-making.html

COVID–19 vaccination

Shared clinical decision-making

Vaccination based on individual-based decision-making—with an emphasis that the risk-benefit of vaccination is most favorable for individuals who are at an increased risk for severe COVID-19 disease and lowest for individuals who are not at an increased risk according to the CDC list of COVID-19 risk factors (see www.cdc.gov/covid/hcp/clinical-care/underlying-conditions.html). For additional information on shared clinical decision-making, see www.cdc.gov/acip/vaccine-recommendations/shared-clinical-decision-making.html

Current COVID-19 schedule and dosage formulation available at www.cdc.gov/covidschedule.

Administer an age-appropriate COVID-19 vaccine product for each dose. There is no preferential recommendation for the use of one COVID-19 vaccine over another when more than one recommended age-appropriate vaccine is available.

CRE and CP-CRE Definitions

Carbapenem-resistant Enterobacterales (CRE)

Previously known as Enterobacteriaceae

Enterobacterales: an order of bacteria commonly found in people's gastrointestinal tract that can cause infections both in healthcare and community settings

Organisms include E. Coli, Klebsiella, and Citrobacter.

Gram-negative bacilli that are resistant to at least one of the carbapenem antibiotics:

- ertapenem
- meropenem
- doripenem
- Imipenem

Carbapenemase-Producing Carbapenem-resistant Enterobacterales (CP-CRE)

A subset of CRE which are primarily responsible for the rapid global spread of CRE, including in U.S. Healthcare Settings.

Enzymes that inactivate carbapenems or other beta-lactam antibiotics

Can share the genetic code for carbapenemases with other bacteria, rapidly spreading resistance.

Multidrug-Resistant Organisms (MDRO) Tiers for Nebraska

Tier	Definition of Included Organisms and Mechanisms	Examples (not all inclusive) of organisms/mechanisms for Nebraska	Transmission-Based Precautions Recommendations
Tier 1	Never (or very rarely) been identified in the United States and for which experience is extremely limited	Novel Carbapenemases	Contact precautions until otherwise recommended by HAI/AR team
Tier 2	Primarily associated with healthcare settings and are not commonly identified in the region (i.e., not been previously identified in the region or have been limited to sporadic cases or small outbreaks), corresponding to "not detected" or "limited to moderate spread" epidemiologic stages. No current treatment options exist (pan not-susceptible) and potential to spread more widely.	Pan-resistant organisms* *Candida auris* Carbapenemase (e.g., KPC, NDM, OXA-48, VIM, IMP) producing organisms (CPO) • Enterobacterales • *Pseudomonas aeruginosa* • *Acinetobacter Baumannii*	Contact Precautions *Long-term Care Facilities (LTCF):* Enhanced barrier precautions (EBP) recommended for colonized resident(s)**
Tier 3	Include MDROs targeted by the facility or region for epidemiologic importance that have been identified frequently across a region, indicating advanced spread, but are not considered endemic	• Extended spectrum beta-lactamase (ESBL) producing organisms • Carbapenem-resistant *Enterobacterales* (CRE) • Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) • Carbapenem-resistant *Acinetobacter Baumannii* (CRAB)	Contact Precautions *Long-term Care Facilities (LTCF):* Enhanced barrier precautions (EBP) considered for colonized resident(s)**
Tier 4	Endemic in a region and have been targeted by public health for their clinical significance and potential to spread rapidly	• Methicillin-resistant Staphylococcus aureus (MRSA) • Vancomycin-resistant Enterococci (VRE)	Contact precautions per facility risk assessment *Long-term Care Facilities (LTCF):* Enhanced barrier precautions (EBP) considered for colonized resident(s)**

* Contact tracing and colonization screening may not be indicated for these organisms
**Contact precautions for acute/active infections or uncontained drainage/secretions

Reviewed and Updated 8.21.2025 by HAI/AR Advisory Council MDRO Subcommittee

Available at:
https://dhhs.ne.gov/HAI%20Documents/Nebraska%20MDRO%20Tiers.pdf

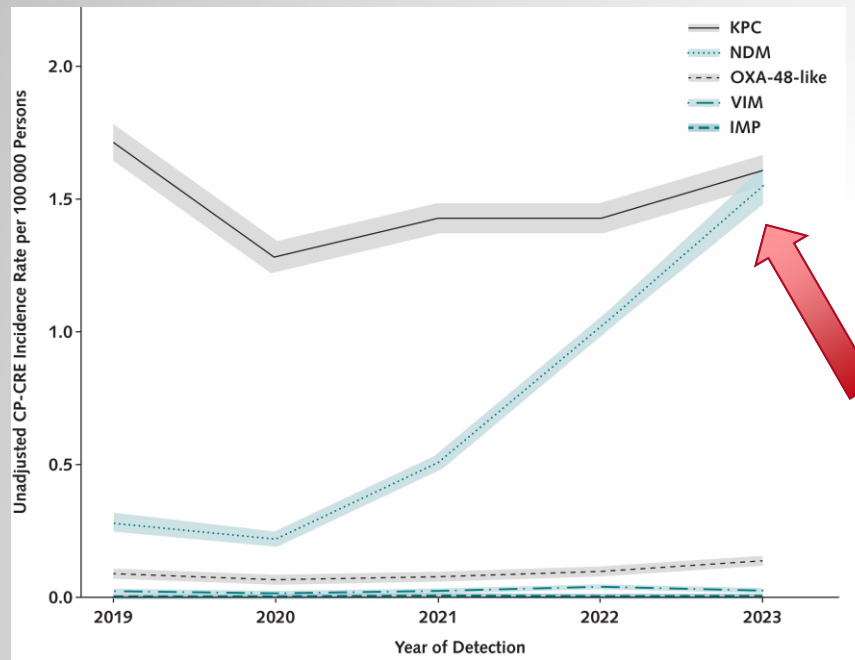
NE ICAP

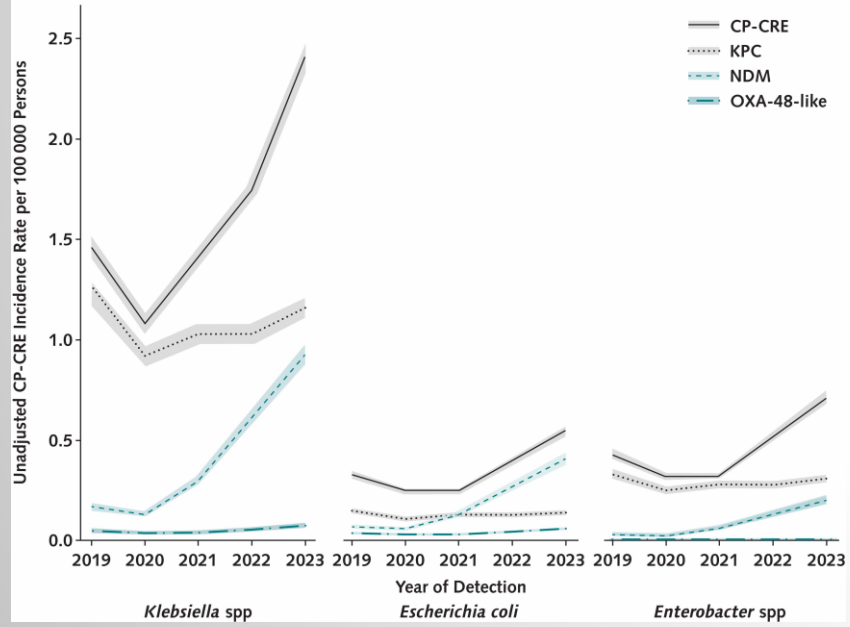
Increases in NDM-CRE

- **New CDC Report Warns of Increases in NDM-CRE, Urges Healthcare Provider Awareness and Testing** — Through CDC's Antimicrobial Resistance Laboratory Network, CDC experts have detected a substantial rise in carbapenem-resistant Enterobacterales (CRE) producing the New Delhi metallo-β-lactamase (NDM) carbapenemase.
- These increases in carbapenemase-producing-CRE (CP-CRE) and NDM-CRE threaten to reverse years of stable or declining CRE rates and are particularly concerning due to the limited treatment options for CRE infections involving these resistance mechanisms.

ARLabNetwork

Photo credit: https://www.cdc.gov/cre/about/index.html





Increases in NDM-CRE

- A CDC paper recently published in the *Annals of Internal Medicine* describes the changes in carbapenemase genes in CRE isolates from 2019 to 2023. Findings include:
  - In a cohort of 29 U.S. states with mandated submission of CRE isolates, the incidence of CP-CRE isolates from clinical cultures increased dramatically overall between 2019 and 2023.
  - The increased incidence was primarily driven by a **five-fold increase** in the incidence of NDM-CRE and a smaller increase in OXA-48-like-CRE.
  - Preliminary data from 2024 indicate NDM-CRE remained at or above 2023 levels.

CP-CRE Resources and References

- To increase timely detection, guide treatment, and prevent the spread of CRE, healthcare providers should:

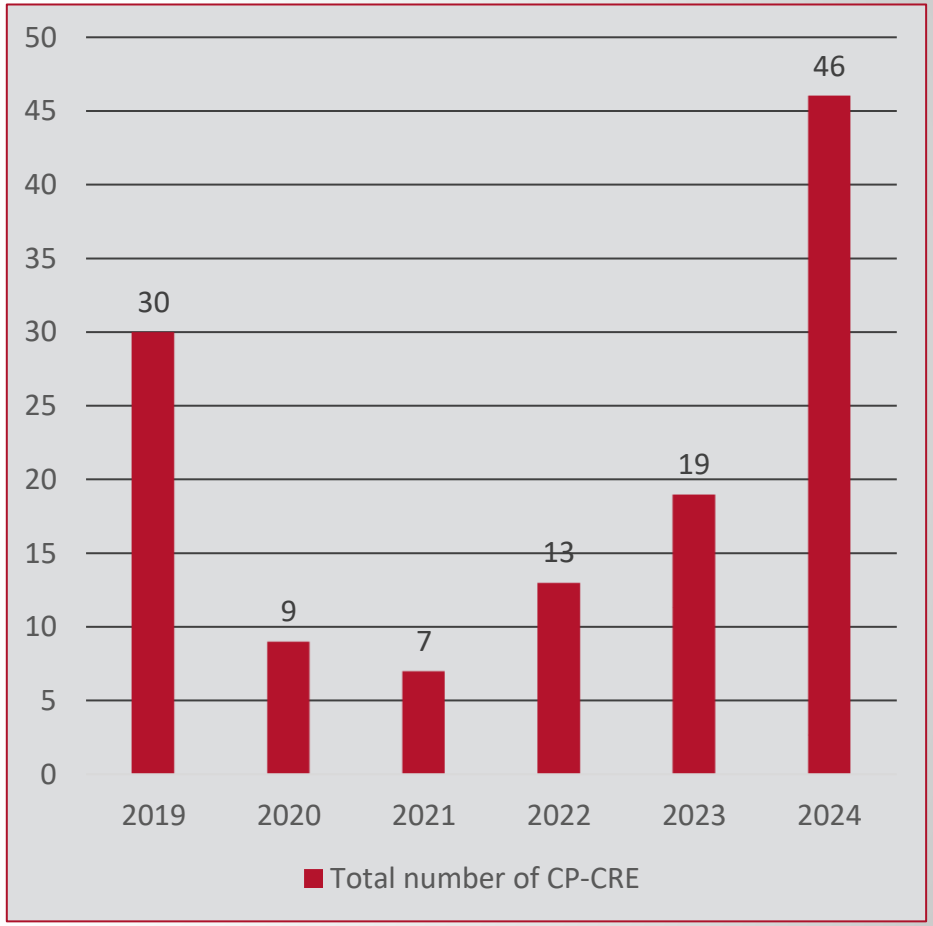
Recommendation	Nebraska Resources and References
Understand if their clinical laboratories have the testing capabilities to identify different carbapenemase genes or access testing through their public health laboratory.	Nebraska Public Health Lab (NPHL) NPHL CRE/CRPA/CRAB Supplemental Form
Consult with their Healthcare-associated Infections and Antimicrobial Resistance (HAI/AR) Program to understand local CRE resistance mechanisms in their area.	Nebraska Healthcare-Associated Infections and Antimicrobial Resistance Program Nebraska ICAP Nebraska ASAP
Implement infection prevention and control measures effective in preventing CRE.	Carbapenem-resistant Enterobacterales (CRE) Infection Control CP-CRE Fact Sheet for Patients and Families Screening FAQs for Verbal Consent Infection Prevention CPCRE Multi-Drug-Resistant Organism (MDRO) Cheat Sheet for Infection Preventionists
Reporting CP-CRE to Nebraska DHHS.	Reportable Disease per **Title 173 Communicable Diseases** • Should be reported via electronic lab reporting (if available) • If ELR is not set up, can report via phone call, email, fax, or through **Report HAI/AR-related event/clusters or organism(s)**

Carbapenemase Genes Identified in Enterobacterales Isolates, Nebraska: 2019-2024

Year	KPC	NDM	OXA-48	OXA-181	VIM	IMP
2019	18	9	0	3	0	0
2020	8	0	1	0	0	0
2021	6	0	1	0	0	0
2022	8	3	1	0	1	0
2023	7	6	4	2	0	0
2024	26	14	5	0	0	1
2025 to date	21	3	2	1	0	0

Notes:

- KPC in 2024 included twelve KPC-2, two KPC-3, four KPC-4, and one KPC-6
  - KPC variants not identified for the rest
- CP-CRPA and CP-CRAB are rarely identified
  - In 2024- 1 CP CRPA (NDM) has been reported in addition to 4 CP-CRAB (1 NDM and 3 OXA-24)



US Antibiotic Awareness Week

Jenna Preusker, PharmD, BCPS, BCIDP
ASAP Pharmacy Coordinator

NE ASAP

U.S. Antibiotic Awareness Week (USAAW) is November 18-24, 2025

USAAW raises awareness of the importance of appropriate antibiotic and antifungal use and the threat antimicrobial resistance poses to people, animal, plants, and their shared environment.

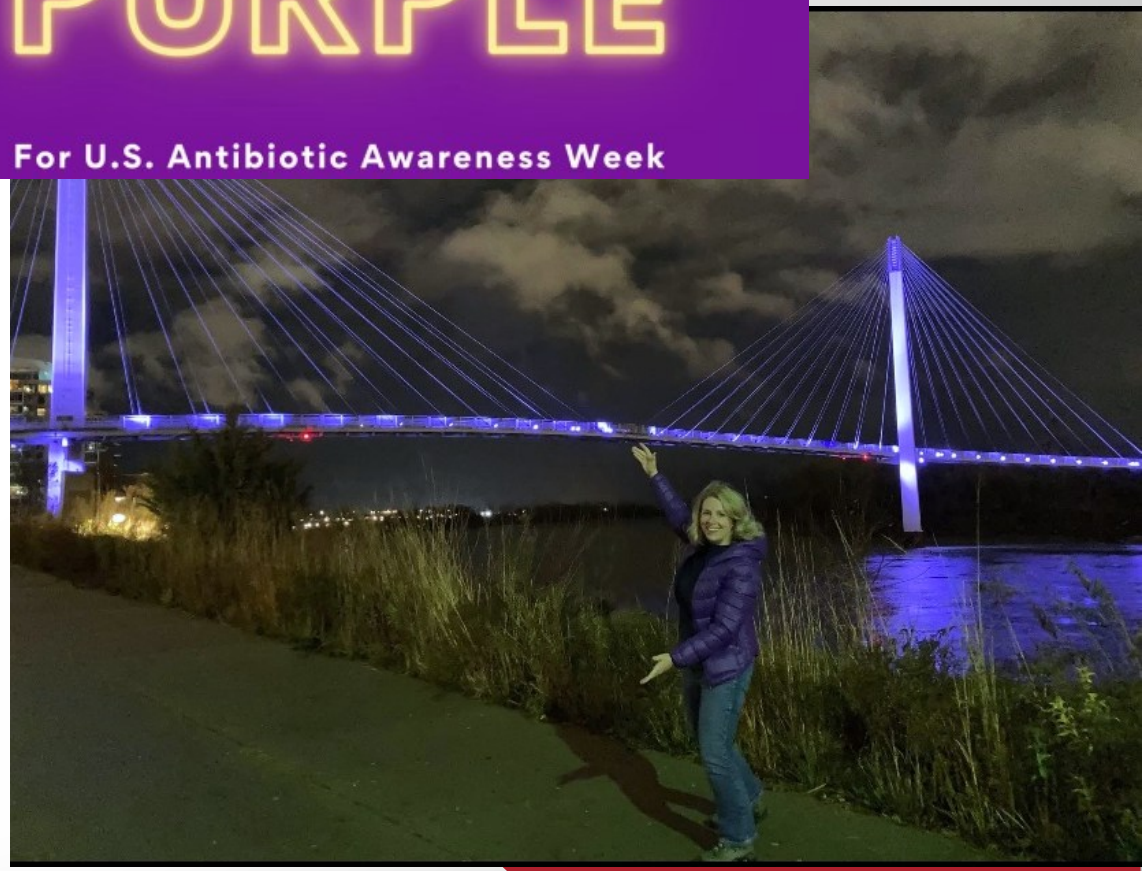
[U.S. Antibiotic Awareness Week (USAAW) | Antimicrobial Resistance | CDC]

How can our facility participate?

- Provide staff education during in-services or monthly staff meetings
- Bug question trivia with prizes
- Computer screensavers
- Posting flyers throughout the facility
- Promote on internal websites/intranet
- Set up a table with posters/flyers in lobbies, lounge areas, dining areas, or other highly visited locations to target staff, residents, and family members
- Distribute USAWW stickers for staff to wear
- Create short videos for social media/local news outlets
- Digital street signage
- Newsletter articles
- Highlight recent accomplishments of the antibiotic stewardship team
- Promote current stewardship initiatives

More ideas and resources:

U.S. Antibiotic Awareness Week (USAAW) Toolkit

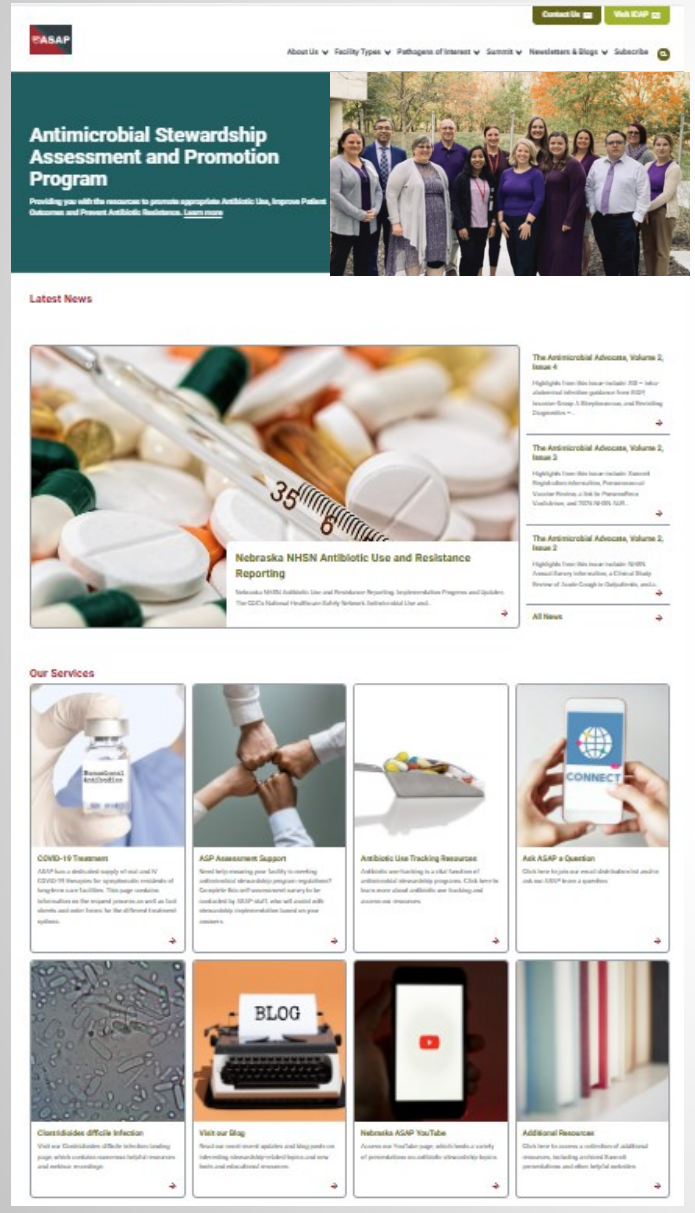


Nebraska ASAP and CDC invite families, friends, organizations, and communities to shine a spotlight on antimicrobial resistance by participating in Go Purple for USAAW.

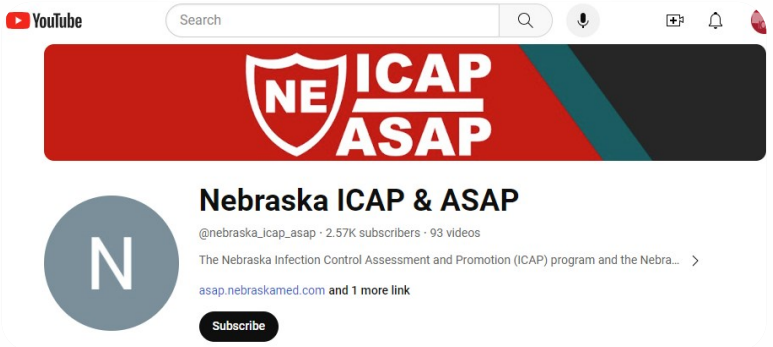
This nationwide effort encourages individuals to wear purple and bring purple to their social media and invites organizations, healthcare facilities to bring awareness to the role everyone has in combating antimicrobial resistance.

ASAP Website

https://asap.nebraskamed.com/



ICAP/ASAP YouTube channel



Nebraska ICAP & ASAP - YouTube

ICAP/ASAP Social Media

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NE ASAP

Nebraska ASAP Newsletter: *The Antimicrobial Advocate*

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Fighting Antimicrobial Resistance Takes All of Us

U.S. Antibiotic Awareness Week | November 18-24, 2025

Be Antibiotics Aware: Utilization of Antibiograms

NE ASAP

What are antibiograms?

- Antibiograms provide a **summary of antibiotic susceptibility** for a population of patients
- Antibiograms reflect **aggregate results** from many individual microorganism-drug susceptibility tests.
- Aggregate susceptibility profiles are reported on an antibiogram as the percent of tests in which a specific microorganism (e.g., *E. coli*) was **susceptible** to a specific antimicrobial drug.
- They can be compiled at the level of a clinic, hospital, health system, long-term care facility, region, or state.

What do antibiograms look like?

The number of isolates included will be listed next to the organism name

Organisms included are listed

Antibiotics are typically listed across the top and sorted by drug class

	Total_Isolates	Ampicillin	Ampicillin_Sulbactam	Amoxicillin_Clavulanate	Piperacillin_Tazobactam	Cefazolin	Cefuroxime	Cefoxitin	Ceftriaxone	Ceftazidime	Cefepime	Ceftolozane_Tazobactam	Ertapenem	Meropenem	Gentamicin	Tobramycin	Levofloxacin	Trimethoprim_Sulfa	Nitrofurantoin	Tetracycline
Escherichia coli	28,03	59.5% (27964)	58.3% (19662)	83.3% (12080)	93.4% (20344)	86.5% (18489)	83% (10104)	90.4% (8924)	93.9% (26507)	99.2% (12302)	92.7% (18114)	99.5% (8724)	99.9% (14922)	99.9% (13252)	92.9% (27519)	89.5% (14926)	81.3% (25342)	79.6% (27890)	97.3% (25845)	78% (9468)
Acinetobacter baumannii	53	R	96.2% (52)	R		R	R	R		85.4% (41)	96.9% (32)		R	100% (31)	95.1% (41)	100% (42)	95.5% (44)	97.5% (40)	R	95.5% (22)
Citrobacter freundii	720	R	R	R	90.6% (563)	R	R	R	79.6% (540)	93.5% (431)	98.3% (699)		97.7% (486)	99.2% (476)	94.7% (719)	93.5% (508)	91.2% (692)	86.8% (638)	93.7% (663)	82.7% (398)
Citrobacter koseri	558	R	98.5% (264)	98.8% (342)	99.4% (532)	96.2% (397)	89.9% (287)	96.7% (241)	98.9% (524)	99.3% (297)	99.7% (399)	99.3% (151)	100% (382)	100% (359)	99.8% (556)	100% (353)	99.4% (534)	99.2% (512)	76.8% (495)	98.2% (281)
Enterobacter cloaca	1,255	R	R	R	83.3%	R	R	R	69.8%	79%	95.2%		90.2%	99.6%	98.1%	97.1%	95.1%	91.5%	32%	89.9%

Blank spaces indicate the drug is not tested for that bug

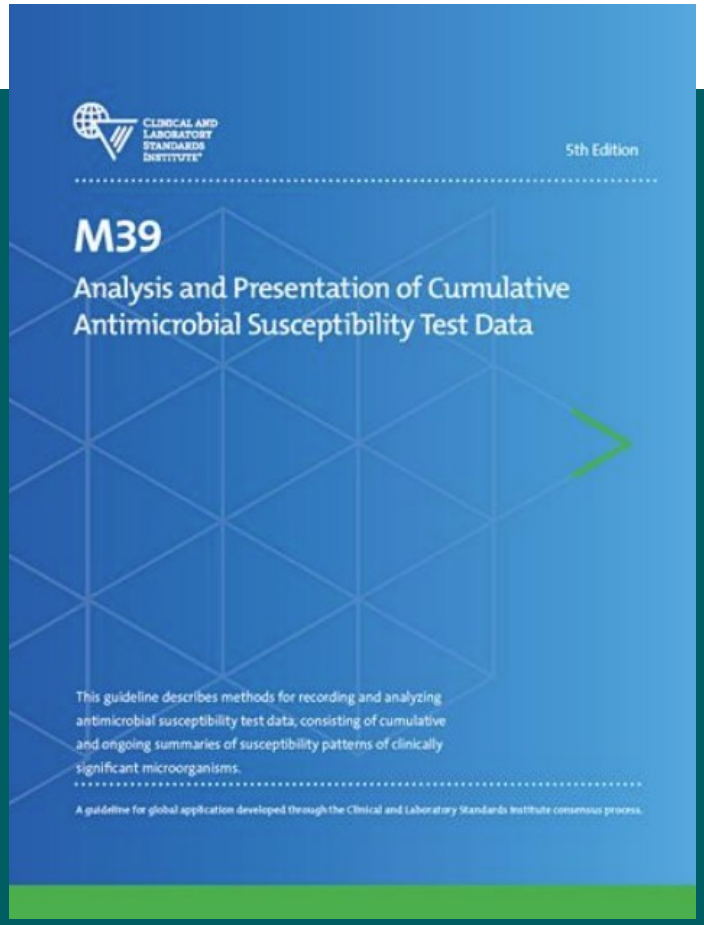
"R" indicates the bug is intrinsically (naturally) resistant to that drug

Additional footnotes are usually included and can be very important!

How are antibiograms made?

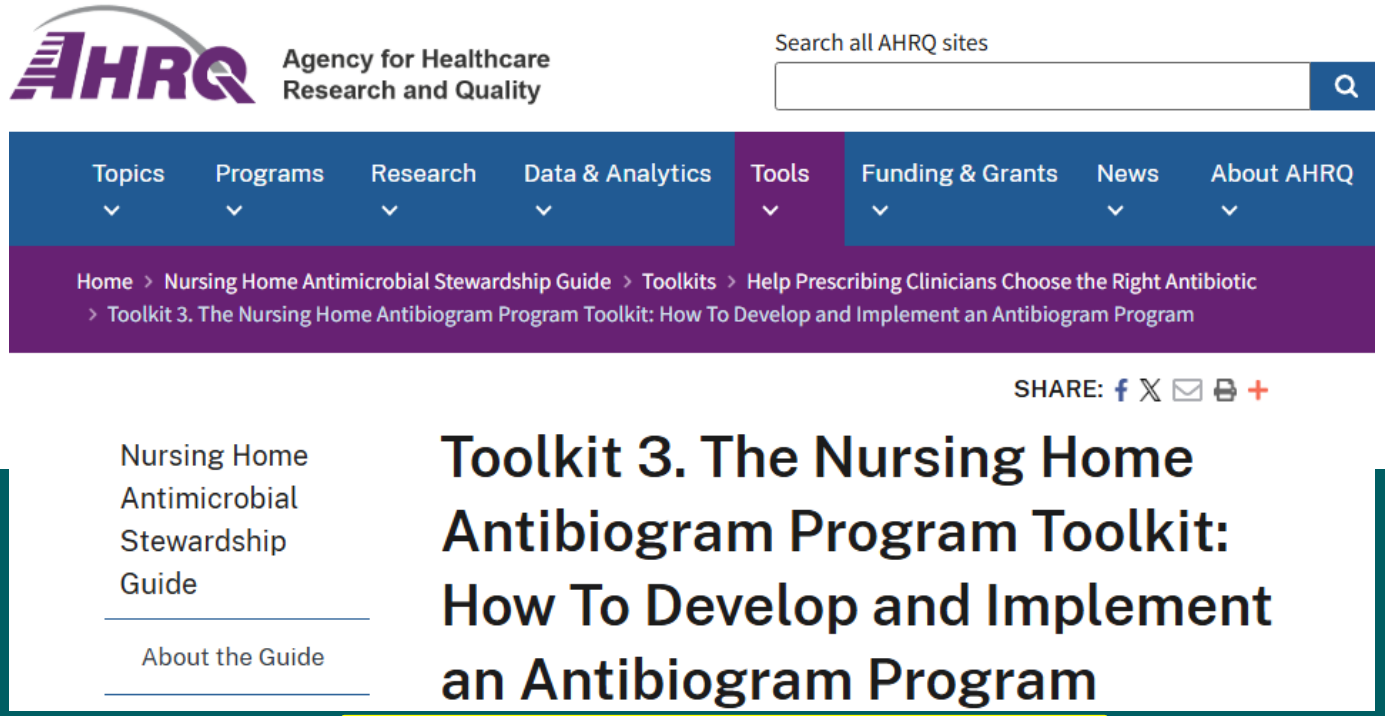
The Clinical and Laboratory Standards Institute (CLSI) publishes the guidelines, “Analysis and Presentation of Cumulative Antimicrobial Susceptibility Test Data.”

Typically, the microbiology laboratory, pharmacy, physicians, and infection preventionists work together in a facility to compile and review the data



- **Compile the antibiogram at least annually**
- **Include only organisms for which >30 isolates were tested in the period analyzed**
- **Include only the first isolate of a given bacterial species per patient in each antibiogram period**
- **Include only finalized clinical cultures (not surveillance cultures)**

AHRQ Nursing Home Antibiogram Toolkit



Link: Toolkit 3. The Nursing Home Antibiogram Program Toolkit: AHRQ

Assessment/Planning Tools
(Fact Sheets, Timeline, Checklist for discussion with providers)

Development Tools
(Sample Letter of Agreement, Sample Data request from micro lab, Excel workbook)

Implementation Tools
(Sample policy and procedure, Training fact sheets and slides including sample cases and discussion questions, Pocket Card Templates, Email Templates)

Monitoring Tools
(Antibiotic Use Tracking Sheets, Feedback Survey)

How are antibiograms used?

CLINICAL

- ✓ Choosing therapy for a patient before culture results are available
- ✓ Updating empiric antibiotic treatment protocols
- ✓ Reviewing prescribing practices

EPIDEMIOLOGIC

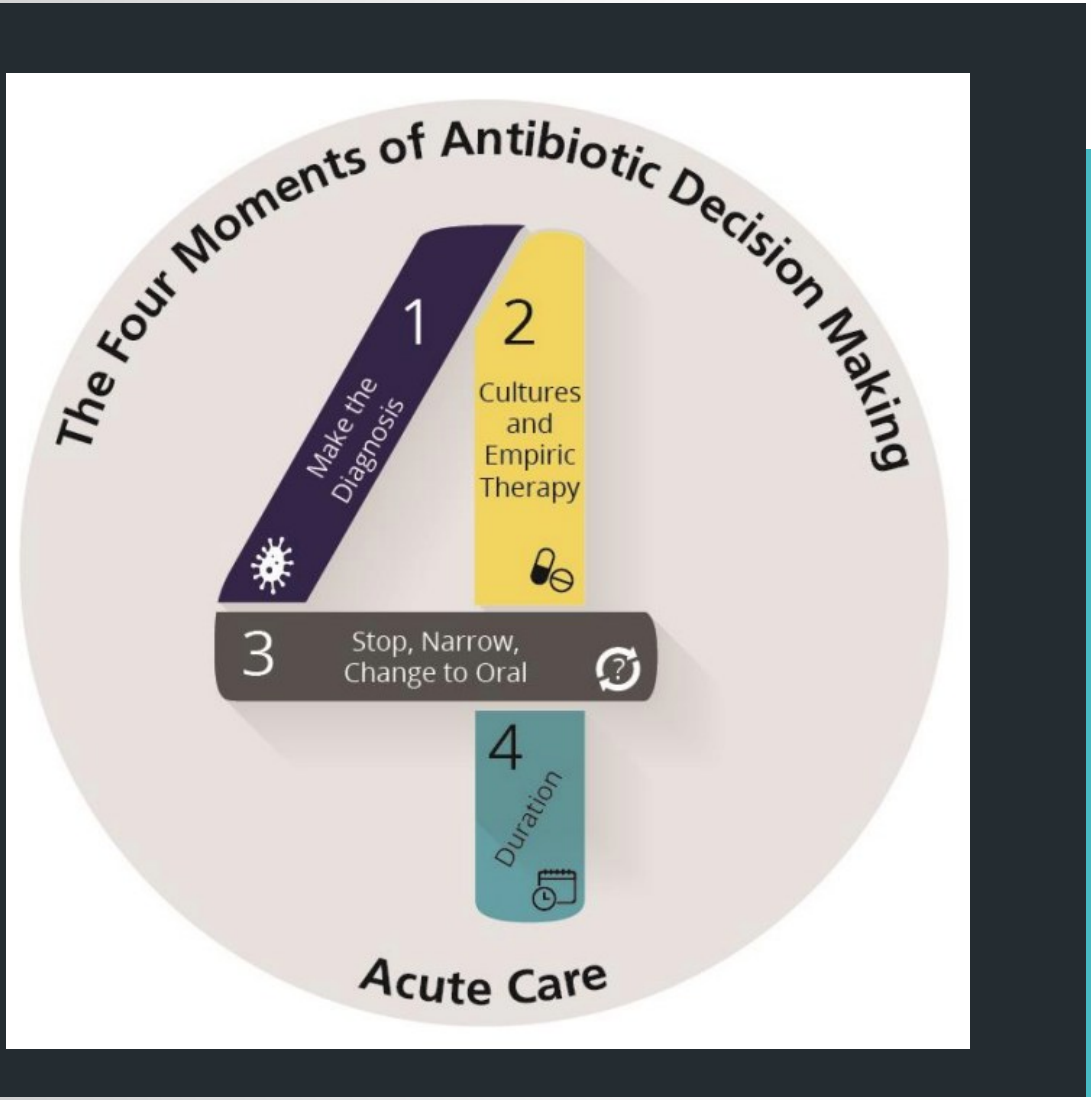
- ✓ Identify trends in antimicrobial resistance
- ✓ Detect emerging resistance threats
- ✓ Compare susceptibility rates across regions

Clinical Use of Antibiograms

NE ICAP

Choosing therapy for a patient before culture results are available

Four Moments of Antibiotic Decision Making | AHRQ



- **Moment 1** "Does my patient have an infection that requires antibiotics?"
- **Moment 2** "Have I ordered appropriate cultures before starting antibiotics? **What empiric therapy should I initiate?**"
- **Moment 3** "Can I stop antibiotics? Can I narrow therapy? Can I change from IV to oral therapy?"
- **Moment 4** "What duration of antibiotic therapy is needed for my patient's diagnosis?"

Make Antibiogram Data Available to Clinicians

- **Embedded in the EHR system**
  - Display local susceptibility data on antibiotic order screens.
- **Nursing Home Intranet**
  - Post the most recent antibiogram as a PDF or interactive dashboard.
  - Include links to guidance documents or empiric therapy recommendations.
- **Mobile Applications or Stewardship Tools**
  - Use stewardship apps (e.g., Firstline, Sanford Guide Enterprise, Epocrates, Unbound Medicine)
- **Pocket Cards/Laminated Quick-Reference Sheets**
  - Distribute to clinicians, pharmacists, and nursing units.
  - Include most common pathogens and recommended empiric choices.
- **Posters or Wall Displays**
  - Hang in physician workrooms

Facility Treatment Guidance

Most national guidelines for infectious diseases give multiple options for first-line antibiotics, knowing that resistance varies geographically.

IDSA UTI Treatment Guidance

Drug (dosage)
Nitrofurantoin monohydrate/ macrocrystals (100 mg twice daily for 5–7 days)
Trimethoprim-sulfamethoxazole (160/800 mg twice daily for 3 days)
Fosfomycin trometamol (3 g single-dose sachet)
Pivmecillinam (400 mg twice daily for 3–7 days)
Fluoroquinolones (dose varies by agent; 3–day regimen)[c]
β-lactams (dose varies by agent; 3–5 day regimen)[d]

So, how do providers know which of these options to choose?

Facility Treatment Guidance

Antibiotic stewardship programs write guidance at the facility level for prescribers based on local resistance patterns found on their antibiograms and other factors, such as patient cost, and drug adverse effect profiles.

	Total_Isolates	Ampicillin	Ampicillin_Sulbactam	Amoxicillin_Clavulanate	Piperacillin_Tazobactam	Cefazolin	Cefuroxime	Cefoxitin	Ceftriaxone	Ceftazidime	Cefepime	Ceftolozane_Tazobactam	Ertapenem	Meropenem	Gentamicin	Tobramycin	Levofloxacin	Trimethoprim_Sulfa	Nitrofurantoin	Tetracycline
Acinetobacter baumannii	17*	R	94.1% (17)	R		R	R	R		100% (10)	100% (11)		R	100% (9)	91.7% (12)	100% (15)	83.3% (12)	100% (17)	R	88.9% (9)
Citrobacter freundii	166	R	R	R	86.6% (164)	R	R	R	77.4% (124)	91.9% (123)	98.2% (165)		96.8% (126)	99.2% (124)	93.4% (166)	92.1% (126)	90.9% (165)	86.1% (166)	91.4% (152)	84.6% (123)
Citrobacter koseri	180	R	97.2% (109)	100% (119)	100% (175)	96.8% (125)	91% (122)	96.3% (108)	100% (179)	100% (109)	99.2% (122)	98.1% (54)	100% (118)	100% (118)	100% (178)	100% (119)	100% (174)	99.4% (180)	69.7% (155)	96.6% (116)
Escherichia coli	7884	56.4% (7871)	50.1% (4991)	82.8% (3380)	91.6% (5065)	88.4% (3637)	83.1% (3585)	89.8% (3105)	92.5% (7841)	99.8% (3130)	86.8% (3945)	99.4% (3103)	99.8% (3439)	99.9% (3120)	92.2% (7584)	85.4% (3754)	81.2% (7363)	77.9% (7849)	97% (7024)	77% (3110)
Haemophilus	17*	70.6%		100%					100%	100%				100%			100%	33.3%		100%

In this example, *E. coli* is the most common pathogen that causes uncomplicated UTIs.

E. coli showed susceptibility to nitrofurantoin of 97% of isolates (>7,000 tested)

Second line agents, such as Bactrim showed 78% and cephalexin 88%.

Recommendations for Management of Uncomplicated UTI

First-line agents:

- Nitrofurantoin monohydrate/microcrystal 100mg BID **x 5 days**
  - Do not use if CrCL <30

Second-line agents (in order of preference):

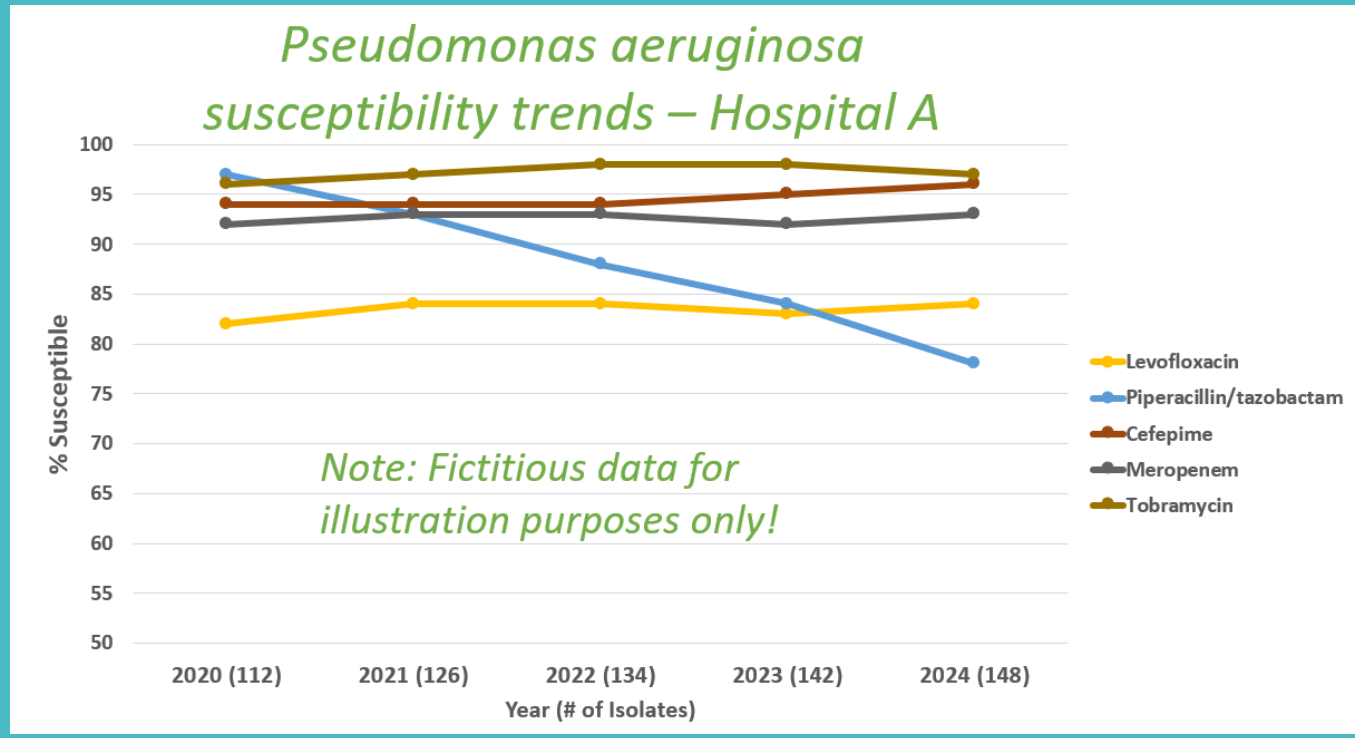
- Trimethoprim-sulfamethoxazole 160/800mg (one DS tablet) BID **x 3 days**

OR

- Cephalexin 500mg BID **x 5-7 days**

Reviewing prescribing practices after an increase in resistant infections

- Zosyn's steep drop in susceptibility signals it is becoming less reliable for empiric use against *P. aeruginosa*.
- Compare to an Alternative: Cefepime maintains high and stable efficacy over the same period.
- This antibiogram trend justifies changing empiric guidelines in Hospital A to favor cefepime for suspected *Pseudomonas* infections.
    - Improves the likelihood of appropriate initial therapy, reduces resistance pressure on Zosyn, and reflects local resistance.
- Communicate with Clinicians: Share this graph during provider meetings to visually reinforce the rationale.



Evaluate antibiotic usage and prescribing practices!!

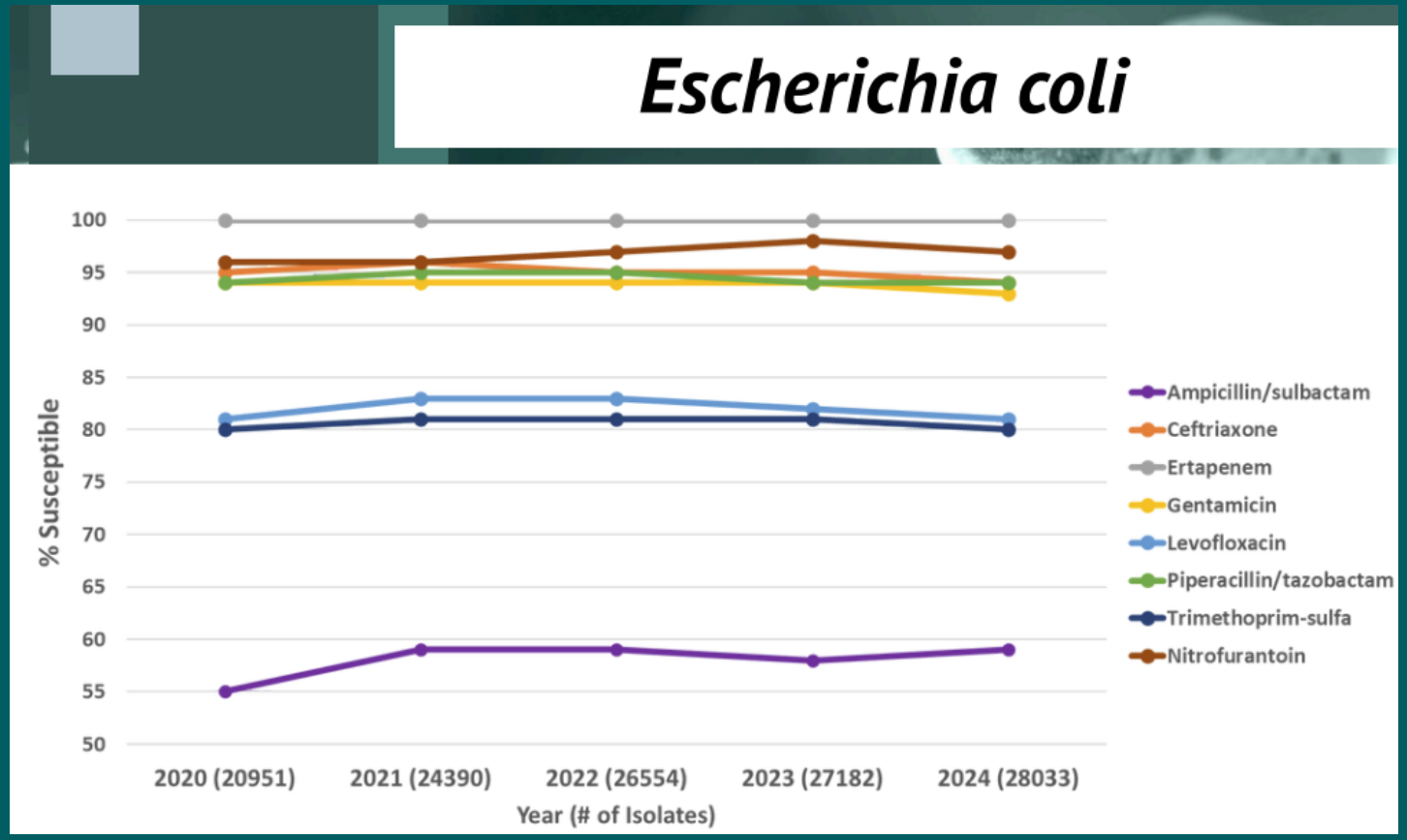
Limitations of Antibiograms

- Data do not take into account patient-specific factors, such as history of infection or past antimicrobial use
- Data are the result of single microorganism-antimicrobial combinations and, therefore, do not show trends in cross-resistance of microorganisms to other drugs (multi-drug resistance)
- Data might not be generalizable to specific patient populations
- Timeliness—antibiograms typically reflect last year's data

Epidemiologic Use of Antibiograms

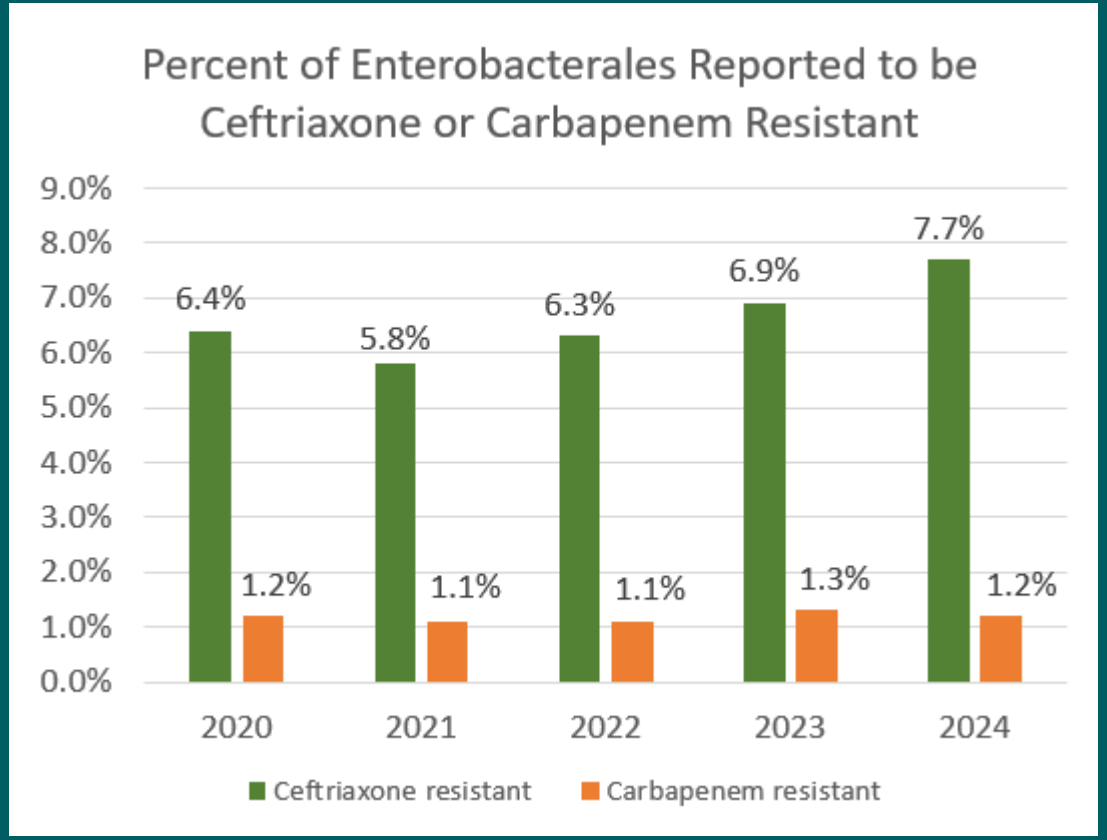
Identify trends in antimicrobial susceptibility

- Statewide antibiograms aggregate data across facilities, giving a broader view of resistance trends than individual facility reports.
- Allow detection of high-level patterns:
  - Shifts in susceptibility over time
  - Useful for trend analysis over years and across jurisdictions.



Detect emerging resistance threats

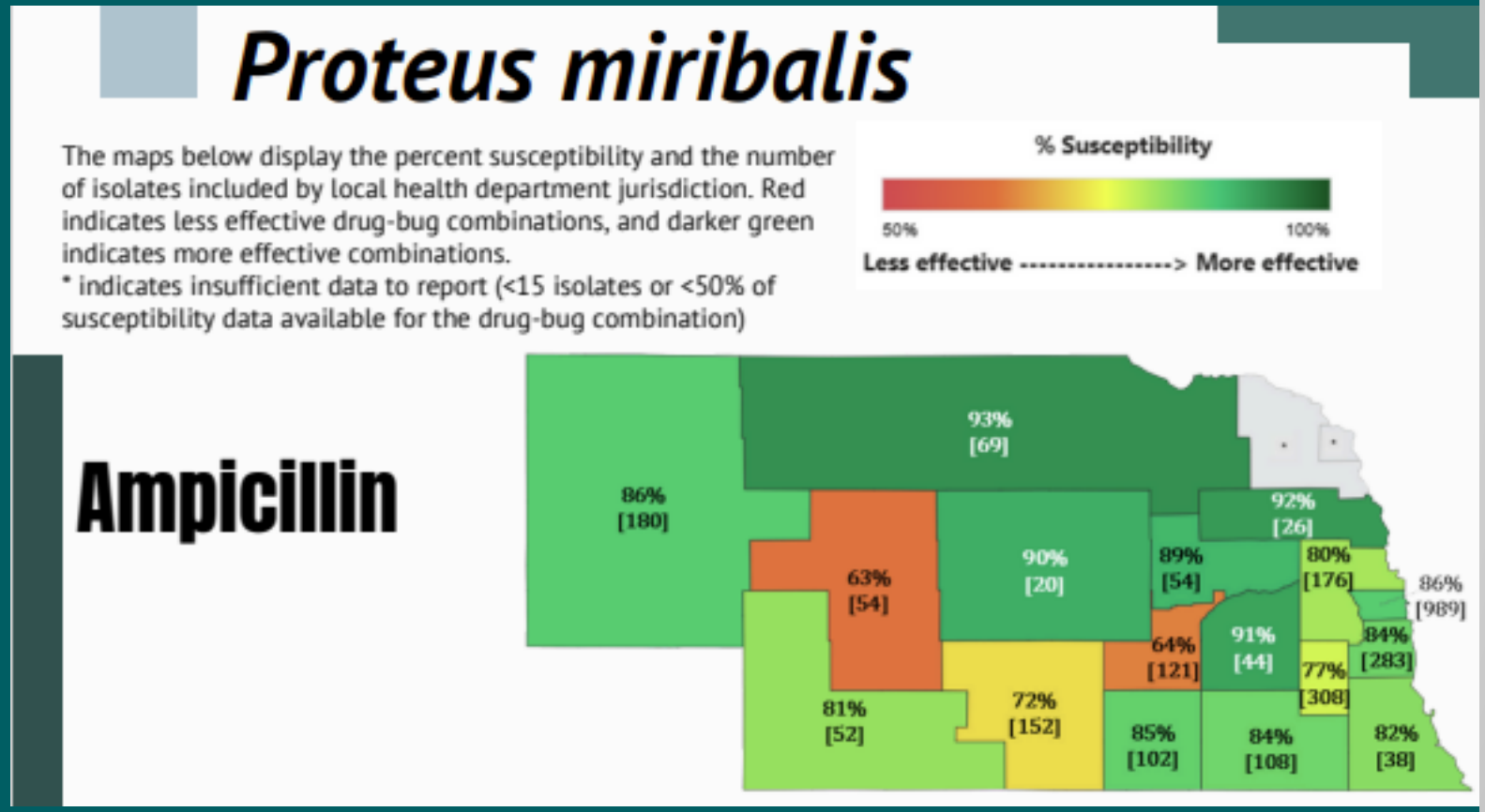
- Aggregated antibiogram data can serve as a sentinel for rising threats.
- Examples of emerging concerns that may be first spotted in antibiograms:
  - Increased prevalence of ESBL-producing *Enterobacterales*.
- Supports public health alerts, educational outreach, or facility assessments.



Data Source: Electronic Lab Reports Submitted to NEDSS

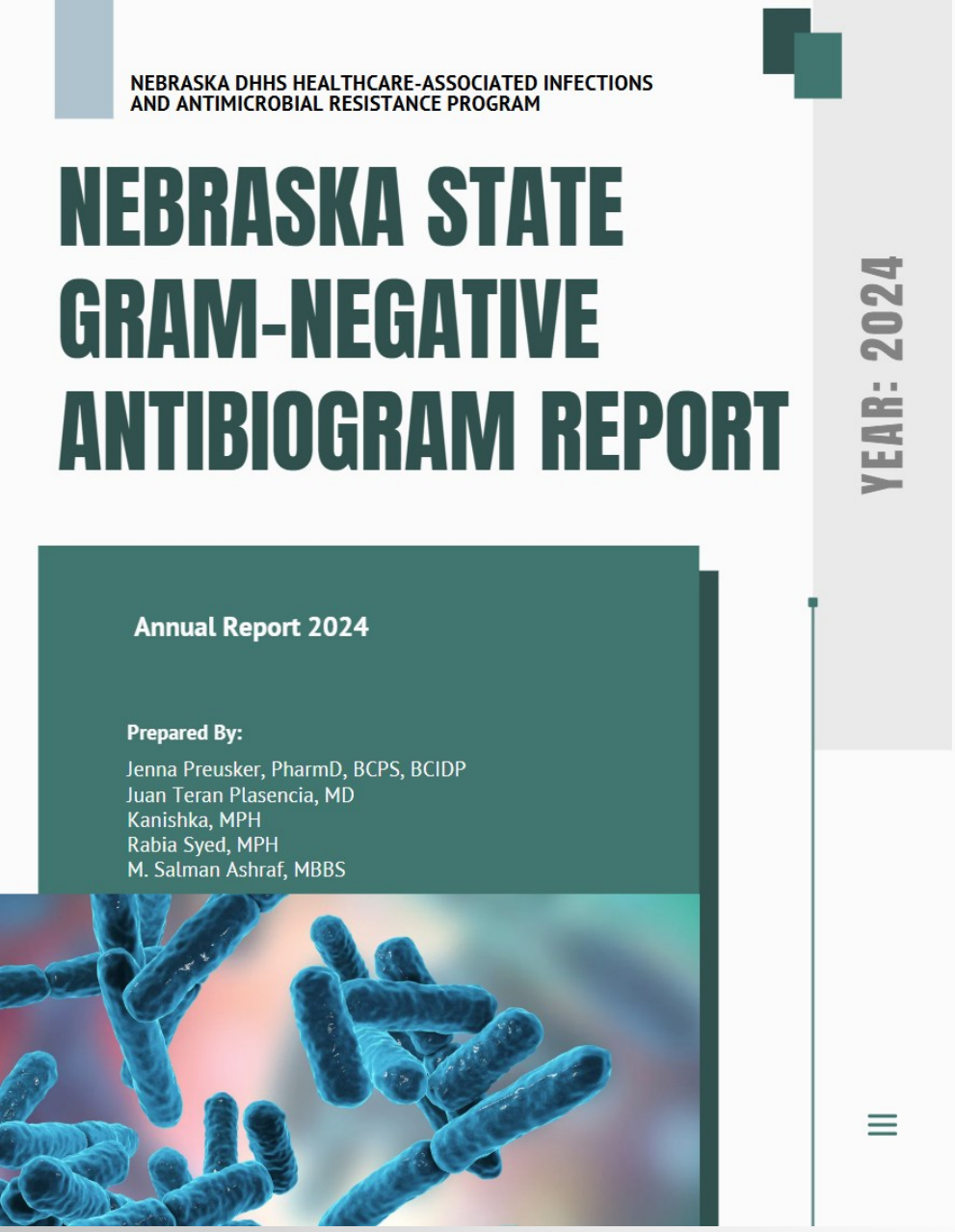
Compare susceptibility rates across regions

- Local health departments can benchmark their area's susceptibility rates against neighboring regions or the state average.
- Helps identify:
  - Geographic pockets of higher resistance
  - Regional differences in prescribing practices or infection control.
  - Supports targeted education, policy, or intervention strategies.



Limitations of Statewide Antibiograms

- Lack of standardization across submitting facilities (different methods, organisms reported)
- Limited resolution—cannot drill down to facility-specific drivers
- Includes a combination of clinical settings (inpatient and outpatient isolates included)
- Not divided by culture type (urine vs respiratory, etc.)
- Statewide or local health department antibiograms should NOT be a substitute for creating your own facility-specific antibiogram (if possible)



2024 Nebraska Gram-Negative Antibiogram Report

What's included in the report?

- ✓ Nebraska Statewide Gram-Negative Antibiogram
- ✓ Local Health Department Gram-Negative Antibiograms
- ✓ Antibiotic Susceptibility Heat Maps
- ✓ Trends in Gram-Negative Susceptibility in Nebraska

Website Link: 2024 Gram Negative Antibiograms Annual Report

Nebraska Statewide Antibiogram

Includes Inpatient and Outpatient isolates, first isolate per patient
Data Displayed as: % Susceptible (Number of Available Isolates)

	Total_Isolates	Ampicillin	Ampicillin_Sulbactam	Amoxicillin_Clavulanate	Piperacillin_Tazobactam	Cefazolin	Cefuroxime	Cefoxitin	Ceftriaxone	Ceftazidime	Cefepime	Ceftolozane_Tazobactam	Ertapenem	Meropenem	Gentamicin	Tobramycin	Levofloxacin	Trimethoprim_Sulfa	Nitrofurantoin	Tetracycline
Escherichia coli	28,635	59.5% (27964)	58.3% (19662)	83.3% (12080)	93.4% (20344)	86.5% (18489)	83% (10104)	90.4% (8924)	93.9% (26507)	99.2% (12302)	92.7% (18114)	99.5% (8724)	99.9% (14922)	99.9% (13252)	92.9% (27519)	89.5% (14926)	81.3% (25342)	79.6% (27890)	97.3% (25845)	78% (9468)
Acinetobacter baumannii	53	R	96.2% (52)	R		R	R	R		85.4% (41)	96.9% (32)		R	100% (31)	95.1% (41)	100% (42)	95.5% (44)	97.5% (40)	R	95.5% (22)^
Citrobacter freundii	720	R	R	R	90.6% (563)	R	R	R	79.6% (540)	93.5% (431)	98.3% (699)		97.7% (486)	99.2% (476)	94.7% (719)	93.5% (508)	91.2% (692)	86.8% (638)	93.7% (663)	82.7% (398)
Citrobacter koseri	558	R	98.5% (264)	98.8% (342)	99.4% (532)	96.2% (397)	89.9% (287)	96.7% (241)	98.9% (524)	99.3% (297)	99.7% (399)	99.3% (151)	100% (382)	100% (359)	99.8% (566)	100% (353)	99.4% (534)	99.2% (512)	76.8% (495)	98.2% (281)
Enterobacter cloacae complex	1,255	R	R	R	83.3% (966)	R	R	R	69.8% (755)	79% (734)	95.2% (1241)		90.2% (766)	99.6% (715)	98.1% (1240)	97.1% (805)	95.1% (1173)	91.5% (1250)	32% (925)	89.9% (611)
Haemophilus influenzae	76	66.7% (75)		84.8% (46)					100% (62)					100% (17)*			100% (45)	71.9% (57)		82.9% (41)
Klebsiella aerogenes	993	R	R	R	85.6% (834)	R	R	R	79.9% (730)	92.1% (572)	98.3% (978)	100% (25)^	97.2% (662)	99.7% (504)	98.9% (963)	98.5% (573)	96.9% (926)	97.7% (988)	23.3% (847)	93.7% (434)
Klebsiella oxytoca	1,302	R	70.7% (1178)	91% (774)	92.7% (1067)	48.9% (1135)	81.7% (612)	92% (588)	93.1% (1244)	97.9% (798)	93.4% (978)	99.3% (416)	99.8% (875)	100% (844)	96.7% (1272)	95.7% (806)	96.9% (1242)	92.6% (1273)	88.7% (1011)	89.2% (609)
Klebsiella pneumoniae	5,824	R	86.4% (5283)	93.4% (3104)	94.1% (5515)	88.6% (4047)	86.3% (2452)	90.6% (2327)	94.1% (5568)	97.3% (3171)	92.9% (4093)	99.3% (1531)	99.7% (3806)	99.9% (3543)	97% (5759)	95.3% (3222)	91.2% (5632)	90.8% (5773)	41.8% (5202)	84.3% (2439)
Morganella morganii	121	R	R	R	96.3% (109)	R	R		92.9% (42)	91.7% (24)*	96.9% (98)		100% (18)^	100% (21)*	90.2% (112)	82.9% (41)	72.5% (102)	79.1% (115)	R	
Proteus mirabilis	2,814	82.1% (2786)	86.6% (1840)	94.7% (1512)	97.2% (1930)	68.5% (1837)	95.3% (1267)	96.2% (1275)	95.1% (2519)	99.2% (1591)	94.2% (1721)	99.9% (860)	99.9% (1633)	99.9% (1124)	92% (2786)	89.1% (1638)	82.5% (2613)	83.8% (2767)	R	R
Providencia spp.	97	27.9% (43)	58.8% (34)	46.2% (13)^	100% (91)	22.2% (45)	83.3% (6)^		89.7% (39)	87% (23)*	98.9% (90)		92.3% (13)^	100% (10)*	70.2% (94)	41.3% (46)	72.3% (83)	90.8% (87)	7.5% (80)	
Pseudomonas aeruginosa	3,647	R	R	R	94.5% (3344)	R	R	R	R	97.3% (2548)	95.6% (3396)	99.8% (1429)	R	92.6% (2424)		97.3% (2560)	84% (3413)	R		R
Serratia marcescens	495	R	R	R	86.4% (324)	R	R	R	80.1% (346)	97.1% (312)	99.6% (480)	99% (203)	98.6% (291)	98.4% (308)	98.1% (476)	93.2% (322)	93.8% (469)	95.2% (418)	R	29.3% (222)
Stenotrophomonas maltophilia	75	R	R	R		R	R	R	R				R	R	R	R	86.8% (68)	93.7% (63)	R	

Percent Susceptible Key:	100-90	89.9-70	<70	Not enough data to interpret, <70% of susceptibility data available

Blanks = Indicate drug not routinely tested
R = Intrinsically resistant
^ = Use caution interpreting results with < 30 isolates reported

Nebraska Statewide Gram-Negative Antibiogram

- Blanks indicate drug-bug combination is not routinely tested
- R = Intrinsically resistant
- ^ = Use caution interpreting results, less than 30 isolates available

Percent susceptible key:

- Green = >90% susceptible
- Yellow = 70-89.9% susceptible
- Red = <70% susceptible
- Gray = Not enough data to interpret, <70% of susceptibility data available

Local Health Department Gram-Negative Antibiograms

Lincoln-Lancaster County Health Department

Includes Inpatient and Outpatient isolates, first isolate per patient
Data Displayed as: % Susceptible (Number of Available Isolates)

	Total_Isolates	Ampicillin	Ampicillin_Sulbactam	Amoxicillin_Clavulanate	Piperacillin_Tazobactam	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Ceftolozane_Tazobactam	Ertapenem	Meropenem	Gentamicin	Tobramycin	Levofloxacin	Trimethoprim_Sulfa	Nitrofurantoin	Tetracycline
Citrobacter freundii	101	R	R	R	83.1% (59)	R	R	79.7% (64)	91.9% (37)	98.9% (88)		96.5% (57)	100% (53)	98% (100)	95.3% (43)	89% (100)	88% (100)	90.8% (98)	83.9% (31)
Citrobacter koseri	96	R	95% (20)^	95.7% (46)	97.9% (96)	92.7% (82)	92% (25)^	97.9% (96)	100% (40)	100% (84)	100% (19)^	100% (84)	100% (64)	100% (96)	100% (45)	97.9% (96)	97.9% (94)	83.9% (87)	100% (25)^
Enterobacter cloacae complex	163	R	R	R	88.5% (96)	R	R	64.4% (59)	77.2% (57)	96.3% (162)	R	95.8% (95)	100% (80)	99.4% (161)	98.6% (71)	94.3% (159)	90.7% (162)	32.8% (137)	93.6% (47)
Klebsiella aerogenes	192	R	R	R	82.5% (114)	R	R	81.2% (159)	94.2% (69)	98.4% (190)	100% (3)^	97.3% (148)	100% (46)	100% (191)	100% (69)	95.8% (192)	97.4% (192)	14.4% (173)	94.7% (38)
Morganella morganii	14	R	66.7% (3)^	100% (1)^	92.3% (13)^	30% (10)^		75% (4)^		91.7% (12)^		100% (4)^	100% (4)^	100% (12)^		85.7% (14)^	92.3% (13)^	R	R
Stenotrophomonas maltophilia	25	R	R	R		R	R	R				R	R	R	R	95.7% (23)^	100% (20)^	R	
Escherichia coli	5047	61.2% (5025)	65.2% (4231)	84.3% (1778)	95.3% (4313)	78.7% (3871)	79.6% (909)	95.7% (4993)	98.6% (1772)	95.7% (3957)	99.2% (924)	99.9% (3941)	99.9% (3000)	93.8% (5027)	90.2% (1866)	81.8% (5012)	81.3% (5003)	97.8% (4802)	78.7% (927)
Klebsiella oxytoca	172	R	73.1% (160)	91.5% (71)	90.1% (111)	38.1% (160)	76.7% (43)	92.1% (165)	97.3% (74)	92.2% (141)	100% (44)	100% (134)	100% (104)	95.3% (170)	92.1% (76)	95.8% (167)	92.1% (165)	88.7% (142)	90.9% (44)
Klebsiella pneumoniae	997	R	87.8% (948)	94.2% (313)	92.5% (976)	83.2% (754)	85.2% (149)	94.5% (985)	96.6% (320)	94.3% (784)	99.4% (166)	99.6% (780)	100% (601)	97.2% (992)	94.6% (333)	90.2% (994)	91.3% (989)	38.7% (915)	83.7% (153)
Proteus mirabilis	315	76.6% (308)	80.5% (190)	93.3% (120)	97.5% (202)	68.6% (191)	100% (87)	94.7% (300)	95.2% (126)	92.7% (191)	100% (92)	100% (192)	100% (147)	90.5% (315)	84.7% (131)	85.4% (309)	86.1% (303)	R	R
Pseudomonas aeruginosa	578	R	R	R	95.3% (529)	R	R	R	97.9% (433)	97% (537)	99.7% (378)	R	92.4% (459)		96.2% (448)	82.7% (560)	R		R
Serratia marcescens	55	R	R	R	91.9% (37)	R	R	78.9% (38)	96.6% (29)^	98% (51)	95% (20)^	100% (37)	93.8% (32)	95.9% (49)	93.5% (31)	88.7% (53)	85.7% (49)	R	47.1% (17)^

Percent Susceptible Key: 100-90 | 89.9-70 | <70 | Not enough data to interpret, <70% of susceptibility data available

Blanks = Indicate drug not routinely tested
R = Intrinsically resistant
^ = Use caution interpreting results with < 30 isolates reported

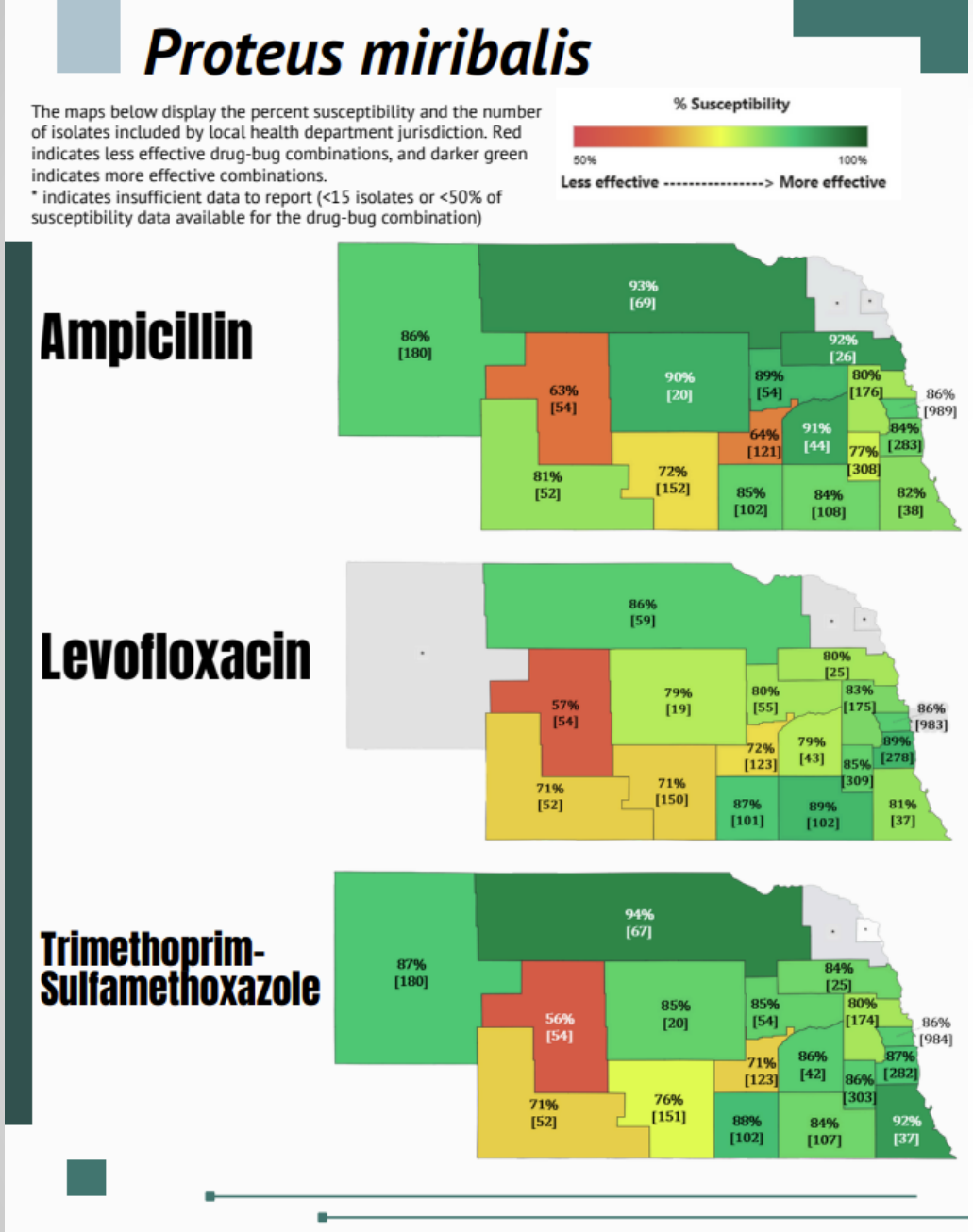
North Central District Health Department

Includes Inpatient and Outpatient isolates, first isolate per patient
Data Displayed as: % Susceptible (Number of Available Isolates)

	Total_Isolates	Ampicillin	Ampicillin_Sulbactam	Amoxicillin_Clavulanate	Piperacillin_Tazobactam	Cefazolin	Cefoxitin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Ceftolozane_Tazobactam	Ertapenem	Meropenem	Gentamicin	Tobramycin	Levofloxacin	Trimethoprim_Sulfa	Nitrofurantoin	Tetracycline
Citrobacter freundii	23	R	R	R	94.1% (17)^	R	R	R	88.2% (17)^	93.8% (16)^	95.7% (23)^		94.1% (17)^	95.5% (22)^	100% (23)^	95% (20)^	90.9% (22)^	94.4% (18)^	95% (20)^	91.7% (12)^
Citrobacter koseri	10	R	100% (6)^	87.5% (8)^	100% (10)^	87.5% (8)^	100% (5)^	85.7% (7)^	88.9% (9)^	85.7% (7)^	100% (9)^	100% (5)^	100% (8)^	100% (9)^	100% (10)^	100% (8)^	100% (10)^	100% (9)^	90% (10)^	100% (7)^
Enterobacter cloacae complex	34	R	R	R	87% (23)^	R	R	R	82.4% (17)^	82.4% (17)^	90.6% (32)	R	88.2% (17)^	100% (16)^	100% (34)	100% (23)^	96.2% (26)^	94.1% (34)	34.8% (23)^	81.8% (11)^
Escherichia coli	598	64.2% (598)	70.4% (561)	85.4% (212)	96.3% (562)	85.3% (543)	91% (200)	83.6% (229)	95.9% (587)	98.7% (473)	95.8% (474)	100% (196)	100% (232)	100% (468)	91.9% (594)	91.8% (352)	85.6% (514)	84% (593)	98.6% (563)	79.6% (221)
Klebsiella aerogenes	26	R	R	R	83.3% (12)^	R	R	R	90% (10)^	100% (10)^	100% (25)^		100% (10)^	100% (10)^	100% (25)^	100% (15)^	100% (22)^	100% (26)^	31.6% (19)^	71.4% (7)^
Klebsiella oxytoca	39	R	66.7% (39)	89.5% (19)^	88.5% (26)^	32.4% (34)	91.7% (12)^	76.9% (13)^	92.3% (39)	97% (33)	94.3% (35)	91.7% (12)^	100% (20)^	100% (33)	94.9% (39)	100% (27)^	96.7% (30)	89.7% (39)	85.7% (28)^	100% (12)^
Klebsiella pneumoniae	156	R	98.7% (150)	93.4% (61)	98.7% (151)	92.1% (139)	100% (36)	97.6% (41)	96.7% (151)	97.5% (121)	96.9% (129)	100% (34)	100% (66)	100% (124)	97.4% (153)	94.5% (91)	94.8% (134)	92.1% (152)	54.3% (140)	94.9% (39)
Proteus mirabilis	69	92.8% (69)	95.4% (65)	87.5% (16)^	98.5% (65)	57.4% (61)	93.8% (16)^	87.5% (16)^	98.5% (65)	100% (52)	98.1% (52)	100% (14)^	100% (18)^	100% (49)	98.5% (68)	97.2% (36)	86.4% (59)	94% (67)	R	R
Pseudomonas aeruginosa	99	R	R	R	95.3% (86)	R	R	R	R	98.7% (77)	95.9% (73)	100% (25)^	R	95.5% (66)		93.2% (59)	77.6% (76)	R		R

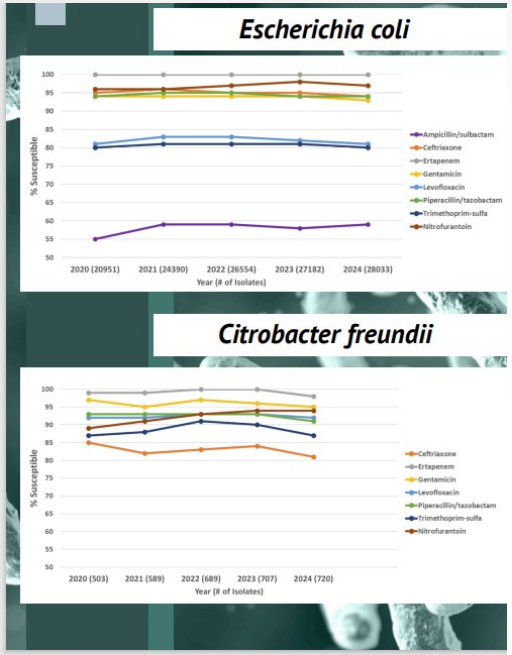
Percent Susceptible Key: 100-90 | 89.9-70 | <70 | Not enough data to interpret, <70% of susceptibility data available

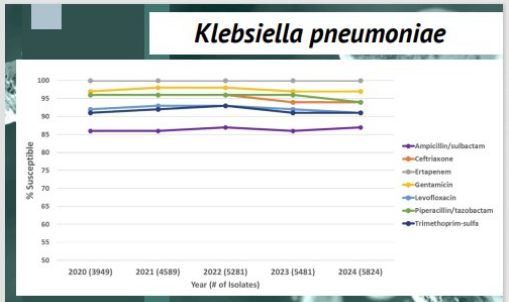
Blanks = Indicate drug not routinely tested
R = Intrinsically resistant
^ = Use caution interpreting results with < 30 isolates reported

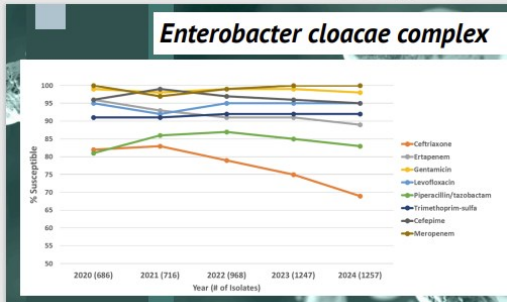


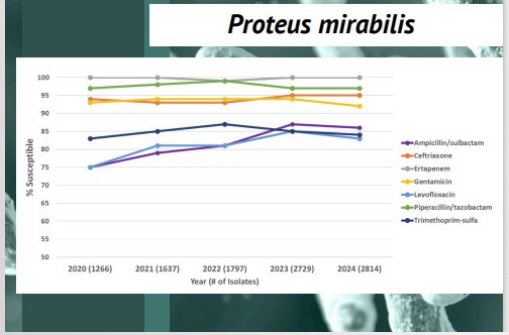
Antibiotic Susceptibility Heat Maps – Drug/Bug Combinations of Interest

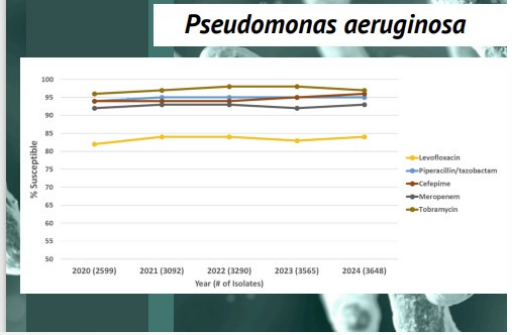
Gram-Negative Organism Statewide Susceptibility Trends 2020-2024



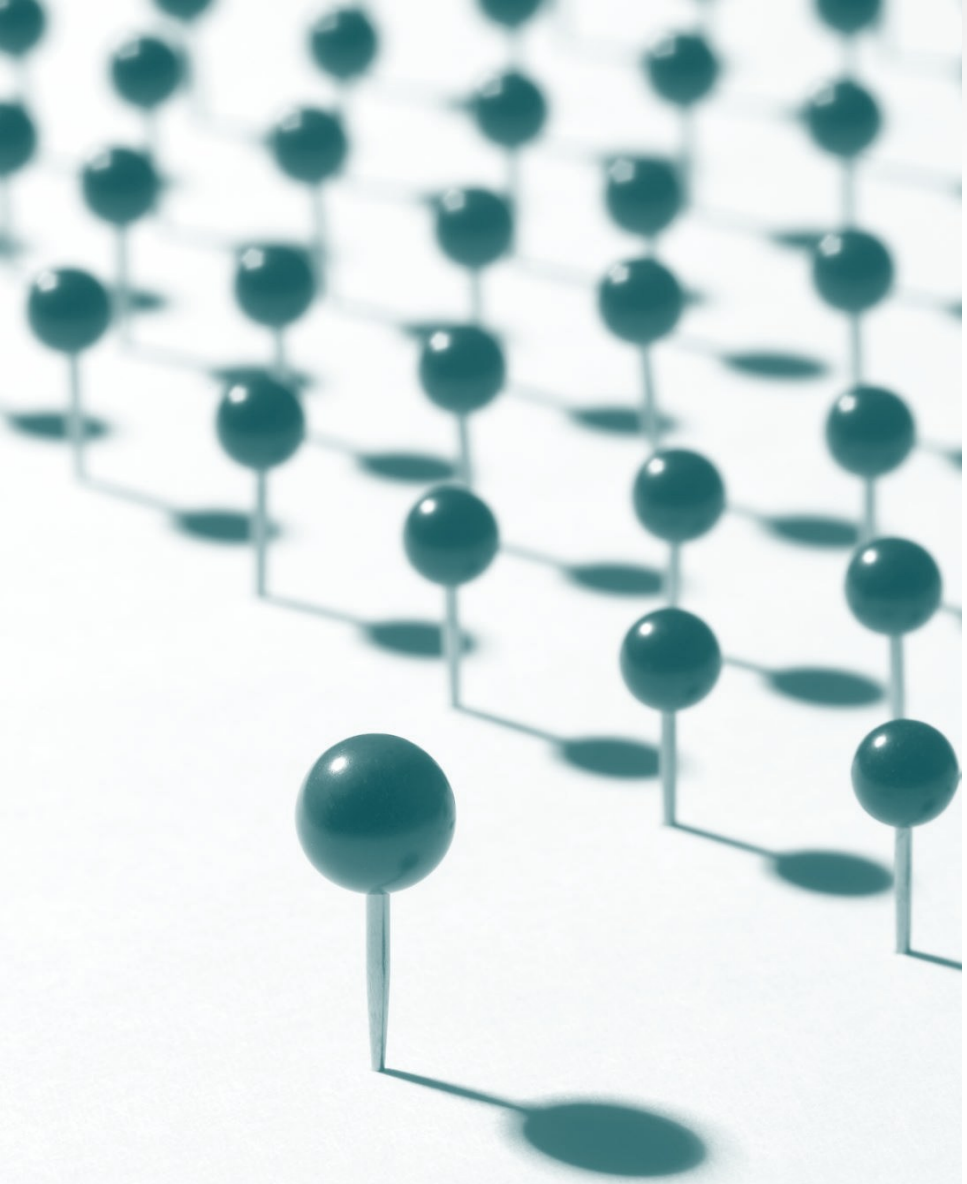








Trends in Gram-Negative Susceptibility in Nebraska



In Conclusion:

Best Practices for Using Antibiograms

- Use antibiogram data in conjunction with other surveillance (e.g., infection control reports, antibiotic use data)
- Track year-over-year trends to identify shifts in resistance and investigate significant changes
- Review facility antibiotic guidance (order sets) annually
- Collaborate with micro lab, pharmacy, and infection prevention (including those at area hospitals) to interpret and communicate findings

In Closing

NE ICAP

2025 International Infection Prevention Week

October 19-25, 2025

Unite

Many Roles, One Goal—Protecting Patients and Providers

Prevent

Taking Action Today to Protect Health and Save Lives Tomorrow

Protect

Infection Preventionists Protect – Now More Than Ever

Prevail

Overpowering Opposition and Being Victorious

https://infectionpreventionandyou.org/ https://infectionpreventionandyou.org/tools-and-resources/

Learning Center

ICAP/ ASAP Education on Your Own Time

Designed for front-line HCP, quiz & certificate.

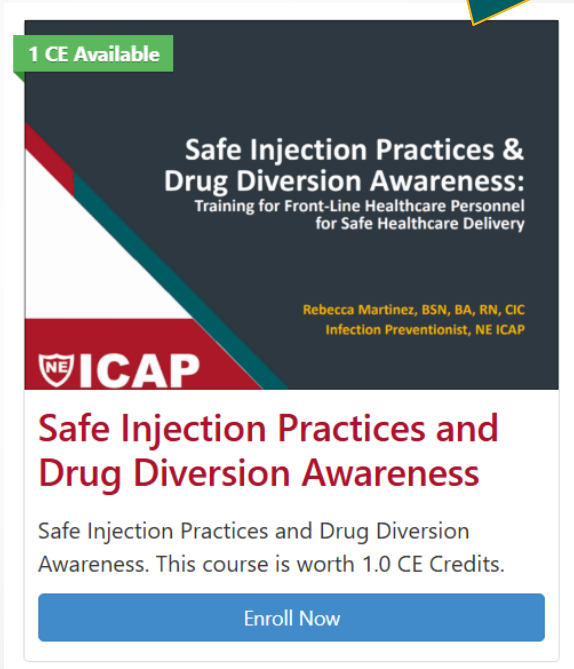
Courses

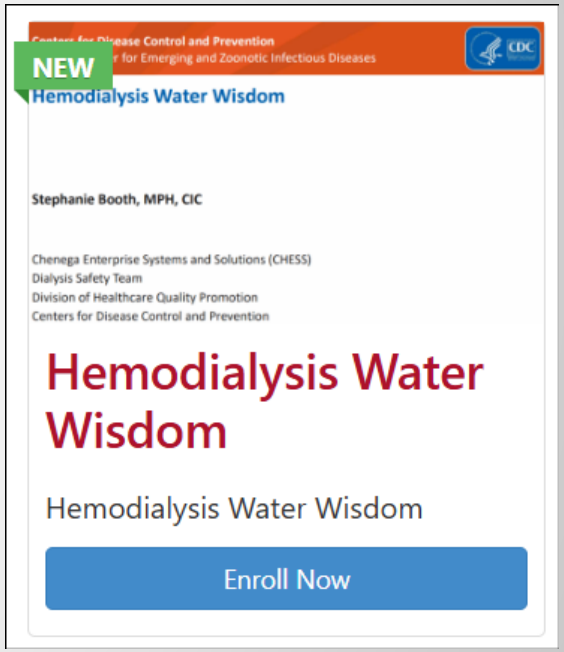
Thank you for exploring the courses Nebraska ICAP/ ASAP have to offer. All users must be registered to take a course with Nebraska ICAP/ ASAP.

New users: Please click on the "Registration" tab at the top of the page to create an account.

Registered users: Login below or you will be asked to login when you select a course.

Login





https://icapasaplearning.nebraskamed.com/

Infection Control Assessment & Response (ICAR) Visits

On-site or remote infection control assessment and response visits are available. Can be general or focused to your facility's needs, including the following:

- General IPC
- Device Reprocessing
- Water Management Program
- **Antimicrobial Stewardship provided by NE ASAP**

Join Us - Upcoming NE ICAP Webinar

November 13, 2025

- 12:00 – 1:00 PM (CST)
  - Antibiotic Tracking Tool

Webinar CE Process

1 Nursing Contact Hour is offered for attending this LIVE webinar.

Individual surveys must be completed for each attendee.

Questions? Contact us at: nebraskaicap@nebraskamed.com 402-552-2881

Nursing Contact Hours:

- Completion of survey is required.
  - The survey must be specific to the individual obtaining credit. (i.e.: 2 people cannot be listed on the same survey)
- One certificate is issued quarterly for all webinars attended
- Certificate comes directly from ICAP via email

Infection Prevention and Control Hotline Number:

Call 402-552-2881

Office Hours are Monday – Friday
8:00 AM - 4:00 PM Central Time

*Messages left outside of Office hours will be answered the next business day.
**Please call the main hotline number to ensure the quickest response.