

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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Nebraska DHHS HAI/AR Program

State

Monitors HAI rates and AR data and keep facilities informed regarding progress and opportunities

Initial outbreak response/consultations

Assist facilities with data reporting and validations

Partners with stakeholders to drive changes focused on decreasing HAIs and AR

Academia

Partners with facilities to assess & advance their IC and AS programs on voluntary basis

Assist with IC assessment during outbreaks

Connect all facilities in the state with IC and AS subject matter experts

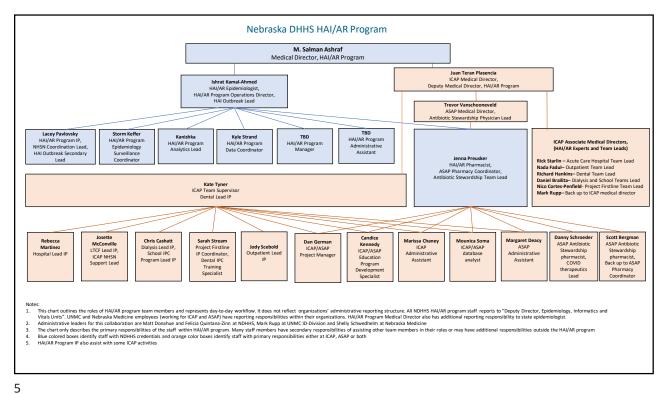
Develop educational resources and guidance

PARTNERSHIP

Nebraska Infection Control Assessment and Promotion Program (ICAP)

Nebraska Antimicrobial Stewardship Assessment and Promotion Program (ASAP)

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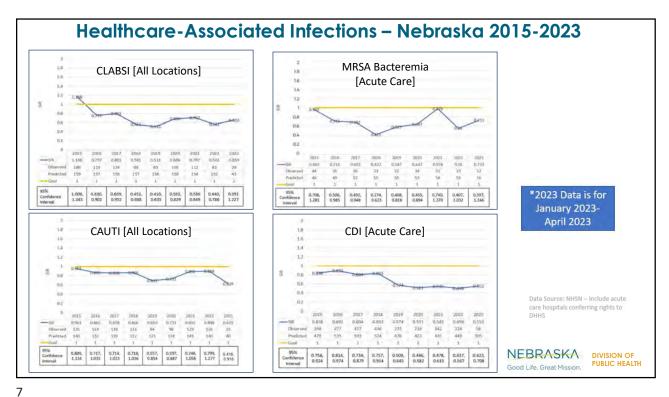


Updates to be Discussed

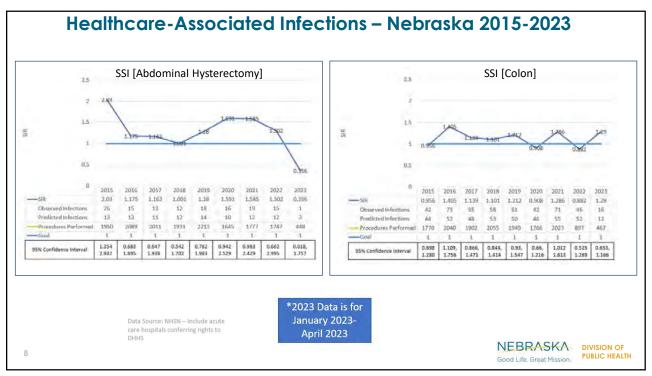
- Trends in healthcare-associated infections (CAUTI, CLABSI, MRSA bloodstream infection, CDI, SSI)
- Promoting NHSN AUR module uptake in the hospitals
- Trends in multidrug resistant organisms (CRE/CP-CRE, CRPA, C. auris)
- CDC's updated guidance to prevention and response to MDROs
- Nebraska DHHS protocol for tracking targeted MDROs and keeping facilities informed
- Supporting LTCF with infection prevention and control and antimicrobial stewardship efforts
- Healthcare-associated legionnaires' disease

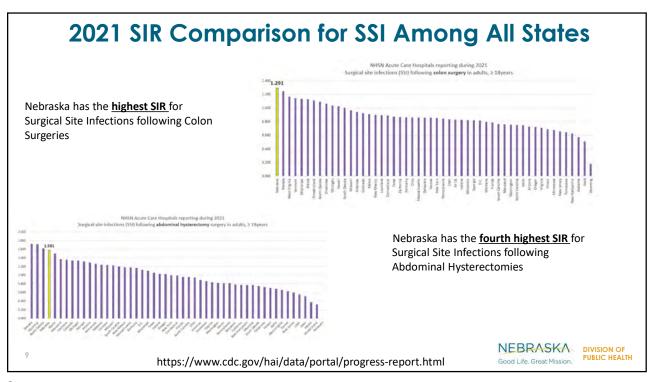
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Collaborative Efforts to Decrease SSI

- Development of SSI subcommittee of HAI/AR Advisory Council
 - o Representative of xx hospitals participating in the subcommittee
 - o Includes ID physicians, surgeons, IPs and quality program leaders
- Subcommittee developed and conducted statewide survey of hospitals
 - >50% of hospitals responded to survey
- Survey results will be used by the committee to develop guidance for best practices
- One-on-one outreach and assistance, as needed, is also available

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Preliminary Findings From SSI Survey

Some noticeable variations in practice existed including (but not limited to) the following areas:

- Auditing of aseptic technique practices prior to and during surgical procedures
- Monitoring compliance with best practice recommendations for the OR (compliance with surgical attire, minimizing OR traffic etc.)
- Standardizing and monitoring antimicrobial prophylaxis practices
- Changing gloves and using a separate sterile field set-up for closing for colon and abdominal hysterectomy cases
- Pre-operative mechanical bowel preparation regimen for colon surgeries
- Vaginal preparation/cleansing prior to hysterectomies
- Use of an alcohol-based agent for skin preparation
- Perioperative screening and treatment for bacterial vaginosis

Further analyses of survey data will be conducted by the subcommittee and recommendations will be made and shared with all hospitals



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Digging Deeper into Hospital- Onset C. difficile Infections Nebraska acute care hospitals (excluding critical access hospitals) ranked 26th for lowest SIR for C. difficile Infections among all 50 states in the US in 2021 (with 28 facilities contributing to this report) Nebraska critical access hospitals have the highest SIR for C. difficile Infections among all 50 states in the US in 2021 (with 36 facilities contributing to this report) NEBRASKA DIVISION OF PUBLIC HEALTH Good Life. Great Mission. https://www.cdc.gov/hai/data/portal/progress-report.html

Supporting Critical Access Hospitals with High CDI SIR

- Nebraska hospitals utilizes NHSN's group function to share data with Nebraska DHHS
 - o Requires multi-step process for the facilities to initiate data sharing and serves as a barrier to reporting
- DHHS only have access to less than 15% of Critical Access Hospital CDI data in NHSN limiting outreach efforts for support currently
- Establishing a "Data Use Agreement" with the CDC that will automatically report the NHSN data on behalf of the facilities unless they opt out
- Many hospitals also lack the ability to report to NHSN AUR module which is an additional limitation on providing technical support

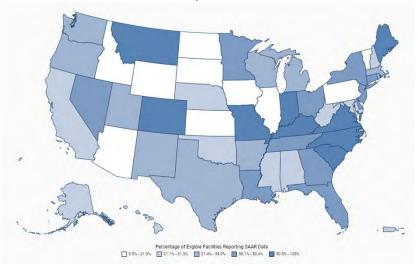


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NHSN Antibiotic Use Module

Percentage of active NHSN acute care facilities reporting at least one month of data to the AU Option as of 2021



https://arpsp.cdc.gov/profile/inpatient-antibiotic-use/all

Nebraska:

Number of facilities reporting: 13

Number of facilities eligible to report SAARs: 54

Percentage: 24.1%

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Benefits of AUR Reporting

Insights and Data Benefits

- · Benchmarks for antimicrobial stewardship
- Benchmarks for antimicrobial quality improvement
- Compare with antimicrobial use trends across the nation
- Identify problem areas within a facility to target interventions
- Antibiotic Stewardship guidance from Nebraska ASAP

Regulatory and Payment Benefits

- Meet the CMS Promoting Interoperability requirement added for CY 2024
- Satisfy the Joint Commission's antimicrobial stewardship standard for tracking and reporting
- Added to the CDC Priorities for Hospital Antibiotic Stewardship Core Element Implementation in 2022
 - Priorities for Hospital Core Element Implementation Antibiotic Use | CDC



https://www.cdc.gov/antibiotic-use/core-elements/hospital/priorities.html



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NHSN AUR Implementation in Nebraska – Funding Assistance

- Nebraska DHHS HAI/AR program has made funding available to dedicate towards assisting hospitals with implementing NHSN AUR module
- Funding distributed by **reimbursing** at least part of their expenses for program implementation incurred between February 2022 - July 2024
- Facilities meeting all requirements for funding may request reimbursement for related eligible expenses up to the maximum amount allowed for their facility based on licensed bed size as follows:
 - o Facilities with <100 licensed beds can request a maximum of \$10,000 in reimbursement
 - o Facilities with 101-200 licensed beds can request a maximum of \$15,000 in reimbursement
 - o Facilities with ≥201 licensed beds can request a maximum of \$20,000 in reimbursement

Nebraska National Healthcare Safety Network Antibiotic Use NEBRASKA and Resistance (NHSN AUR) Module Support Project - Expenses

Good Life. Great Mission. Reimbursement Requirements



Purpose: The purpose of this application is to reimburse expenses associated with implementation of reporting data to the National Healthcare Seafety Network (NHSN) Antibiotic Use (AU) and/or Antibiotic Resistance (AR) modules to Nebrasia hospitals. Individual staff are not eligible for reimbursement.

Who is eligible for reimbursement?

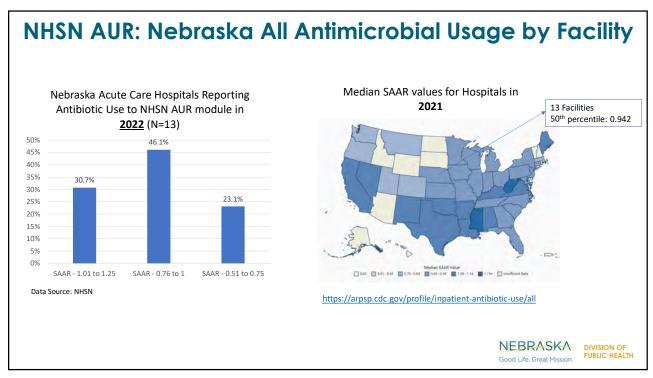
Licensed acute care inpatient facilities in Nebraska are eligible if the following criteria are met

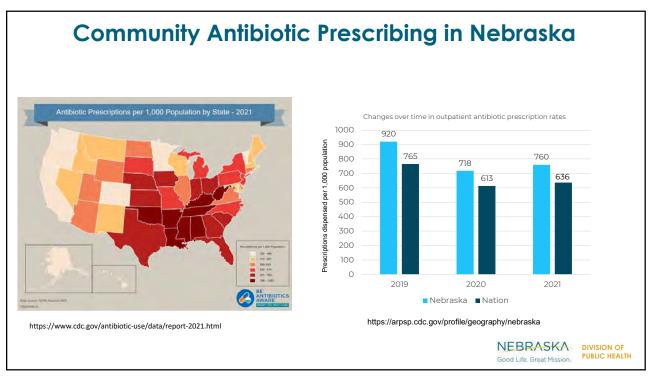
- 1. The facility must be enrolled in NHSN and eligible to report to the NHSN Patient Safety Component AUR Module
 - a. Inpatient facilities eligible to report to the NHSN Patient Safety Component AUR Module include Inguitient institute impore to report to the more request safety component with mounterisation of facilities enrolled as general hospitals, critical access hospitals, children's hospitals, long term acute care hospitals, pediatric long term acute care hospitals, military and veterans' hospitals, oncology hospitals, rehabilitation hospitals, supplication hospitals, republitation hospitals, supplication hospitals, rehabilitation hospitals, supplication hospita

https://dhhs.ne.gov/pages/Healthcare-Associated-Infections.aspx



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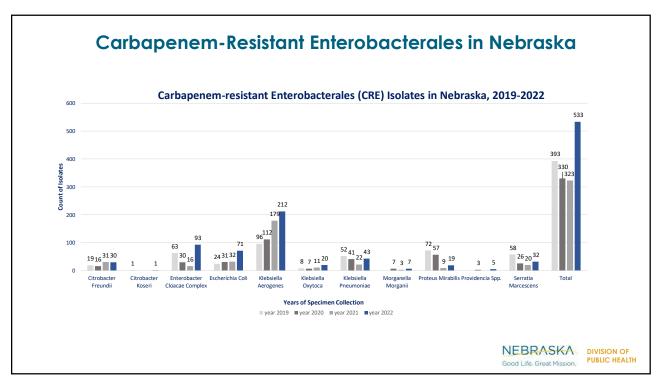


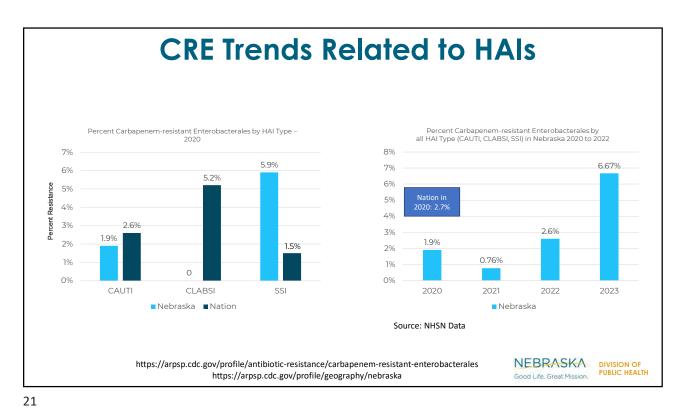
Plans for Promoting Outpatient Antibiotic Stewardship

- Increase outreach to hospital systems with associated clinics and other outpatient networks
- Exploring collaborative opportunities with insurance providers for targeted education
- Expanding engagement with primary care providers and professional societies



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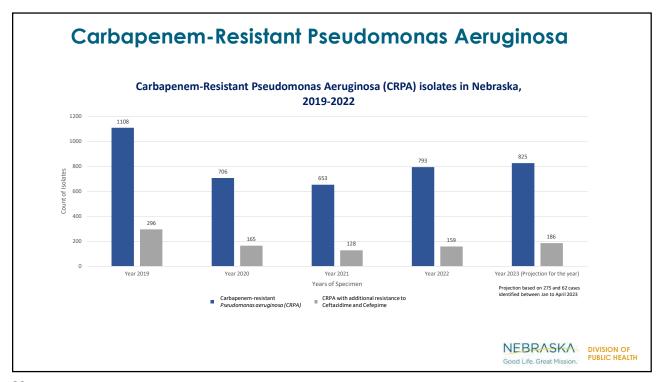
Carbapenemase Genes Identified in Enterobacterales Isolates, Nebraska 2019-2023

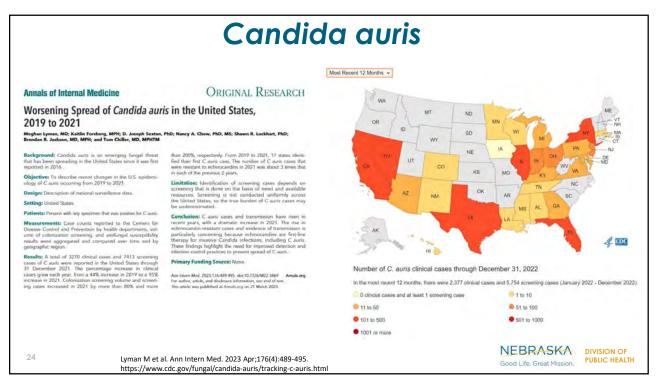
Year	KPC	NDM	OXA-181	OXA-48	VIM	Total
2019	18	9	3	0	0	30
2020	8	0	0	1	0	9
2021	3	0	0	1	0	4
2022	8	3	0	1	1	13
2023 to date	2	3	0	2	0	7

In 2023, 1 case each of Carbapenemase producing Pseudomonas aeruginosa and Acenitobacter baumannii has also been isolated

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Candida auris Surveillance Efforts in Nebraska

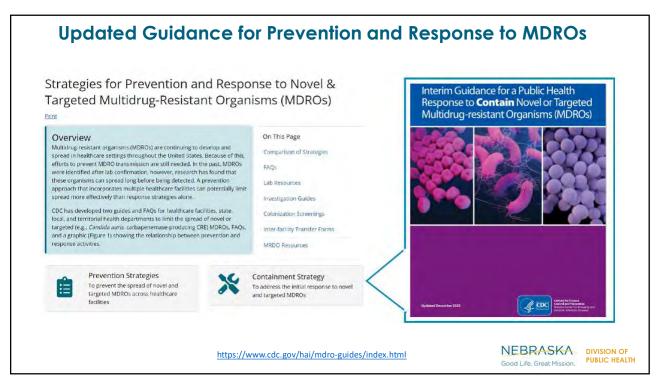
- Education has been done by NPHL to make labs aware of CDC recommendation regarding all yeast isolates from normal sterile site need to be identified to the species level along with potential of misidentification
- NPHL has the ability to assist other labs with C. auris identification and has communicated to send potential isolates when they are unable to perform identification or are suspecting misidentification
- Labs are also advised to report any C. auris case and send the isolate to NPHL
- Nebraska DHHS team and NPHL are also exploring launching wastewater surveillance for *C. auris* and some other MDROs.

fdentification Wethod	Oatabase/Software, if applicable	C. auris is confirmed if initial identification is C. puris.	C. ours is possible if the following initial identification: are given. Further work-up is needed to determine if the bolate is C. ouris.
Bruker Biotyper MALDI-TOF	RUO libraries (Versions 2014 [5627] and more recent)	C. auris	n/a
Bruker Biotyper MALDI-10F	CA System library (Version Claim 4)	C. ouris	n/a
	RUO library (with Saramis Version 4.14 database and		
	Saccharomycetaceae update)	C. guris	n/a
bioMérieux VITEK MS MALDI-	IVD library (v3.2)	C. auris	n/a
TOF	Older IVD libraries	n/a	C. hoemulonii C. lusitoniae No identification
VITEK 2 YST	Software version 8.01*	C auris	C. haemulonii C. duobushaemulonii Candida spp. not identified
	Older versions	n/a	C. haemuloniii C. duobushaemuloniii Candida spp. not identified
API 20C		n/a	Rhodotorula glutinis (without characteristic red color) C. sake Condido spp. not identified
API ID 32C		n/a	C. Intermedia C. sake Saccharomyces kluyveri
BD Phoenix		n/a	C. catenulata C. haemulonii Candida spp. not identified
MicroScan		n/a	C. Justianiae** C. guillermondi** C. parapsilosis** C. fomata Condido spp. not identified
RapiD Yeast Plus		n/a	C parapsilasis** Candida sop. not identified
GenMark ePlex BCID-FP Panel		C. auris	n/a
* There have been reports of C. our ** C. guillermondi, C. lusitaniae, ar should raise suspicions of being C. o		A confirmatory test such as commeal agar. If hyphae or use. However, some C. duris	commeal agar may be warranted for these species: pseudohyphae are not present on commeal agar, the isolate

https://www.cdc.gov/fungal/candida-auris/identification.html https://www.cdc.gov/fungal/candida-auris/pdf/Testing-algorithm_by-Method_508.pdf NEBRASKA
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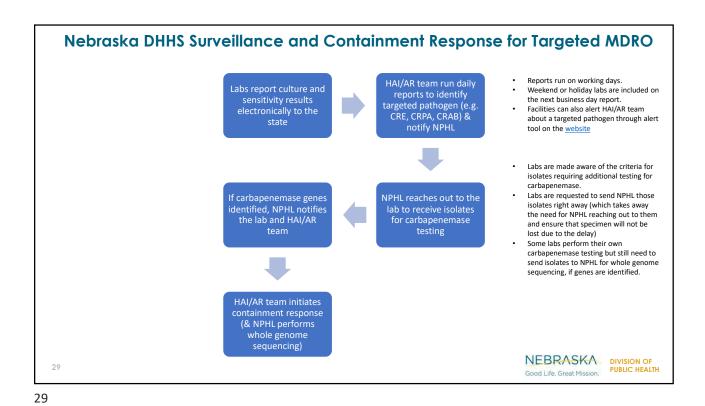
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Tier	Definition of Included Organisms and Mechanisms	Examples (not all inclusive) of organisms/mechanisms for Nebraska
Tier 1	Never (or very rarely) been identified in the United States and for which experience is extremely limited	Novel Carbapenamases
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 	C. auris Carbapenemases (e.g. KPC, NDM, OXA-48, VIM, IMP) Enterobacterales Pseudomonas aeruginosa Acinetobacter baumanni
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	
Tier 4	Endemic in a region and have been targeted by public health for their clinical significance and potential to spread rapidly	MRSA, VRE, Organisms producing extended spectrum beta lactamases

Containment Response Elements Upon Identification of Targeted MDROs Response Elements Elements Clinical Laboratory Surveillance Review the patient's healthcare exposures prior to and after the positive culture¹ ALWAYS ALWAYS Retrospective lab surveillance⁶ Prioritize prevention; containment principles generally do not apply. Typical review period: Current admission and sometimes immediately prior admission ALWAYS RARELY Prioritize prevention; containment principles generally do not apply. Contact Investigation **Environmental Cultures** Screening of healthcare contacts (i.e., residents and patients)² Prioritize prevention; containment principles generally do not apply. ALWAYS. **ALWAYS** USUALLY Environmental sampling SOMETIMES RARELY RARELY Prioritize prevention; containment principles generally do not apply. Household contact screening Infection Control Measures USUALLY RARELY RARELY Notify healthcare providers; promptly implement appropriate transmission-based precautions Healthcare personnel screening ALWAYS ALWAYS ALWAYS Additional Actions if Transmission Identified in Healthcare Recurring response-driven point prevalence surveys¹ ALWAYS ALWAYS RARELY Infection control assessment with observations of practice Prioritize prevention; containment principles generally do not apply. SOMETIMES Evaluate potential spread to healthcare facilities that regularly share patients with the index healthcare facility⁴ Prioritize prevention; containment principles generally do not apply. Clear communication of patient status with transferring facilities USUALLY USUALLY RARELY ALWAYS NEBRASKA DIVISION OF 28 PUBLIC HEALTH Good Life, Great Mission.



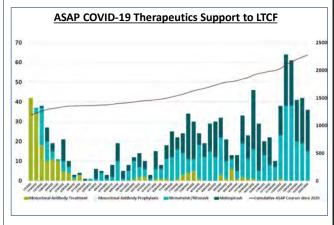
Notification to Facilities for Targeted MDROs What We Want to Do Next Upon Identification of targeted MDRO (such as any CPO), HAI/AR team notify all facilities that patient have previously visited so Set up a process which allows the chart can be flagged. for an automatic notification to Notification the IP (or other designated staff) upon admission to a facility HAI/AR team adds an infectious diseases alert into the CyncHealth, which also generate notification for HAI/AR team Add a flag to the Clinical Portal when the patient gets admitted to hospital, visit ED or get Adding an of CyncHealth for anyone taking discharged Alert care of the patient to be able to review it Explore possibility of adding the Upon receiving new admission/visit alert, HAI/AR team reaches information to PDMP so out to the IP at the facility to make sure they have received the Prospective information is available to notification and proper precautions are being taken Monitoring outpatient clinicians too. NEBRASKA DIVISION OF 30 PUBLIC HEALTH Good Life. Great Mission.

HAI/AR Program LTCF Support

ICAP Infection Prevention and Control Support to LTCF

Metrics	2020	2021	2022	2023	2020- 2023
COVID outbreaks	804	1,239	1,528	426	3,997
Outbreak assistance	804	1,239	1,164	187	3,394
% Outbreak assistance	100%	100%	76.2%	43.9%	84.9%
No. of LTCF assisted	309	359	373	176	405
Structured IPC assessments	309	442	457	55	1,180
IPC consultations	Not tracked	2,644	4,571	483	5,054

- Some of the metrics were not being systematically tracked in 2020 and 2021 and had to be estimated based on the experience that ICAP was offering assistance for every outbreak and had performed a structured IPC assessments for each facility that had an outbreak at least once.
- Outbreak has been defined as any case of LTCF staff or resident in a facility (facility remains in outbreak status until no new case for 14 days)
- 2023 Data is updated as of 5/22/23



Other ICAP and ASAP Services to all healthcare facilities (including LTCF) include: Onsite IPC assessments and feedback; ASP assessments and feedback; Dedicated webinars; Mentorship opportunities for new IPs; Consultations on any IPC/ASP topics; Basic IPC education to frontline healthcare workers through Project Firstline; Availability of various tools, templates and guidance through the website

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2023-2024 Initiative to Support LTCF (LTCF Strike Team Project)

- Assist LTCF with implementing Respiratory Protection Program
- Train additional staff in LTCF who can step in as IP for the facility
- Promote training of frontline staff in LTCF to serve as infection control champions
- Strengthen infrastructure at LHD to coordinate LTCF HAI/AR prevention and containment efforts with Nebraska DHHS HAI/AR Program

Nebraska Long-Term Care Facilities Strike Team Related NEBRASKA **Educational and Fit-Testing Expenses Reimbursement** Guidelines

<u>Purpose:</u> The purpose of this application is to reimburse infection prevention and control (IPC) educational and N-95 fit testing expenses to Nebraska long-termcare facilities that participate in the long-term care facility (LTCF) strike team project. Indi staff are not eligible for reimbursement.

1. Skilled Nursing facilities, and Assisted Living Facilities meeting the following criteria:

- How much and what do the grantsfund?

 1. The grant provides funding for reimbursement of expenses related to IPC training and N-95 fit testing of the staff.

 2. Reimbursements are dependent on availability of funding.

 3. Facilities that meet all retriera for reimbursements may request reimbursement for any eligible educational program or N-95 fit-testing related expenses up to the maximum amount allowed for their facility based on the facility type and size as
 - a. Skilled Nursing Facilities maximum reimbursement will be based on the number of licensed beds as follows:
 - Facilities with \geq 175 licensed beds can request a maximum of \$11,800 in reimbursement Facilities with 125-174 licensed beds can request a maximum of \$10,500 in reimbursement
 - Facilities with 75-124 licensed beds can request a maximum of \$8,800 in reimbursement Facilities with 50-74 licensed beds can request a maximum of \$7,500 in reimbursement
 - v. Facilities with <50 licensed beds can request a maximum of \$6200 in reimbursement
 - Assisted Living Facilities maximum reimbur sement will be based on the number of licensed beds as follows:

 Facilities with 200 licensed beds can request a maximum of \$9,000 in reimbursement
 Facilities with 150-199 licensed beds can request a maximum of \$7,300 in reimbursement

 - Facilities with 75-149 licensed beds can request a maximum of \$6,000 in reimbursement
 Facilities with <75 licensed beds can request a maximum of \$4,700 in reimbursement

https://dhhs.ne.gov/pages/Healthcare-Associated-Infections.aspx

LTCF Strike Team Project Progress

- Local health departments have received "Train-the-Trainer" trainings for N-95 fit testing
- LHDs have assigned a HAI/AR liaison to collaborate efforts with DHHS HAI/AR team
- 83 LTCF have confirmed their interest to participate so far
- 54 LTCF are not sure at this point but have not declined
- 31 LTCF have already received fit-testing support from the LHD

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Healthcare-Associated Legionnaires' Disease

- Since 2022, five cases of healthcare-associated legionnaires' disease has been identified in four different healthcare facilities across the state
- Legionella has also been identified in surveillance cultures as part of the water management program in a few other facilities
- In response, DHHS HAI/AR team has:
 - Enhanced surveillance effort
 - Increased focus on providing education for developing and implementing water management plan
 - Exploring possibility of grant funding to enhance capacity of water testing for Legionella through Public Health Environmental lab (at least during outbreak in a healthcare facility)
- - Many cities across the state do not chlorinate water which makes mitigation effort harder for facilities



In Summary.....

- Nebraska hospitals are doing better in preventing most healthcare-associated infection, but opportunities exist in some areas to improve
- Even though total counts for some of the targeted multidrug resistant organisms remain low the upward trend in numbers are concerning.
- Most of our larger hospital systems are doing an excellent job in keeping antimicrobial use low but additional efforts are needed to promote optimal antibiotic use in all healthcare settings.
- Existing partnerships and collaborative relationships of healthcare facilities with public health in Nebraska has allowed us to make meaningful progress in strengthening infection prevention and control/ antimicrobial stewardship program infrastructure in many facilities across the state.
- HAI/AR program will continue to expand collaboration with healthcare facilities, local health departments, professional organizations and other stakeholders to coordinate patient safety initiatives

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