Utilizing Antimicrobial Stewardship Program Implementation Resources To Promote Appropriate Antibiotic Use in Acute Care, Outpatient and Long-Term Care Facilities

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University of Nebraska Medical Center

University of Nebraska Medical Center

DISCLOSURES

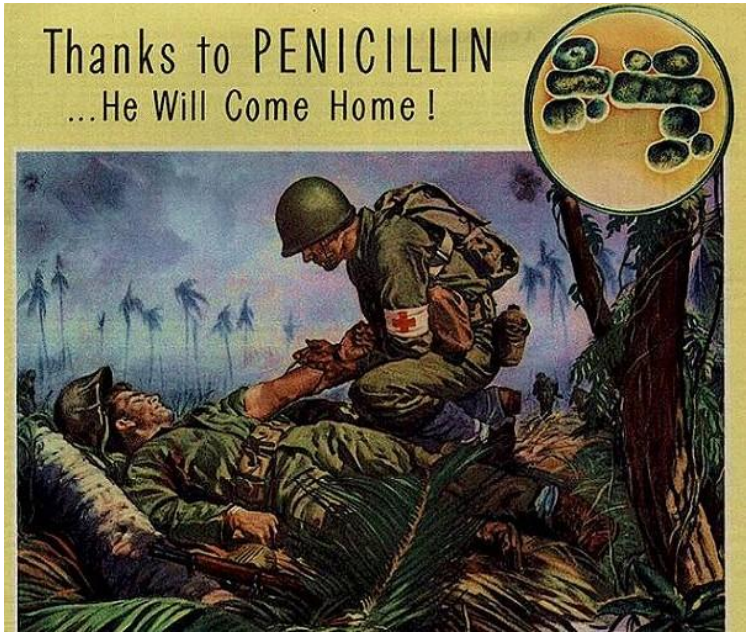
- Received grant funding for investigator initiated study from Merck & Co., Inc.,

OBJECTIVES

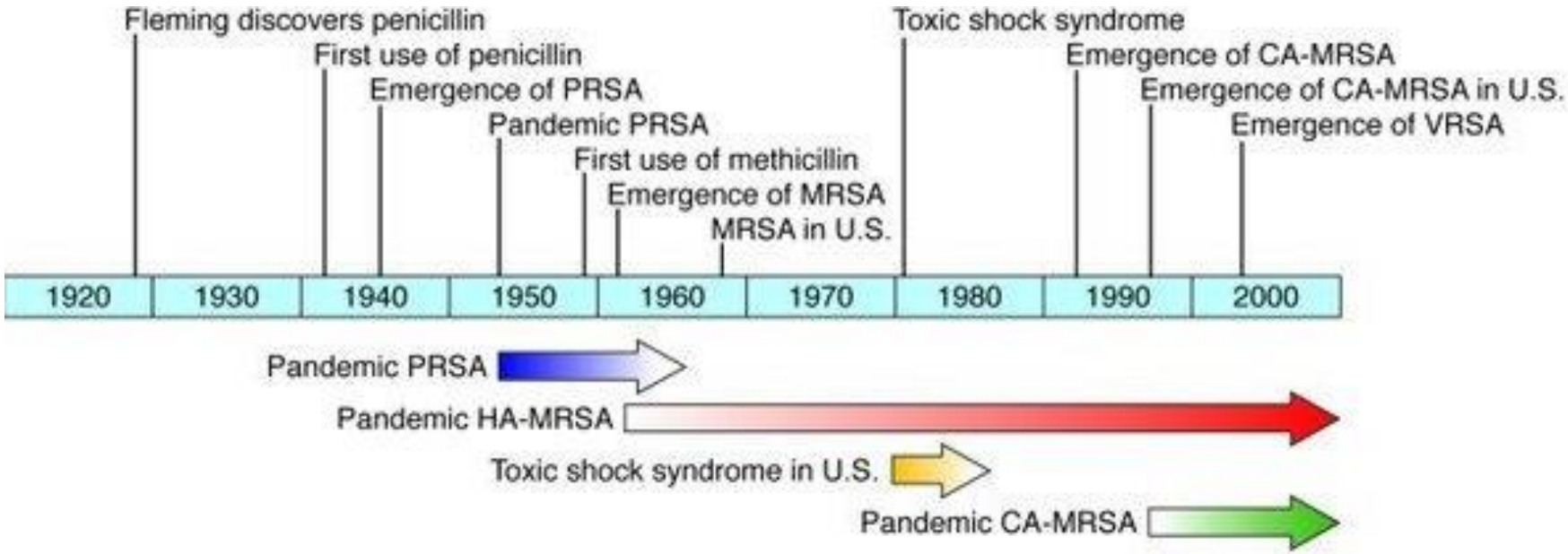
- Describe the need for antimicrobial stewardship in all health care facilities
- Recognize availability of various local and national antimicrobial stewardship implementation resources
- Understand the role of health care providers in promoting appropriate antibiotic use in various health care settings

Importance of Preserving Antibiotic Effectiveness

- Prior to introduction of penicillin, invasive Staphylococcal infections commonly resulted in fatal outcomes
  - Mortality rate of 82% for Staphylococcal bacteremia in a Boston hospital (1941)
- Penicillin discovered and utilized for battlefield injuries in WWII
- Widely available by 1944
  - Prognosis of Staphylococcal infections improved dramatically

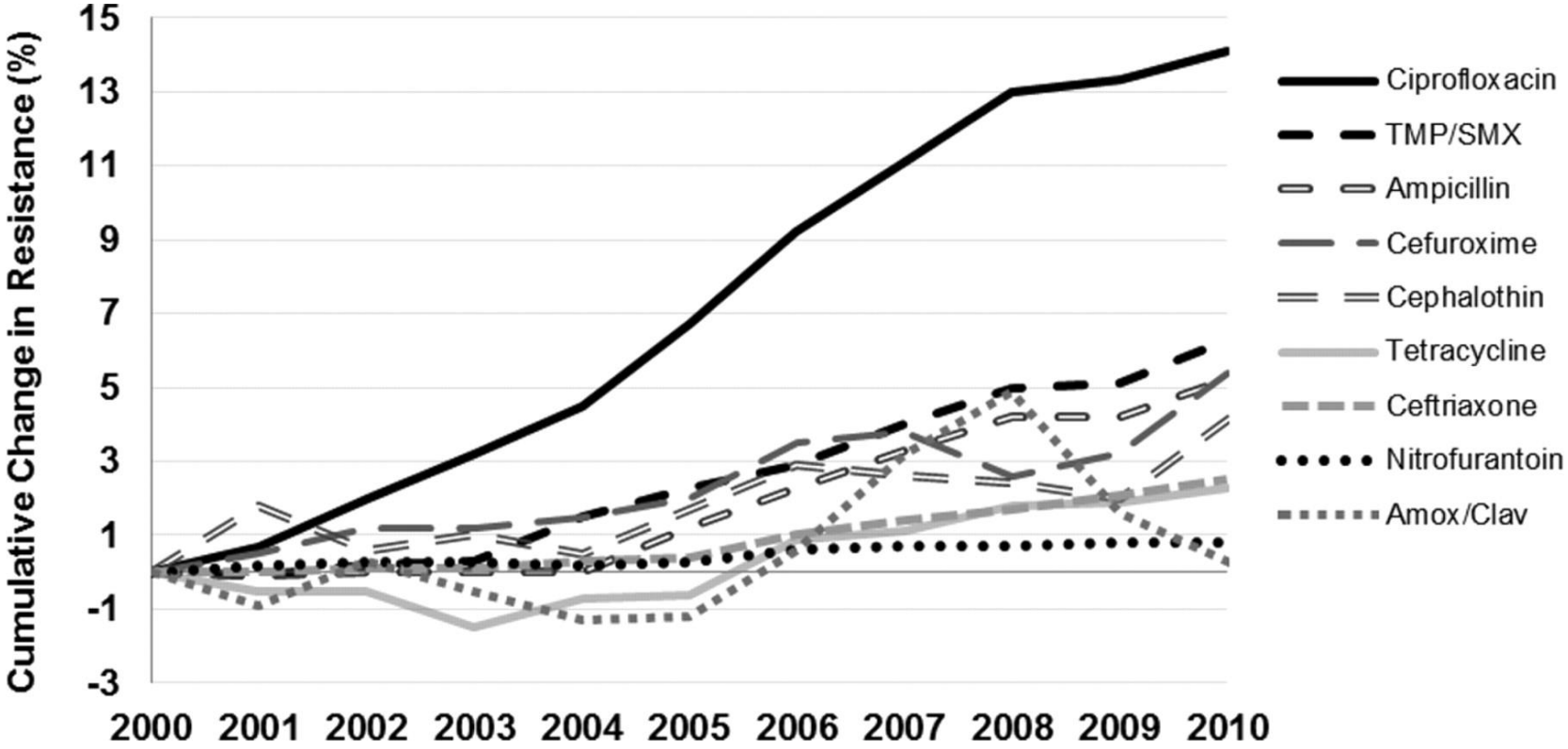


The emergence of Methicillin-resistant *Staphylococcus aureus* (MRSA)



DeLeo et al. *J Clin Invest* 2009

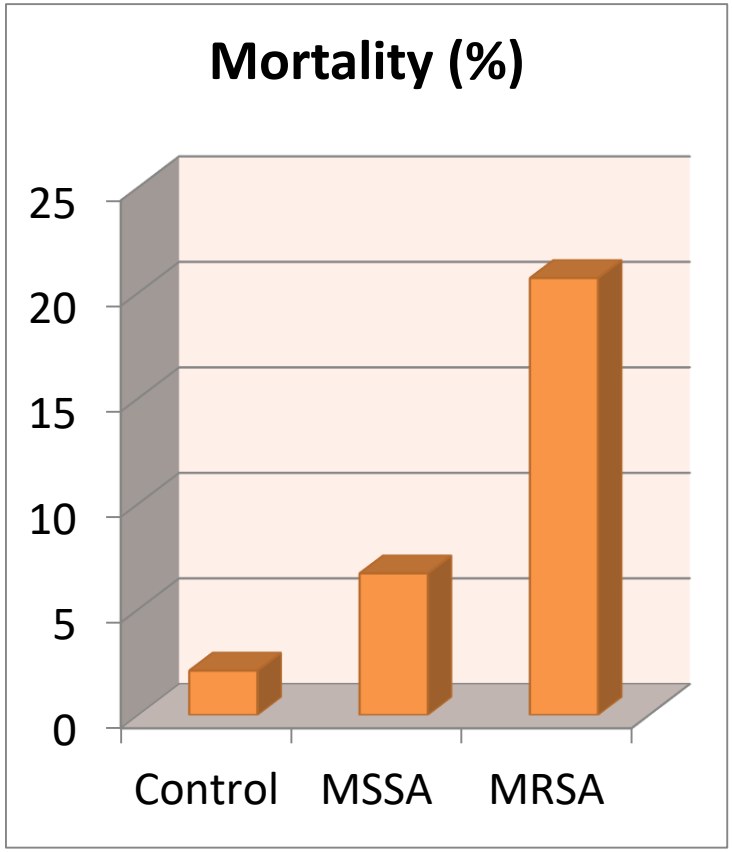
Cumulative Annual Change in *E. coli* Antimicrobial Resistance in Outpatient Urinary *E. coli* Isolates from 2001 to 2010.

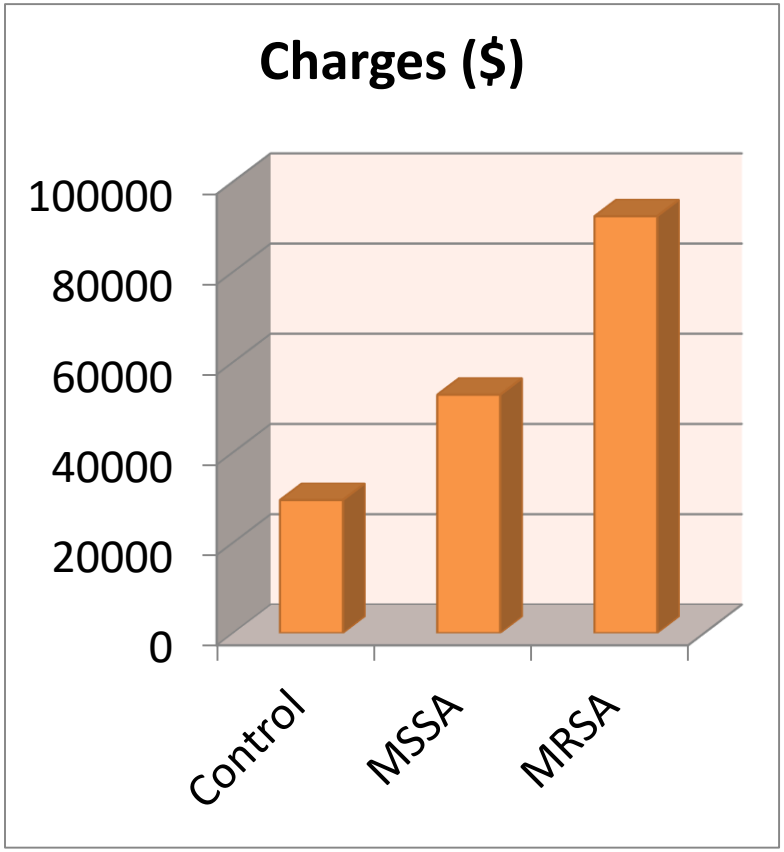


Sanchez G V et al. *Antimicrob. Agents Chemother*. 2012;56:2181-2183.

Increased Resistance = Worse Outcome + Higher Healthcare Cost

Surgical Site Infections: 479 patients: 193 control, 165 MSSA, 193 MRSA





Engemann. *Clin Infect Dis*. 2003;36:592.

MRSA Infections in Nebraska

Methicillin-Resistant *Staphylococcus aureus* | CLABSI, CAUTI, SSI | Combined Years (2011-2014)

SELECT STATE OR REGION

SELECT PHENOTYPE

SELECT INFECTION TYPE

SELECT YEAR

Nebraska % Resistance

47.8%

RESISTANT

NUMBER RESISTANT 97

NUMBER TESTED 203

National % Resistance

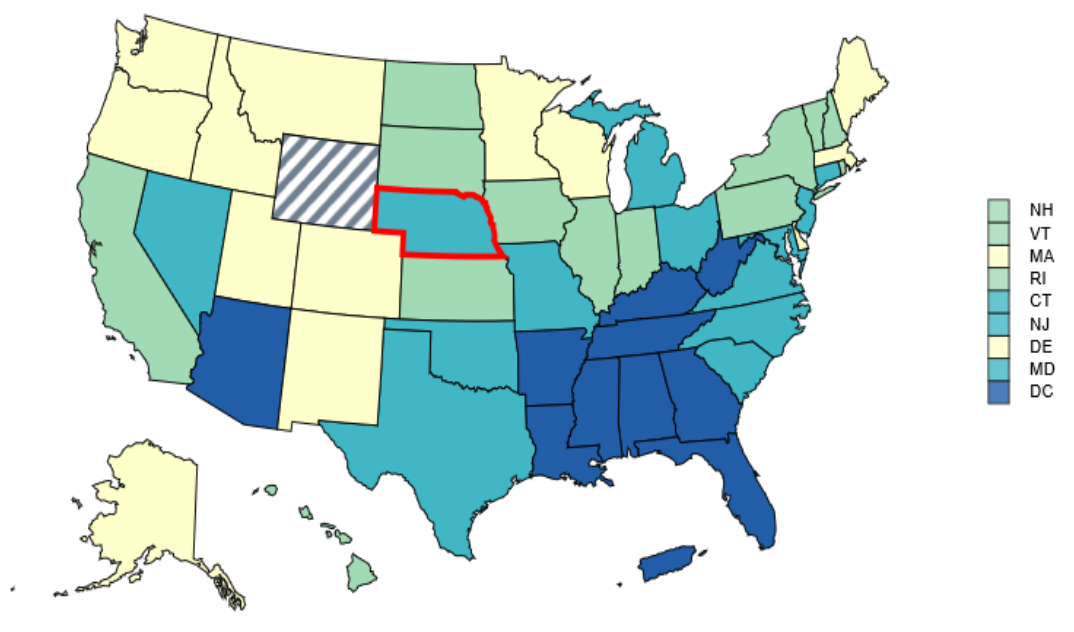
46.4%

RESISTANT

NUMBER RESISTANT 20104

NUMBER TESTED 43331

Table



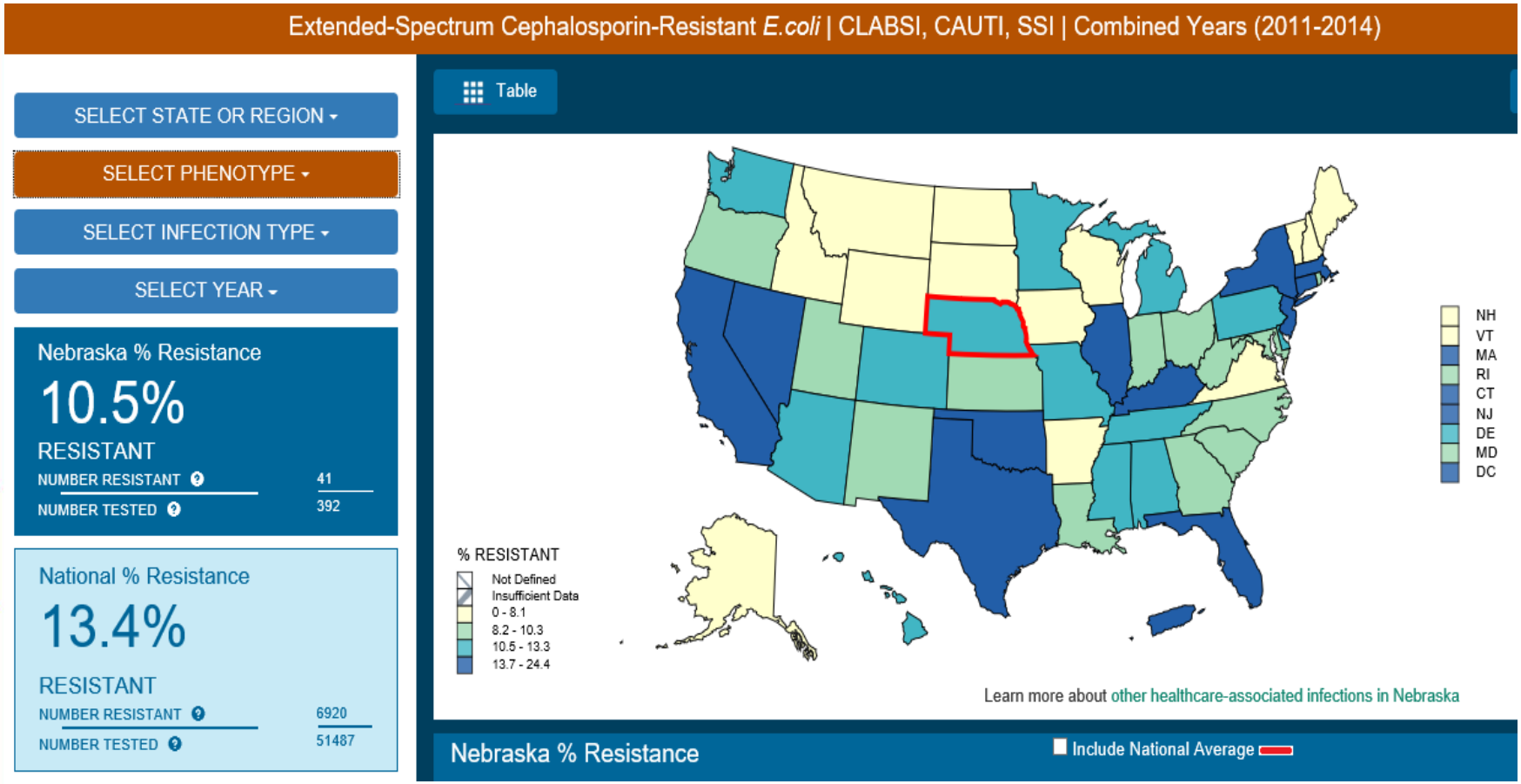
Learn more about other healthcare-associated infections in Nebraska

Nebraska % Resistance

Include National Average

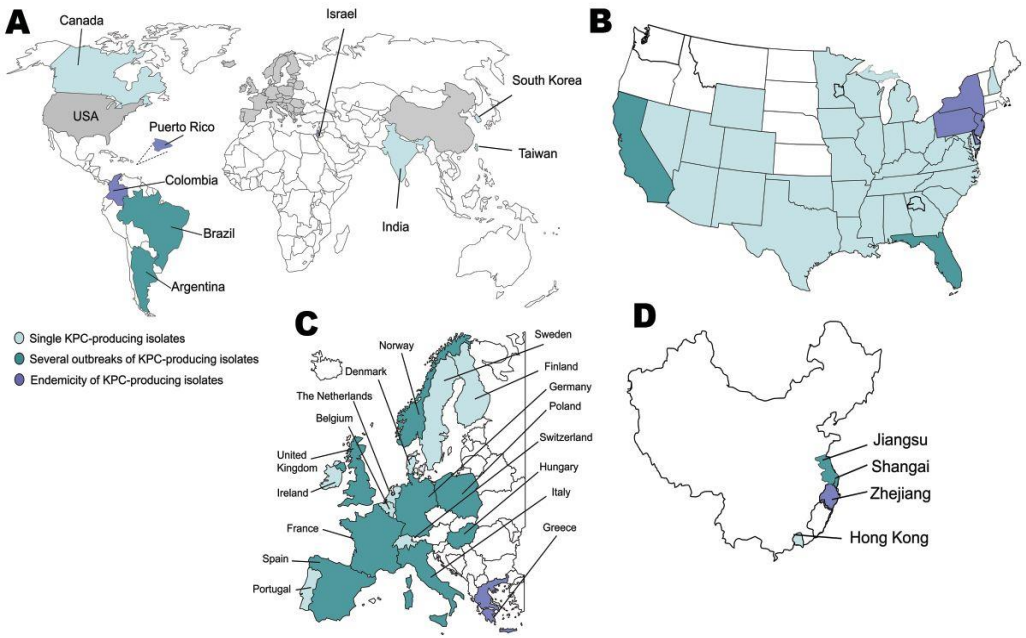
https://gis.cdc.gov/grasp/PSA/MapView.html Accessed on 3/31/18

E coli resistance to Extended Spectrum Cephalosporin

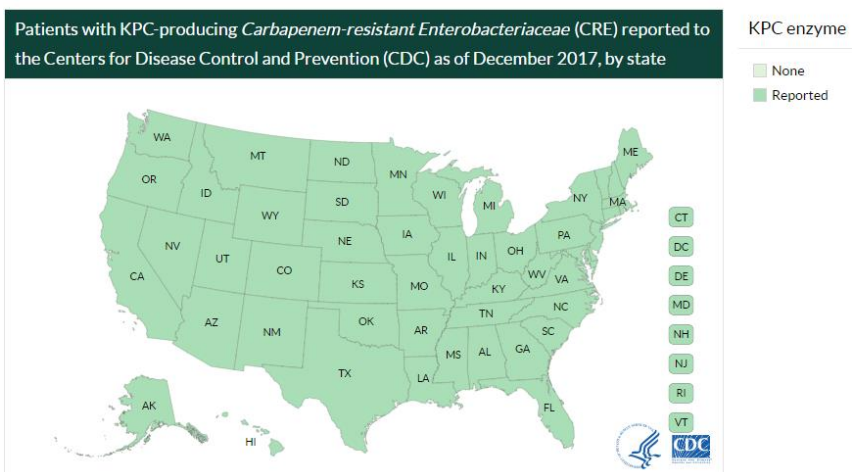


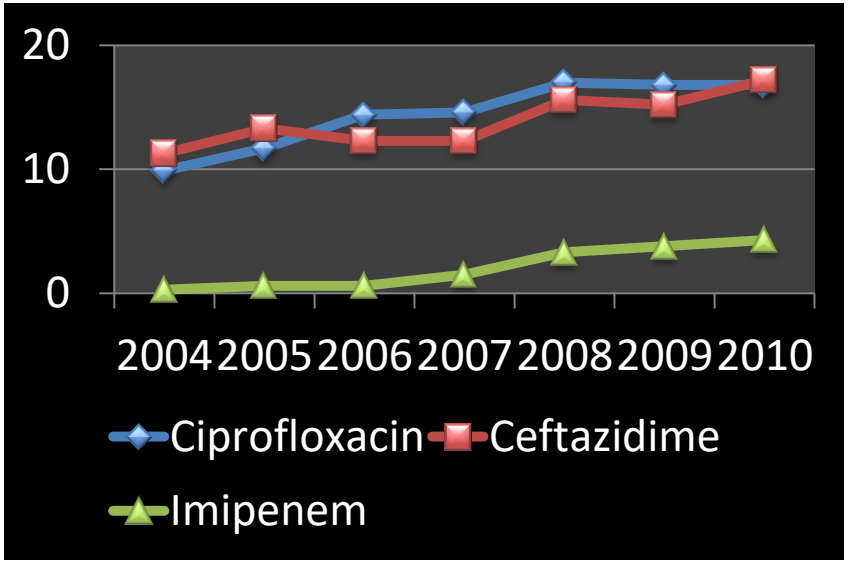
https://gis.cdc.gov/grasp/PSA/MapView.html Accessed on 3/31/18

Global KPC Spread



Klebsiella pneumoniae **Resistance in Inpatients, USA 2004-2010, TSN Database**





https://www.cdc.gov/hai/organisms/cre/trackingcre.html Accessed on 4/6/18

Nordmann P. Emerg Infect Dis. 2011;17:1791-8.
Sanchez GV. Emerg Infect Dis. 2013;19:133-6.

Antibiotic Use in Nebraska

Antibiotic Prescriptions Dispensed in U.S. Community Pharmacies Per 1000 Population | All Antibiotic Classes | 2015

SELECT STATE

SELECT DRUG CLASS

SELECT YEAR

National:

838

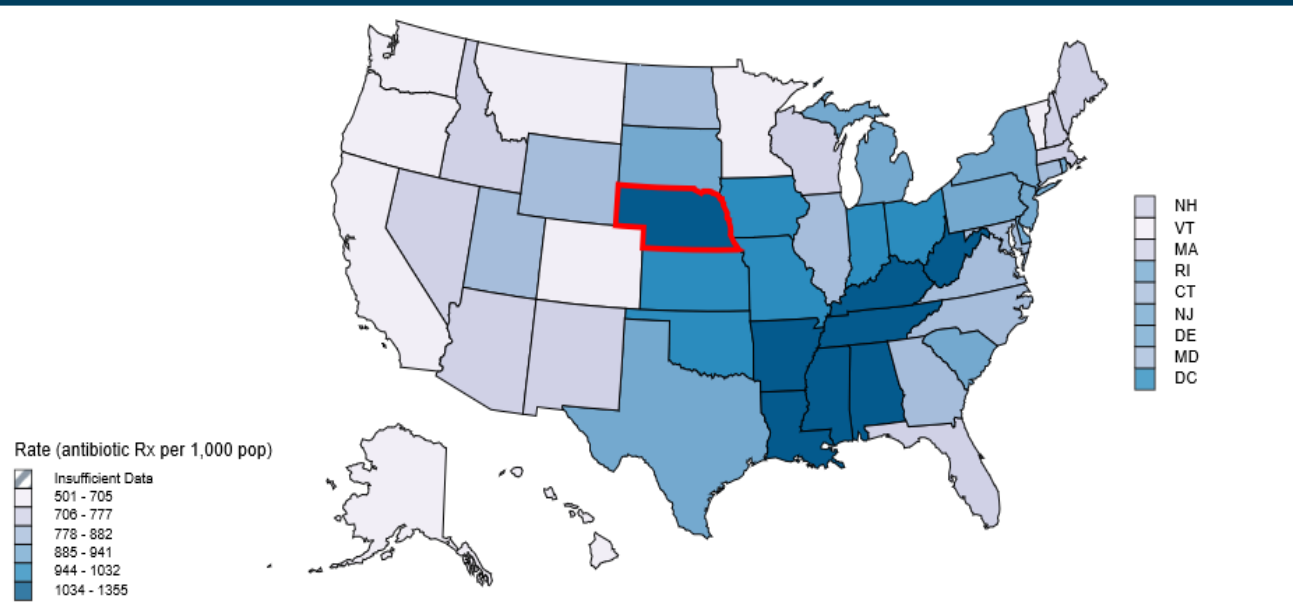
antibiotic prescriptions dispensed per 1000 population

Nebraska:

1072

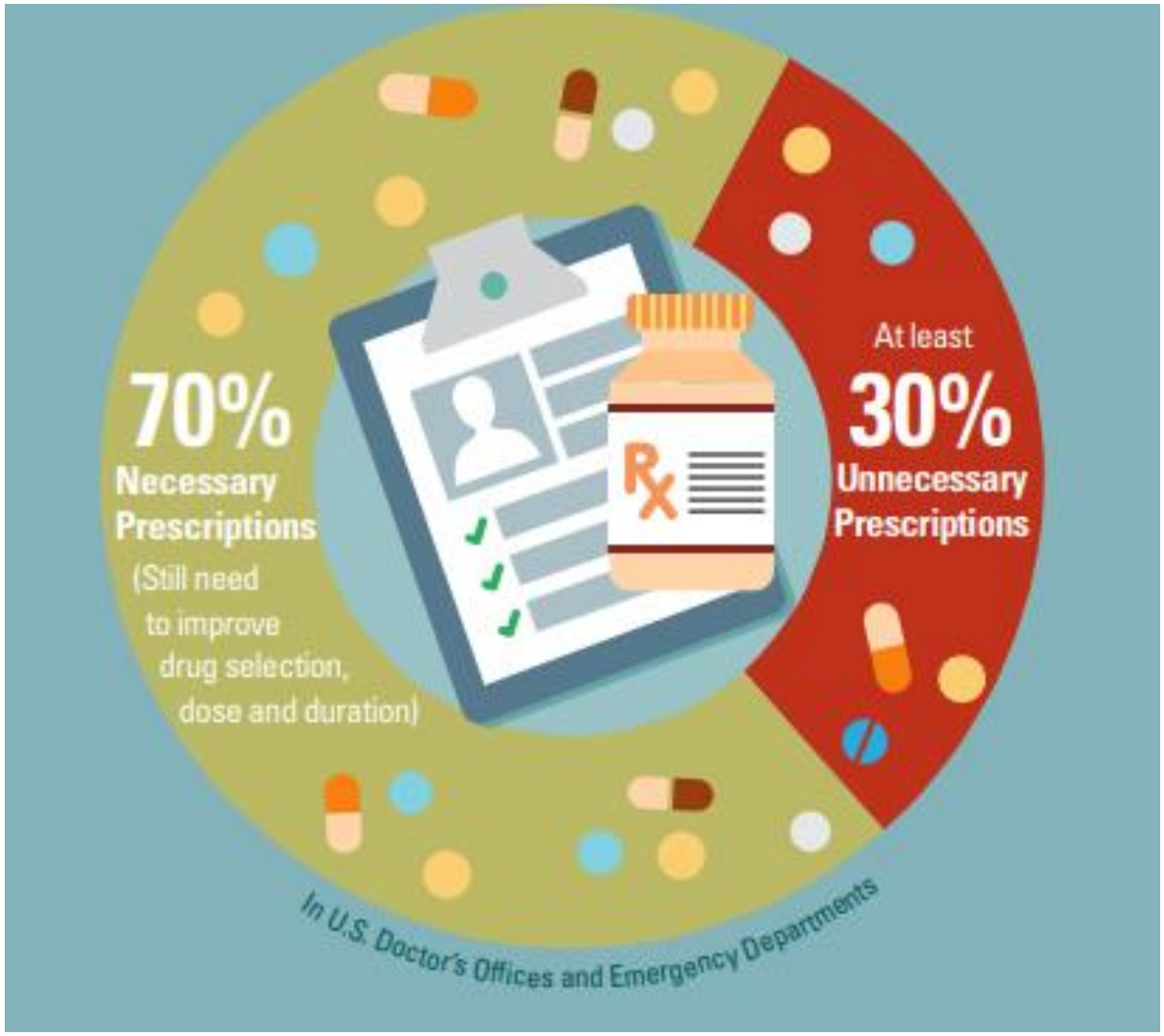
antibiotic prescriptions dispensed per 1000 population

Map | Table | Bar Chart | DOWN



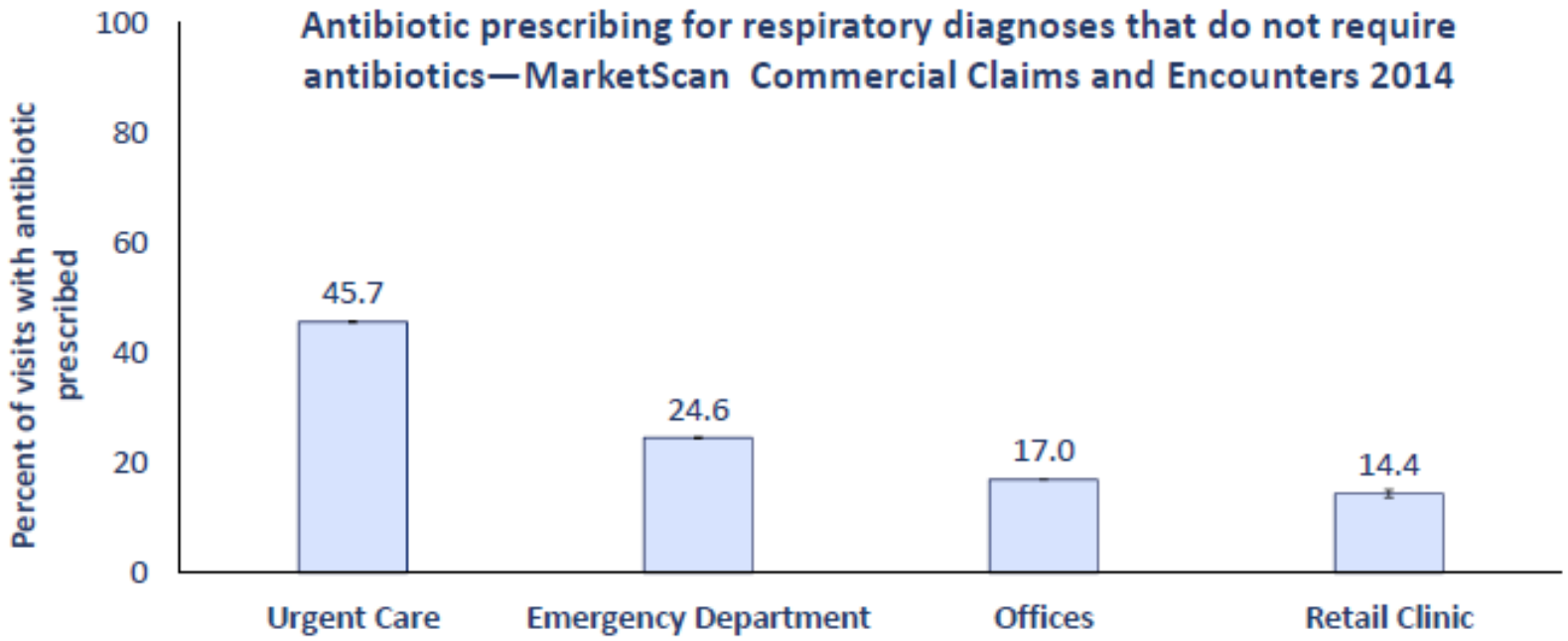
https://gis.cdc.gov/grasp/PSA/AUMapView.html Accessed on 3/31/18

Antibiotic Use in Outpatient Setting in the US



Fleming-Dutra KE at al. *JAMA.* 2016;315(17):1864-1873

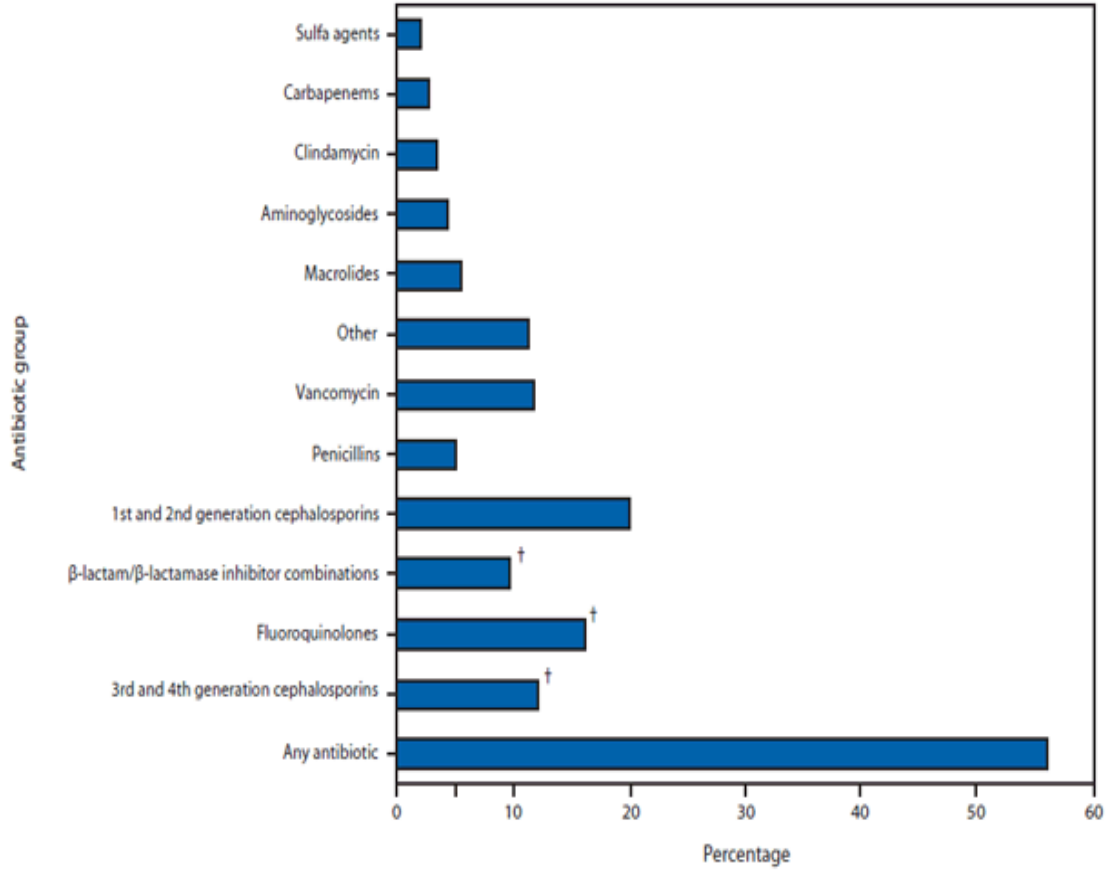
https://www.cdc.gov/antibiotic-use/community/pdfs/16_265113-b_antibioresis_infographic_508.pdf Accessed on 3/31/18



Palms et al. ID week 2017

Antibiotic Use in Hospitals

FIGURE 1. Percentage of hospital discharges with at least one antibiotic day, by antibiotic group — 323 hospitals, United States, 2010*



Opportunities were identified to improve 37.2% of the prescriptions

* Data provided by Truven Health MarketScan Hospital Drug Database.

† Antibiotics from these three groups, which are considered to place patients at high risk for developing *Clostridium difficile* infection, were administered to 29.8% of the patients.

Alternate Text: The figure above shows the percentage of hospital discharges with at least 1 antibiotic day, by antibiotic group, in 323 hospitals in the United States during 2010. In 2010, based on data obtained from all 323 hospitals, 55.7% of patients received an antibiotic during their hospitalization, and 29.8% received at least 1 dose of broad-spectrum antibiotics.

Fridkin S et al. MMWR Morb Mortal Wkly Rep. 2014;63(9):194-200.

Inappropriate Antibiotic Use in Nursing Homes

Systemic Antibiotic Use in Nursing
A Quality Assessment
James G. Zimmer, MD, David W. Bentley, MD, Willi
Nancy M. Watson, MS

and Characteristics of Antibiotic Use
Home Patients
PhD, JD,† Leslye Fitterman, MS,† and
JAGS 39:963–972, 1991

The Appropriate
Fluoroquinolon
in the Long-Te
Terri-Diann Pickering,§ Jerry H. Gu
Jerry Avorn, MD†§

Provide Chronic Care
Walter, PhD,
Kwan, BScPhm, MSc,
MED 2001;16:376–383.

Patterns of Antimicrobial Use fo
Older Residents of Long-Term Care
Paschalis Vergidis, MD,* Davidson H. Hamer, MD,*†‡§‖ Simin N. Mevdani.
Gerard E. Dallal, PhD,§‖ and Tamar F. Barlam, MD, MSc*
JAGS 59:1093–1098, 2011

Frontiers in Medicine | July 2016 | Volume 3 | Article 30

25% to 75% of Antibiotic Use deemed Unnecessary or Inappropriate

Protecting Human Microbiome

Bacteria, fungi, viruses, and other microbes (germs) live naturally on our skin and in our gut and other places within our body. These microbes make up a community called the microbiome. Antibiotics can destroy your microbiome the way a wildfire can destroy a forest.

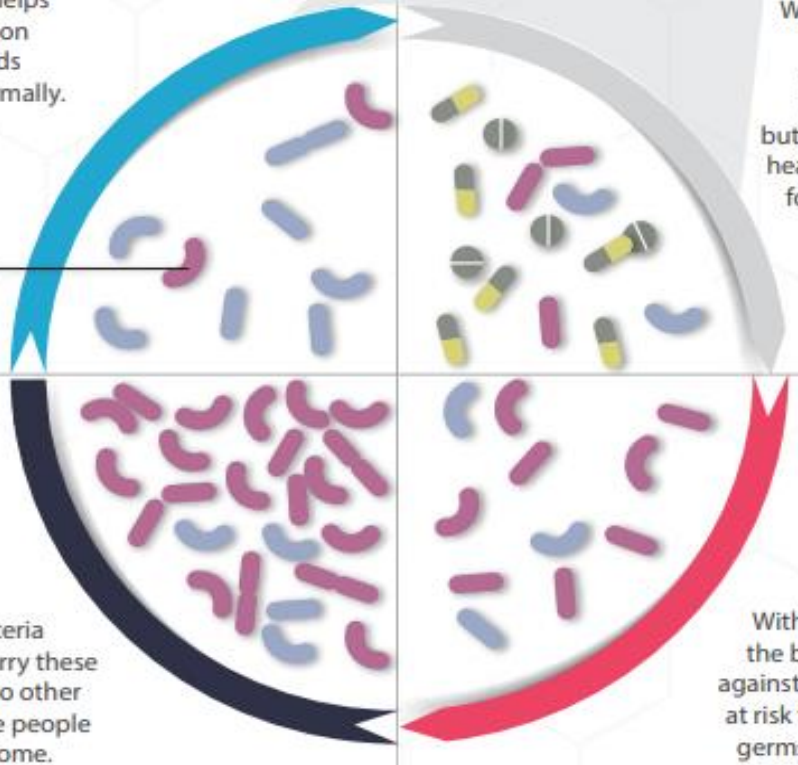
1

A healthy microbiome helps protect you from infection because your body needs bacteria to function normally.

2

When you take antibiotics to treat an infection, the antibiotics not only kill the infection-causing bacteria, but the bacteria that keep you healthy can also be destroyed for several months. This can disrupt, or unbalance, a healthy microbiome.

Infection-causing bacteria, which can be antibiotic resistant.



When drug-resistant bacteria take over, patients can carry these germs and spread them to other people, especially if those people have a disrupted microbiome.

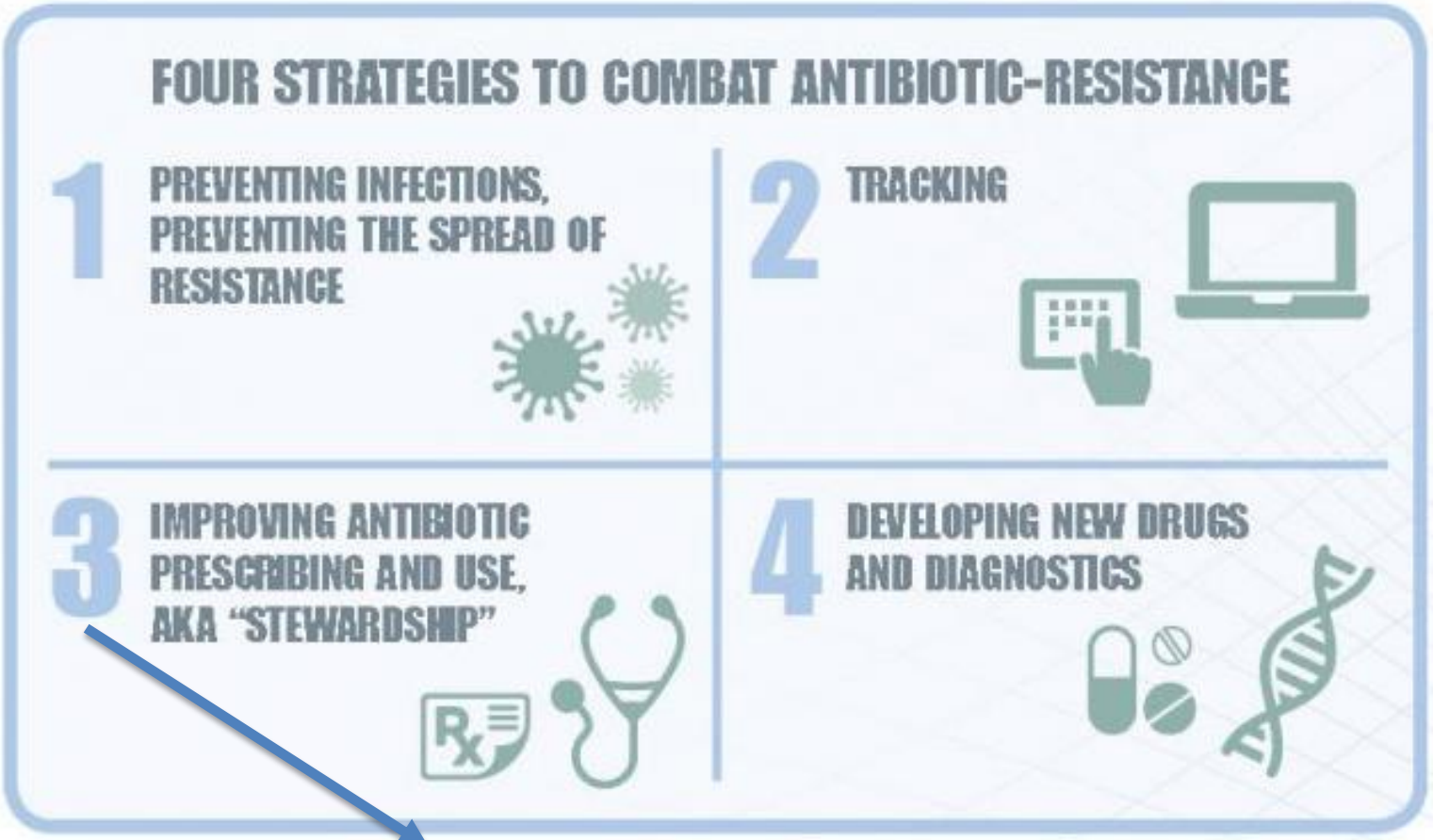
4

With a disrupted microbiome, the body is less able to defend against infection, putting people at risk for infections from deadly germs like *C. difficile* and MRSA.

3

https://www.cdc.gov/drugresistance/pdf/ARSI-Microbiome-Infographic-2017.pdf Accessed 3/31/18

Strategies to Combat Antibiotic Resistance



Might be the single most important step to greatly slow down development and spread of antibiotic resistant infections

https://www.cdc.gov/antibiotic-use/stewardship-report/improving-antibiotic-use.html Accessed on 3/31/18

Joint Commission Requirement

Joint Commission

Requirement

New Antimicrobial Stewardship Standard

APPLICABLE TO HOSPITALS AND CRITICAL ACCESS HOSPITALS

Effective January 1, 2017

Medication Management (MM)

Note: *An example of an educational tool that can be used for patients and families includes the Centers for Disease Control and Prevention's Get Smart document, "Viruses or Bacteria—What's got you sick? at http://www.cdc.gov/getsmart/community/downloads/getsmart-chart.pdf.*

Joint Commission

Requirement

New Antimicrobial Stewardship Standard

APPLICABLE TO NURSING CARE CENTERS

Effective January 1, 2017

Medication Management (MM)

Note: *An example of an educational tool that can be used for patients and families includes the Centers for Disease Control and Prevention's Get Smart document, "Viruses or Bacteria—What's got you sick? at http://www.cdc.gov/getsmart/community/downloads/getsmart-chart.pdf.*

New CMS Regulation

Facility must establish an Infection Prevention and Control Program (IPCP) that includes:

- System for preventing, identifying, reporting, investigating and controlling infections
- Written standards, policies and procedures
- Antibiotic stewardship program
- System for recording incidents identified under IPCP and corrective actions taken

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

42 CFR Parts 405, 431, 447, 482, 483, 485, 488, and 489

[CMS–3260–F]

RIN 0938–AR61

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities

AGENCY: Centers for Medicare & Medicaid Services (CMS), HHS.
ACTION: Final rule.

https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities, Accessed October 6, 2016

What is Antimicrobial Stewardship ?

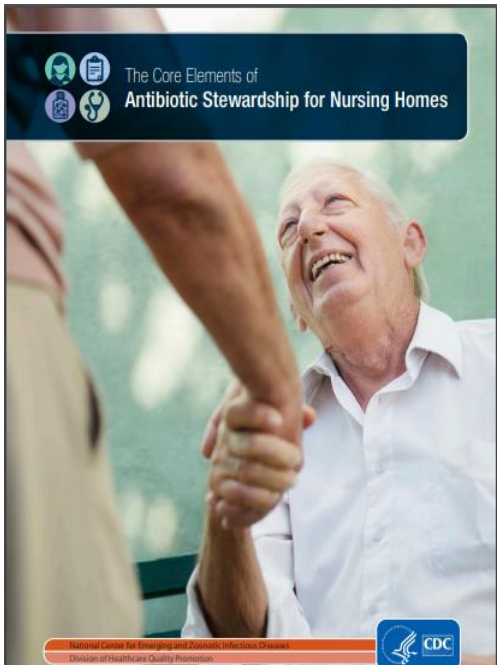
Set of commitments and activities designed to optimize the treatment of infections while reducing the adverse events associated with antibiotic use.

It can:

- Improve Patient Outcomes
- Decrease *C. difficile* infections
- Decrease Antibiotic Resistance
- Decrease Costs

https://www.cdc.gov/antibiotic-use/stewardship-report/improving-antibiotic-use.html Accessed on 3/31/18

Core Elements for Antimicrobial Stewardship Programs



https://www.cdc.gov/antibiotic-use/healthcare/implementation/core-elements-small-critical.html

https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

https://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html

https://www.cdc.gov/antibiotic-use/healthcare/implementation/core-elements.html

Accessed on 4/1/2018

Number of Core Elements

For Hospitals and LTCF:

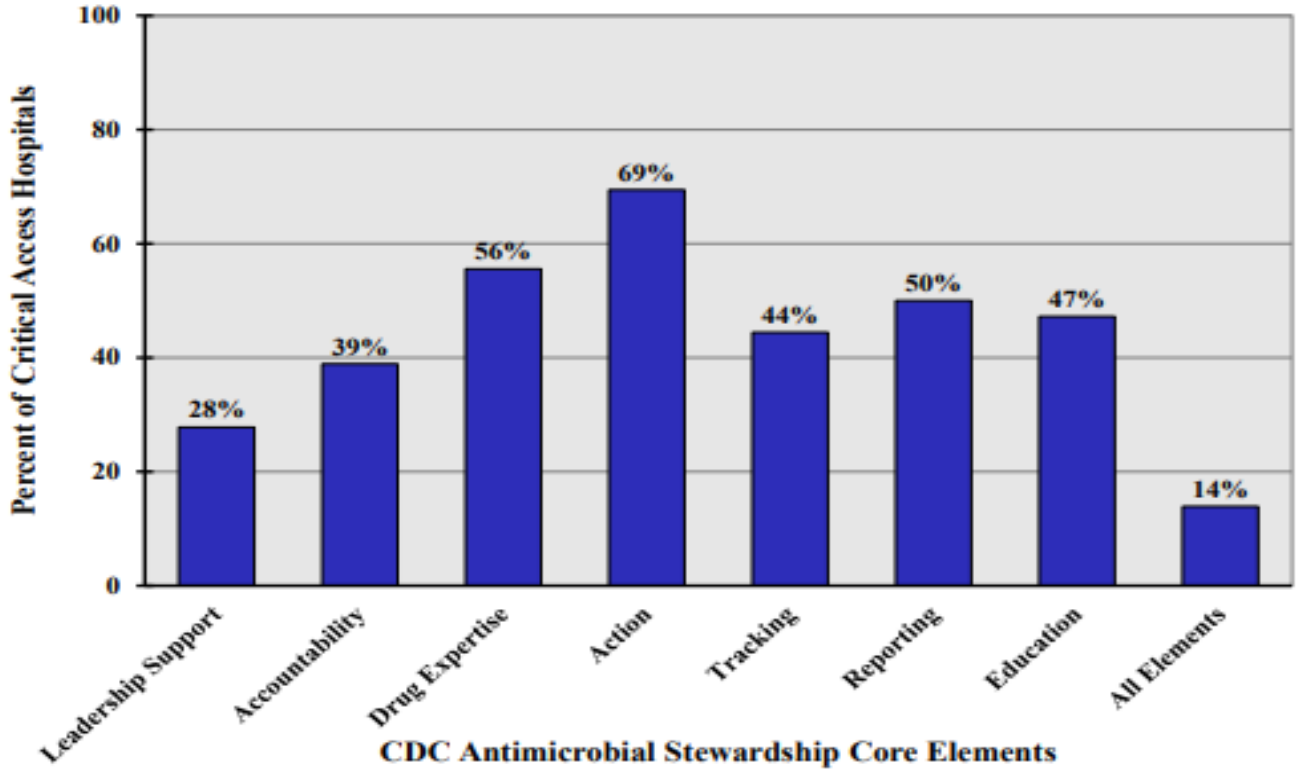
- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education

For Outpatient Settings:

- Commitment
- Action for policy and practice
- Tracking and reporting
- Education and expertise

Antimicrobial Stewardship Programs in Critical Access Hospitals in Nebraska

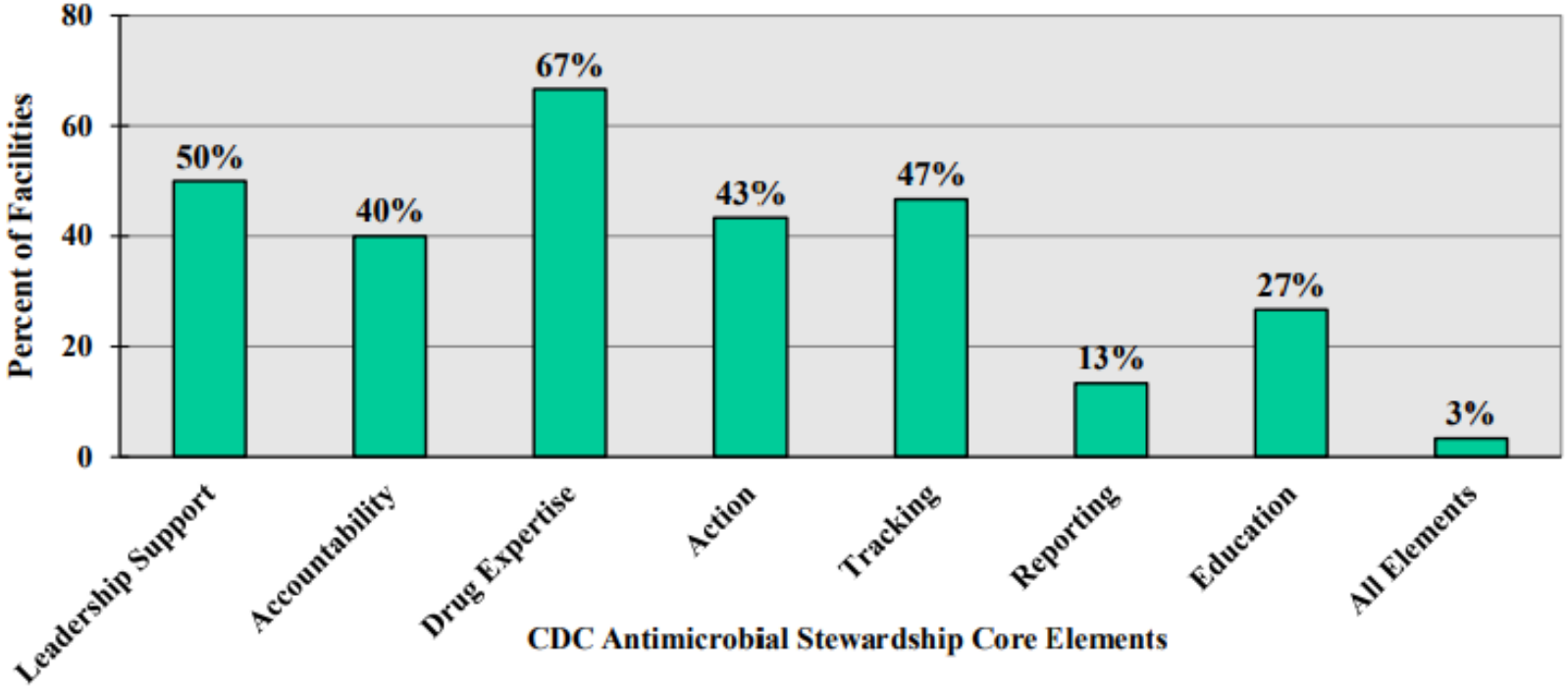
Figure 2. Frequency of Implementation of Antimicrobial Stewardship Core Elements in Critical Access Hospitals (N = 36)



Chung P et al. ID Week 2017

Antimicrobial Stewardship Programs in LTCF in Nebraska

Figure 2. Frequency of Implementation of Individual Antimicrobial Stewardship Core Element in Long-Term Care Facilities Surveyed (N = 30)



Who is responsible for Antimicrobial Stewardship?

How we can be good antimicrobial stewards

Actor	What it means to be good antimicrobial stewards	Example actions
Prescriber	I use antimicrobials responsibly by	• Making accurate diagnoses • Following local antimicrobial guidelines • Regularly reviewing the need for therapy
Nurse	I help ensure antimicrobials are used responsibly by	• Taking cultures at appropriate times • Ensuring patients understand how to take antimicrobials on discharge
Patient	I use antimicrobials responsibly by	• Taking antimicrobial courses as recommended by the prescriber • Not storing or using leftover antimicrobials
Antimicrobial stewardship team	We help others in our institution use antimicrobials responsibly by	• Developing guidelines for antimicrobial use • Supporting audit and feedback for prescribers • Educating prescribers
Hospital governance	Our institution uses antimicrobials responsibly by	• Ensuring sufficient sustainable and dedicated funding for antimicrobial stewardship teams • Monitoring antimicrobial use and resistance • Investing in a Clinical Decision Support System • Enabling formulary restrictions
Producer/farmer	I use antimicrobials responsibly by	• Diagnosing selectivity • Not using antimicrobials as growth promoters
Pharmaceutical company	Our company ensures antimicrobials are used responsibly by	• Limiting advertising of antimicrobials, especially broad spectrum • Helping ensure there is a continuous supply of antimicrobials
National policy maker	Our country uses antimicrobials by	• Prioritizing and funding antimicrobial stewardship activities • Supporting the use of quality metrics and pay for performance

Everyone is responsible

Dyar OJ et al. Clin Microbiol Infect 2017;23:793

Broader Antimicrobial Stewardship Team

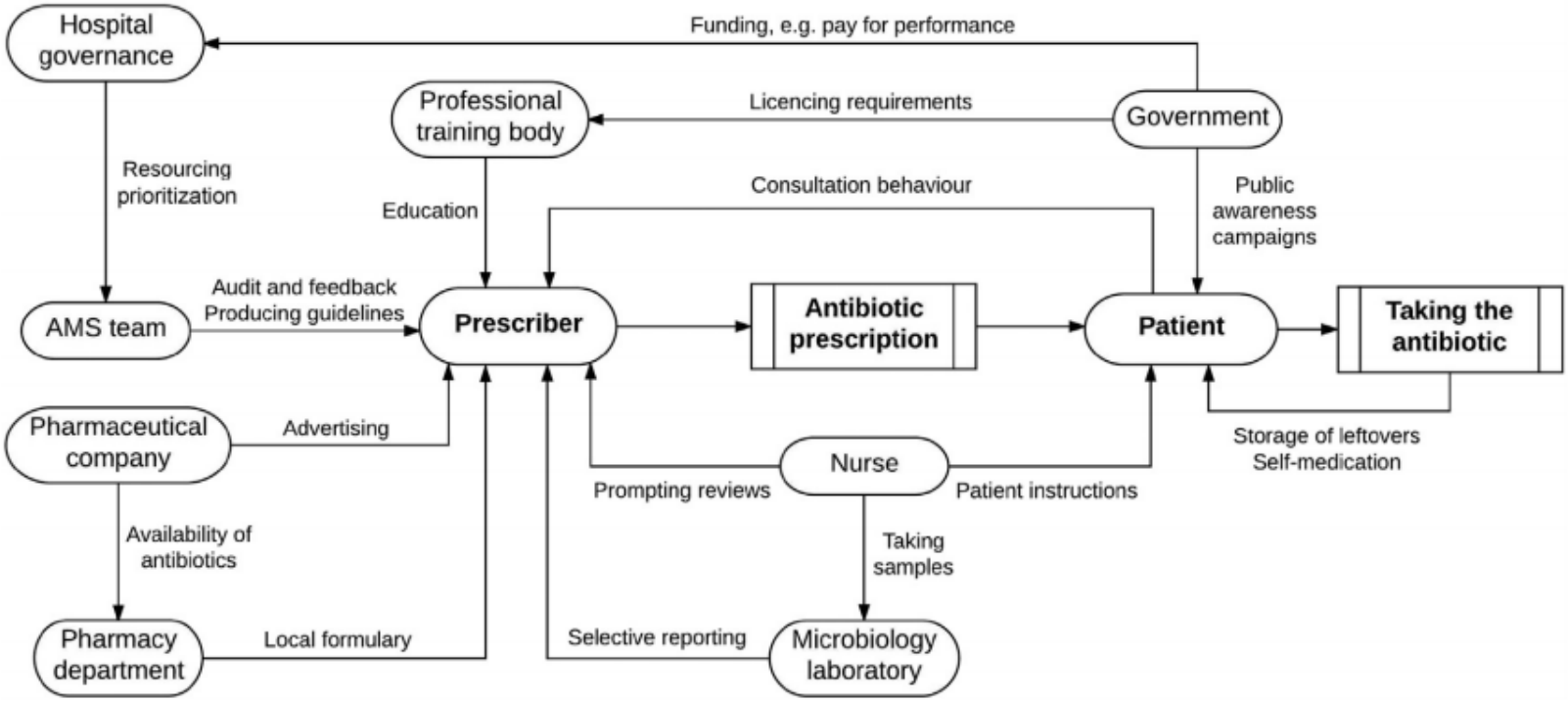


Fig. 2. Examples of actors and actions within antimicrobial stewardship. AMS, Antimicrobial stewardship.

What Is Our Responsibility as ASP Team Member?

- Understand reasons for inappropriate antibiotic use in our settings.
- Follow best practice recommendations when treating suspected infections
- Identify barriers to appropriate antibiotic prescribing
- Support institutional efforts in promoting culture of optimal antibiotic use and removing identified barriers
- Educate ourselves, our patients and their families about proper antibiotic use and risks associated with antibiotics

Areas of Antibiotic Misuse Identified by Acute Care Hospitals in Nebraska

Perceived Areas of Misuse
Inappropriate regimen
Excessive duration of therapy
Questionable indications
Use of agent with broader spectrum than necessary
Inappropriate treatment of asymptomatic bacteriuria
ED regimen continued inpatient
Overuse of specific antimicrobial agents
Fluoroquinolones
Piperacillin-tazobactam
Others
Missed opportunities for IV-to-PO switch
Lack of treatment protocols
Protocols with too many antimicrobial choices
Unclear allergy documentation
Lack of de-escalation efforts from prescribers

Chung et al. SHEA spring Conference 2018

Area of Antibiotic Misuse Identified by Nebraska LTCF

Area of Misuse
Treatment of asymptomatic bacteriuria
Antibiotic for viral infections
Excessive duration of therapy
Diagnostic tests not sent before treatment

Chung P et al. SHEA Spring Conference 2018

Reasons for Antibiotic Misuse in Outpatient Settings

TABLE 1.
Reasons for Antibiotic Misuse in Outpatient Settings

• Unreasonable expectations or demands related to antibiotics by patients (or parents).
• Inadequate time available to physicians for providing explanation to patients (or parents) about why antibiotics are not required.
• Misdiagnosis of nonbacterial infections by providers.
• Diagnostic and treatment uncertainty of providers.
• Providers having inadequate knowledge or failing to act on knowledge.
• Providers honoring a patient's request for an antibiotic prescription to maintain a good relationship even when a viral infection is suspected.
• Concerns of litigation.

Ashraf MS et al. NC Med J. 2016;77(5):346-349

Simple Actions We Can Take to Become Antibiotic Steward in Everyday Practice

- Avoid Prescribing unnecessary antibiotics for acute upper respiratory tract infections.
- Avoid prescribing for asymptomatic bacteriuria
- Do not prescribe antibiotics for longer than recommended duration
- Utilize diagnostic tests where applicable to guide initiation or de-escalation of antibiotic
- Use narrowest spectrum antibiotic effective for treatment when antibiotic use is indicated
- Perform antibiotic time out (post-prescribing review)

Acute Rhinosinusitis

More than 30 million diagnosis a year

90-98% of cases are viral

Antibiotics may not be helpful even in rare bacterial cases

Diagnose acute bacterial rhinosinusitis based on symptoms:

- **Severe (>3-4 days) =** fever ≥39°C (102°F) and purulent nasal discharge or facial pain OR
- **Persistent (>10 days) without improvement** = nasal discharge, facial pain, congestion OR
- **Worsening (3-4 days)** = worsening or new onset fever, facial pain, congestion after initial improvement of symptoms

Sinus radiographs not routinely recommended

If a bacterial infection is established:

- **Watchful waiting** is reasonable for uncomplicated cases with reliable follow-up
- **First-line therapy** = Amoxicillin/ clavulanate 875mg BID x 5-7 days
- **Not recommended** = Macrolides (azithromycin, etc.) due to high levels of resistance in *Streptococcus pneumoniae* (~40%).
- **Penicillin-allergy** = doxycycline or levofloxacin

https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html Accessed on 4/1/18

Acute Uncomplicated Bronchitis

Most common diagnosis made for patients presenting with cough in clinics

Colored sputum does not indicate bacterial infection

Pneumonia is exceedingly rare among healthy adults in the absence of:

- abnormal vital signs (pulse ≥ 100 beats/min, respiratory rate ≥ 24 breaths/min, or temperature ≥ 38 °C) and
- abnormal lung examination findings (focal consolidation, egophony, fremitus).

Chest radiography is not indicated in most cases

Routine treatment with antibiotics <u>is not</u> recommended

Symptomatic treatment can be considered (although evidence is limited)

- Cough suppressants
- First generation antihistamines
- Decongestants

https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html Accessed on 4/1/18

Common Cold or Non-Specific Upper Respiratory Tract Infection

Third most frequent diagnosis in office visits

At least 200 viruses can cause the common cold.

Prominent cold symptoms include fever, cough, rhinorrhea, nasal congestion, postnasal drip, sore throat, headache, and myalgia.

Do not use antibiotics for viral upper respiratory tract infections

Weigh the benefits and harms of symptomatic therapy

- Decongestants (pseudoephedrine or phenylephrine) combined with a first-generation antihistamine may provide short-term symptom relief.
- Acetaminophen or non-steroidal anti-inflammatory drugs can also be used
- Evidence is lacking to support antihistamines as monotherapy, opioids, and intranasal corticosteroids as effective treatments for cold symptom relief.

https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html Accessed on 4/1/18

Pharyngitis

Group A beta-hemolytic streptococcal (GAS) infection is the only common indication for antibiotic therapy for sore throat cases.

Only 5–10% of adult sore throat cases are caused by GAS.

Patients with pharyngitis should be evaluated using the Centor criteria (fever, tonsillar exudates, tender cervical lymphadenopathy, absence of cough)

- Patients meeting <2 criteria should not be tested or treated for GAS
- Those who meet ≥2 criteria should receive a Rapid Strep Test (RST) as clinical features alone are not adequate to distinguish between GAS and viral pharyngitis
- Throat cultures are not routinely recommended for adults.

Antibiotic treatment NOT recommended for patients with negative RST.

- **First-line Therapy** = Amoxicillin 500mg BID or Penicillin V 500mg BID
- **Non-Severe Penicillin Allergy** = Cephalexin 500mg BID or Cefuroxime 250mg BID
- **Severe Penicillin Allergy** = Clindamycin 300mg TID or macrolides (but avoid macrolides and clindamycin if possible as resistance in GAS is increasingly common)
- **Recommended treatment duration** for all treatment options is 10 days (exception azithromycin = 5 days).

https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html Accessed on 4/1/18

Acute Uncomplicated Cystitis

Cystitis is among the most common infections in women usually caused by *E. coli*

Classic symptoms include dysuria, frequent voiding of small volumes, and urinary urgency.

Hematuria and suprapubic discomfort are less common.

Do not prescribe antibiotics in the absence of symptoms or for asymptomatic bacteriuria (except in certain specific scenario like pregnancy or before urologic intervention)

For acute uncomplicated cystitis in healthy non-pregnant women:

- **First line agents:** Nitrofurantoin, trimethoprim/sulfamethoxazole (where local resistance is <20%), and fosfomycin (may reserve for more drug resistant bacteria)
- Fluoroquinolones (e.g. ciprofloxacin) should be reserved for situations in which other agents are not appropriate.

https://www.cdc.gov/antibiotic-use/community/for-hcp/outpatient-hcp/adult-treatment-rec.html Accessed on 4/1/18

Develop a System to Review Antibiotic Orders 48 to 72 hours After Antibiotic Start (Antibiotic Time Out)

- Reassess the patient and evaluate for improvement or worsening since initiation of the antibiotics
- Follow up on all the labs including culture results that were sent at the time of antibiotic initiation.
- Evaluate to rule out any adverse event related to the antibiotic use
- Establish whether the signs and symptoms were related to infectious or non-infectious etiology
- Decide whether antibiotics need to be changed/deescalated or stopped
- Make plans for the length of therapy if antibiotics needed to be continued.

Duration of Treatment

ASAP

Table 1. Recommended Duration of Therapy

Infection Syndrome	Typical Duration of Therapy
Uncomplicated cystitis[1,2]	5 days for Nitrofurantoin 3 days for TMP/SMX 1 dose for Fosfomycin 3 days for Fluoroquinolones 3-7 days for Beta-Lactams
Pyelonephritis[1]	7 days for Fluoroquinolones 14 days for TMP/SMX 10-14 days for Beta-Lactams
Catheter-associated urinary tract infection[3] or complicated* UTI[2,4]	7 days if prompt resolution of symptoms 10-14 days if delayed response to therapy
Pneumonia[5]	5-7 days
Bronchitis[6,7]	No antibiotic therapy is recommended
Acute exacerbation of COPD[8]	5 days if treatment criteria met
Influenza[9,10]	5 days for treatment Minimum of 2 weeks, continuing for at least 7 days after the last known case was identified for chemoprophylaxis in influenza outbreak
Pharyngitis, streptococcal[11]	Up to 10 days for penicillin, amoxicillin, 1st-generation oral cephalosporins, clindamycin 5 days for azithromycin
Sinusitis[12]	5-7 days if improvement after 3-5 days of treatment 7- 10 days if delayed response or switched to alternative therapy due to lack of response
Cellulitis or cutaneous abscess[13]	5-7 days
Shingles[14]	7 days for famciclovir, valacyclovir 7-10 days for acyclovir
Clostridium difficile infection[15]	10-14 days 10 days for fidaxomicin
Gastroenteritis, bacterial[16]	3-5 days if treatment criteria met

* Refer to Table 2 for factors associated with complicated UTI

https://asap.nebraskamed.com/

Nebraska ASAP- Statewide Resource

ASAP IS FUNDED BY THE NEBRASKA DHHS HAI TEAM VIA A CDC GRANT.

ASK ASAP A QUESTION RECENT ASAP NEWS

Nebraska Medicine
SERIOUS MEDICINE. EXTRAORDINARY CARE.

ABOUT US ACUTE CARE LONG-TERM CARE ADDITIONAL RESOURCES

ASAP
Nebraska Antimicrobial Stewardship Assessment and Promotion Program

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

PROVIDING YOU WITH THE RESOURCES TO PROMOTE APPROPRIATE ANTIBIOTIC USE, IMPROVE PATIENT OUTCOMES AND PREVENT ANTIBIOTIC RESISTANCE

https://asap.nebraskamed.com/

Links to other Resources From ASAP Website

ADDITIONAL RESOURCES

Home / Additional Resources

Numerous resources are available to improve antibiotic prescribing practices. These resources include ASP education, tools, templates, and guidance documents. Click on a category to the right to view available resources.

- AHRQ TOOLKITS
- CDC CORE ELEMENTS FOR ANTIMICROBIAL STEWARDSHIP
- NEBRASKA MEDICINE ASP
- INFECTIOUS DISEASES TREATMENT GUIDELINES
- NEBRASKA ICAP
- OTHER USEFUL ASP WEBSITES
- ASAP NEWS & HIGHLIGHTS

https://asap.nebraskamed.com/

Nebraska Medicine ASP Website – Recognized National Resource

Nebraska Medicine

Antimicrobial Stewardship Program

- Antimicrobial Stewardship Program
- ASP News
- ASP App
- Antibiograms
- Antimicrobial Guidebook
- Clinical Microbiology
- Clinical Pathways
- Contact Information
- Dosing Protocols
- Meet Our Team
- Other Information
- Pharmacokinetics
- Procalcitonin (PCT) Guidance
- Protected Antimicrobials
- Surgical Prophylaxis Protocol
- Useful Links

https://www.nebraskamed.com/for-providers/asp

Consider Implementing and Following Institutional Guidance for Diagnosis and Treatment of Infections

Nebraska Medicine

Recent Updates

- Winter 2018
  - Penicillin Allergy Guidance Document
  - Peritoneal Dialysis Antimicrobial Dosing Recommendations
- Fall 2017
  - Bezlotoxumab Added to Formulary
  - C. difficile Treatment Guidelines Updated
  - Diabetic Foot Infection Treatment Guideline Created
- Summer 2017
  - Rapid Blood Culture ID Panel Guidance Updated
  - Miltefosine Added to Formulary
  - Isavuconazole Added to Formulary

View a full list of updates

Nebraska Medicine
SERIOUS MEDICINE. EXTRAORDINARY CARE.

Diabetic Foot Infections:
Institutional Treatment Guidance

These guidelines should not replace clinical judgment. Therapeutic decisions should be based on clinical data including patient history, comorbidities, antimicrobial susceptibility patterns, and cost. The Infectious Diseases consult services are available for complex patient consultations and should be strongly considered in all patients with severe infections or osteomyelitis.

The antimicrobial stewardship program evaluated Diabetic Foot Infections over 6 months (N=111). Multiple opportunities for improvement in care were noted. Deep cultures were obtained in only 54% of cases undergoing operative debridement. When culture data was evaluated, the microbial etiology was primarily gram positive cocci (*S. aureus* and Beta-hemolytic Streptococci). MRSA and Pseudomonas were rare, found in only 8% and 4% of cases respectively. Only 59% of treatment regimens were considered compliant with national guidelines. Superficial wound swabs were obtained in 23% of cases, which is considered inappropriate and not recommended.

Microbial Epidemiology of DFI
N=49 cases*

Nebraska Medicine ASP website has many useful resources including:

NM Diabetic Foot Infection guidance
Rapid blood culture ID Panel guidance
Procalcitonin use guidance
Penicillin Allergy guidance document
NM *Staphylococcus aureus* bloodstream treatment guidance
Surgical Prophylaxis guidance
and many more …..

https://www.nebraskamed.com/for-providers/asp

Use Standard Communication and Decision Aid Tool in LTCF

Suspected SST **SBAR**

Complete this form before contacting the resident's physician.

Date/Time _____

Nursing Home Name _____

Resident Name _____ Date of Birth _____

Physician/NP/PA _____ Phone _____

Fax _____

Nurse _____ Facility Phone _____

Submitted by ☐ Phone ☐ Fax ☐ In Person ☐ Other _____

S Situation

Suspected LRI **SBAR**

Complete this form before contacting the resident's physician.

Date/Time _____

Nursing Home Name _____

Resident Name _____ Date of Birth _____

Physician/NP/PA _____ Phone _____

Fax _____

Nurse _____ Facility Phone _____

Submitted by ☐ Phone ☐ Fax ☐ In Person ☐ Other _____

S Situation

I am contacting you about a suspected lower respiratory tract infection for the above resident.

Vital Signs BP _____ / _____ HR _____ Resp. rate _____

Suspected UTI **SBAR**

Complete this form before contacting the resident's physician.

Date/Time _____

Nursing Home Name _____

Resident Name _____ Date of Birth _____

Physician/NP/PA _____ Phone _____

Fax _____

Nurse _____ Facility Phone _____

Submitted by ☐ Phone ☐ Fax ☐ In Person ☐ Other _____

S Situation

I am contacting you about a suspected UTI for the above resident.

https://www.ahrq.gov/nhguide/toolkits/determine-whether-to-treat/toolkit3-minimum-criteria.html

Consider Displaying Provider Signed Commitment Letters in Examination Rooms in the Clinics

Table 4. Changes in Adjusted Rates[a] of Inappropriate Antibiotic Prescribing for ARIs

Characteristic	Poster Condition		Control Condition	
	Baseline	Final Measurement	Baseline	Final Measurement
Inappropriate prescribing rate, % (95% CI)	43.5 (38.5 to 49.0)	33.7 (25.1 to 43.1)	42.8 (38.1 to 48.1)	52.7 (44.2 to 61.9)
Absolute percentage change, baseline to final measurement (95% CI)	−9.8 (0.0 to −19.3)		9.9 (0.0 to 20.2)	
Difference in differences between poster condition and control (95% CI)	−19.7 (−5.8 to −33.04)[b]			

Abbreviation: ARI, acute respiratory infection.

[a] Adjusted for demographic characteristics and insurance status.

[b] P=.02 for the difference.

Meeker D et al. JAMA Intern Med. 2014;174(3):425-431.

A Commitment to Our Patients About Antibiotics

Antibiotics only fight infections caused by bacteria. Like all drugs, they can be harmful and should only be used when necessary. Taking antibiotics when you have a virus can do more harm than good: you will still feel sick and the antibiotic could give you a skin rash, diarrhea, a yeast infection, or worse.

Antibiotics also give bacteria a chance to become more resistant to them. This can make future infections harder to treat. It means that antibiotics might not work when you really do need them. Because of this, it is important that you only use an antibiotic when it is necessary to treat your illness.

How can you help? When you have a cough, sore throat, or other illness, tell your doctor you only want an antibiotic if it is really necessary. If you are not prescribed an antibiotic, ask what you can do to feel better and get relief from your symptoms.

Your health is important to us. As your healthcare providers, we promise to provide the best possible treatment for your condition. If an antibiotic is not needed, we will explain this to you and will offer a treatment plan that will help. We are **dedicated** to prescribing antibiotics **only** when they are needed, and we will avoid giving you antibiotics when they might do more harm than good.

If you have any questions, please feel free to ask us.

Sincerely,

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

CDC

https://www.cdc.gov/antibiotic-use/community/materials-references/print-materials/hcp/index.html Accessed on 4/2/18

Educational Resources offered by the CDC

BE ANTIBIOTICS AWARE

SMART USE, BEST CARE

NEW RESOURCES!

Be Antibiotics Aware educational and promotional materials about antibiotic prescribing and use — for print, social media, and web.

More >

https://www.cdc.gov/antibiotic-use/ Accessed on 4/1/2018

AN ANTIBIOTIC IS THE WRONG TOOL TO TREAT A VIRUS.
Make sure you use the right tool for the job.
Antibiotics save lives by treating certain infections caused by bacteria, not viruses like colds or flu. When they're not needed, antibiotics won't help you, and the side effects could still hurt you. Ask your doctor when an antibiotic is the right tool for your illness and when it's not.
To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.
BE ANTIBIOTICS AWARE
SMART USE, BEST CARE
CDC

Educational Material on ASAP Website

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ABOUT US ACUTE CARE LONG-TERM CARE ADDITIONAL RESOURCES

EDUCATIONAL MATERIALS FOR LONG-TERM CARE

Home / Long-Term Care / Educational Materials for Long-Term Care

Below are lists of ASP-related educational materials. Additional registration and/or login may be required to access these educational materials. Contact website administrators directly for questions related to their contents.

+ Educational Materials for Health Care Providers

+ Educational Materials for Residents and Family Members

TOOLS AND TEMPLATES FOR LONG-TERM CARE

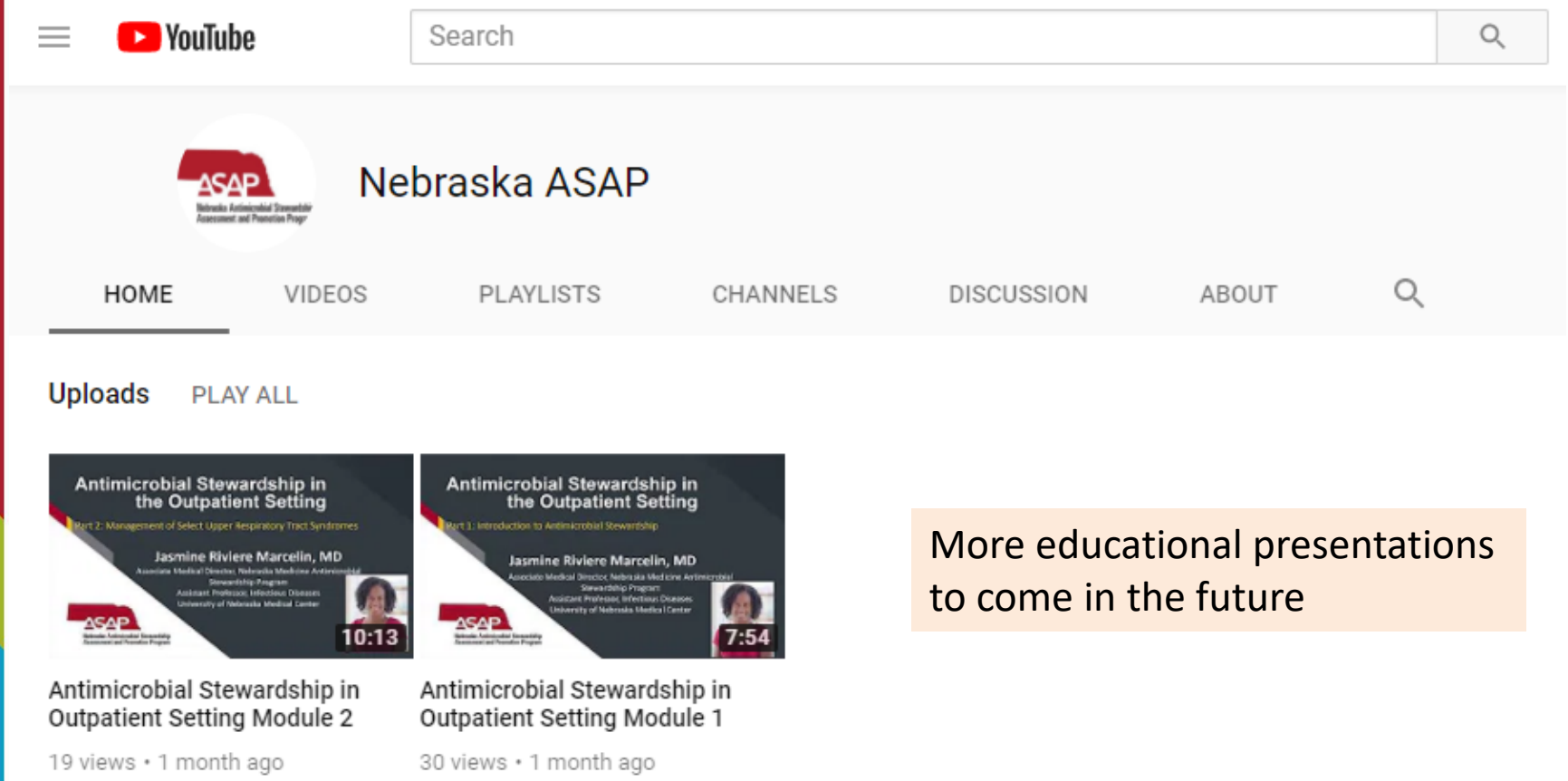
GUIDANCE DOCUMENTS FOR LONG-TERM CARE

WEBINAR SCHEDULE FOR LONG-TERM CARE

LONG-TERM CARE WEBINAR ARCHIVE

EDUCATIONAL MATERIALS FOR LONG-TERM CARE

Nebraska ASAP YouTube Channel (Recently Started)



More educational presentations to come in the future

New CDC Training on Antibiotic Stewardship

Objectives:

- Optimize antibiotic prescribing and use to protect patients and combat the threat of antibiotic resistance.
- Inform healthcare professionals about proper antibiotic use.
- Encourage open discussion among physicians and patients.

8 hours of free CE:

- Multiple online modules offered in 4 sections to be released throughout 2018.*
- Open to all clinicians, pharmacists, physician assistants, nurses, certified health educators, and public health practitioners with an MPH.
- Fulfills Improvement Activities Patient Safety and Practice Assessment (PSPA)_23 and PSPA_24 under the Centers for Medicare & Medicaid Services Merit-Based Incentive Programs, or MIPS.

Register:

https://www.train.org/cdctrain/course/1075730

CDC
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

BE ANTIBIOTICS AWARE
SMART USE. BEST CARE

*Additional modules coming Spring & Fall 2018

2.8.94.21-A

Nebraska **Antimicrobial Stewardship** Summit

Brought to you by:

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

ASAP
Nebraska Antimicrobial Stewardship Assessment and Promotion Program

Friday, June 1, 2018 7:30 a.m. - 4:15 p.m.

Embassy Suites by Hilton Omaha La Vista Hotel & Conference Center
12520 Westport Parkway, La Vista, NE 68128

More than 2 million people are estimated to be infected by antibiotic-resistant organisms which result in over 14,000 deaths annually. Antibiotic resistance and the scarce antibiotic choices for multi-drug resistant organisms are urgent worldwide public health problems. Consequently, antibiotic stewardship has become a critical responsibility for all healthcare institutions and antibiotic prescribers. In Nebraska, access to trained and experienced antimicrobial stewardship experts is limited. This summit is designed to increase knowledge and competence as well as disseminate best-practices in antimicrobial stewardship programs.

TARGET AUDIENCE

- **Acute care hospitals and outpatient facilities:** Pharmacists, medical directors, internal medicine providers, family medicine providers, quality program leaders and all other providers interested in implementing or improving antimicrobial stewardship programs
- **Post-acute and long-term care facilities:** Medical directors, infection preventionists, consultant pharmacists, quality program leaders, directors of nursing, administrators and all other providers working on implementing or improving antimicrobial stewardship programs

SUMMIT OBJECTIVES

At the conclusion of the summit, participants should be able to:

- Describe the rationales for developing antimicrobial stewardship programs across the healthcare continuum
- Outline practical tools and strategies for implementation of antimicrobial stewardship programs in a variety of healthcare settings
- Identify metrics for tracking and reporting efforts of antimicrobial stewardship activities

SUMMIT AGENDA

7:30 a.m.	Registration
7:50 a.m.	Welcome
8:00 a.m.	Keynote Address
8:50 a.m.	Scientific Sessions
12:00 p.m.	Lunch and Meet-the-Experts
1:00 p.m.	Concurrent Sessions • Acute and Ambulatory Care • Post-Acute and Long-Term Care
4:00 p.m.	Closing Remarks and Evaluations
4:15 p.m.	Adjourn

REGISTRATION INFORMATION

Registration fee $49.
Space is limited. Early registration is encouraged.

CONTINUING EDUCATION CREDIT

Continuing education credits (CME, CNE, CPE, and PACE) will be available.

FOR MORE INFORMATION

If you have questions, please contact:

About Summit Content
Philip Chung, PharmD, MS, BCPS
pchung@nebraskamed.com | 402-552-7636

Summit Registration
Brenda Ram, CMP, CHCP
bram@unmc.edu | 402-559-9250

The Nebraska Antimicrobial Stewardship Summit is funded by the Nebraska DHHS HAI Team via a grant from the Centers for Disease Control and Prevention.

REGISTER NOW!
unmc.edu/cce/ne-as-summit

University of Nebraska Medical Center
Nebraska Medicine

Local/Regional Free Resources

Nebraska ASAP
https://asap.nebraskamed.com/

Nebraska Medicine Antimicrobial Stewardship Program
https://www.nebraskamed.com/for-providers/asp

Nebraska DHHS HAI Program
http://dhhs.ne.gov/publichealth/HAI/pages/Home.aspx

Great Plains Quality Innovation Network Antibiotic Stewardship Initiatives
http://greatplainsqin.org/initiatives/antibiotic-stewardship/

Nebraska ICAP

Nebraska ICAP

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ABOUT US | PRACTICE TOOLS | ADDITIONAL RESOURCES

ICAP
Infection Control Assessment and Promotion Program

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Welcome to the new and improved Nebraska ICAP website!

Use this website as a resource to further strengthen infection prevention and control programs at your facility. This site will be regularly updated with new tools and resources. Check back frequently to see what's new.

https://icap.nebraskamed.com/

University of Nebraska[SM] Medical Center

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