



1

---

---

---

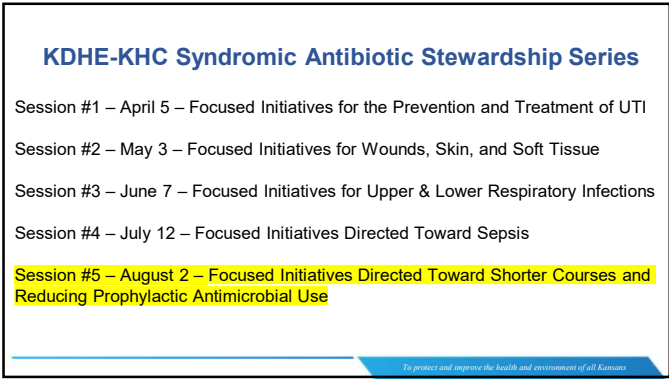
---

---

---

---

---



2

---

---

---

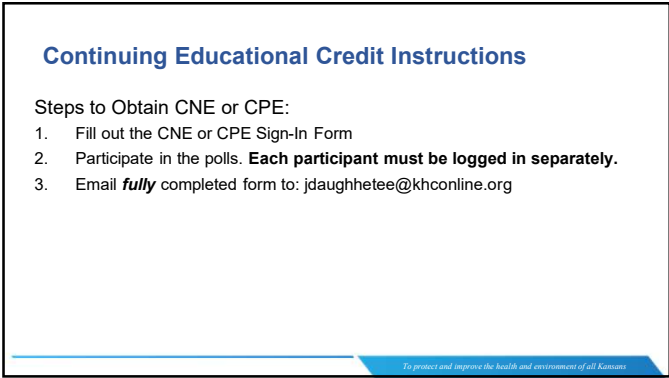
---

---

---

---

---



3

---

---

---

---

---

---

---

---

### Presenters

**Kellie Wark, MD, MPH**  
Antimicrobial Stewardship Lead  
Kellie.Wark@ks.gov

Assistant Professor of Infectious Disease  
The University of Kansas Health Systems  
kwark@kumc.edu



To protect and improve the health and environment of all Kansans

4

---

---

---

---

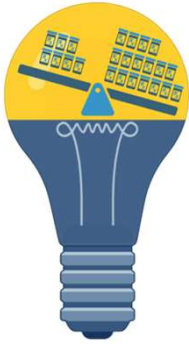
---

---

---

### Objectives

- Examine the evidence suggesting shorter antibiotic durations are as effective for common infectious disease conditions (e.g., pneumonia, skin infections, UTI)
- Formulate ways to incorporate shorter duration options into facility guidelines
- Discuss prophylactic antimicrobial use and overuse
- Design and implement evidence based prophylactic antibiotic guidelines



To protect and improve the health and environment of all Kansans

5

---

---

---

---

---

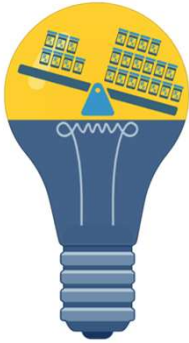
---

---

### The Power of Antibiotics

Disease	Pre-Antibiotic Death Rate	Death with Antibiotics	Change in Death
Community Associated Pneumonia	35%	10%	-25%
Hospital Associated Pneumonia	60%	30%	-30%
Endocarditis	100%	25%	-75%
Gram negative bacteremia	80%	10%	-70%
Meningitis	>80%	<20%	-60%
Skin infection	11%	<0.5%	-10%
Compare to....			
Heart attack with fibrinolytics or aspirin			-3%

Source: IDSA Position Paper: CID 2008;47(5):a248-65  
IDSA/ACCP/ATS/SCM/CID 2015;61(5):1155-79



To protect and improve the health and environment of all Kansans

6

---

---

---

---

---

---

---

Polling Question 1

Shorter courses of antibiotics are associated with which of the following?

A. Decreased risk of antibiotic resistance

B. Increased side effects

C. Decreased compliance

D. Decreased cure rates

To protect and improve the health and environment of all Kansans

7

---

---

---

---

---

---

---

Polling Question 1

Shorter courses of antibiotics are associated with which of the following?

A. Decreased risk of antibiotic resistance

B. Increased side effects

C. Decreased compliance

D. Decreased cure rates

To protect and improve the health and environment of all Kansans

8

---

---

---

---

---

---

---

Use it and Lose it?

Shorter the course the better

As quickly as 4 days of antibiotic therapy, 3-fold increased resistant *S. pneumoniae* in throat swabs

Changes in macrolide-resistant *S.pneumoniae* while on macrolides compared to placebo (no antibiotic)

By day 4 antibiotic, resistance increased over 3 fold

Azithromycin

Clarithromycin

Placebo-1

Placebo-2

Proportion of macrolide resistance (%)

Time (days)

Source: Mahotra-Kumar S, et al Lancet 2007;369(9560):482-90.

To protect and improve the health and environment of all Kansans

9

---

---

---

---

---

---

---

Kansas Healthcare Collaborative  
www,khconline.org

3

### Use it and Lose it?

**Shorter the course the better**

- Ventilator associated pneumonia (VAP) antibiotics increased MDRO-carriage **42.1%** (Eight days) → **62%** (15 days) with equal cure
- High-dosed amoxicillin nasopharyngeal PCN-resistant *S.pneumoniae* carriage increased **24%** (Five days) → **32%** (10 days)

Source: Chastre J, et al. JAMA 2003; 290:2589-98  
Schrag S, et al. JAMA 2001;286:49-56

To protect and improve the health and environment of all Kansans

10

---

---

---

---

---

---

---

### Polling Question 2

More than 120 randomized trials have found that shorter courses of antibiotics are noninferior to longer courses for 17 conditions?

A. True  
B. False

11

---

---

---

---

---

---

---

### Polling Question 2

More than 120 randomized trials have found that shorter courses of antibiotics are noninferior to longer courses for 17 conditions?

**A. True**  
B. False

12

---

---

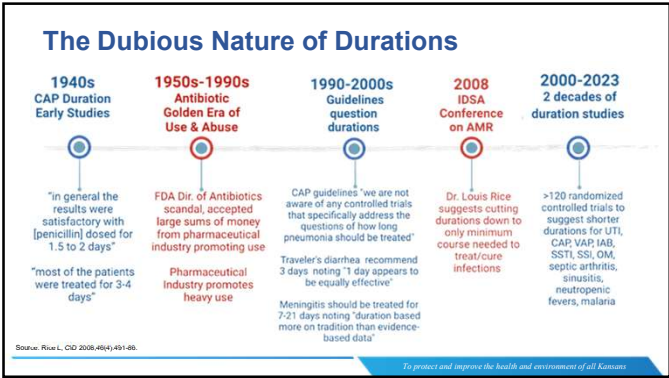
---

---

---

---

---



13

---

---

---

---

---

---

---

---



14

---

---

---

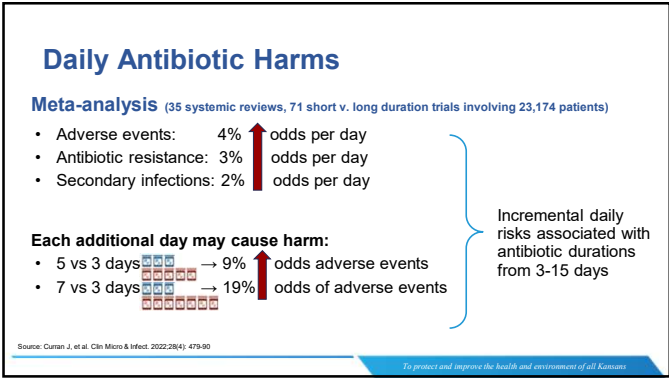
---

---

---

---

---



15

---

---

---

---

---

---

---

---

ACP Best Practice Advice

Limit abx for COPD to 4 days

Limit abx for CAP to 5 days

Limit abx for UTI to 3-5 days

Limit abx for cellulitis to 5-6 days

Best practice advice #1

Best practice advice #2

Best practice advice #3

Best practice advice #4

CLINICAL GUIDELINE

Appropriate Use of Short-Course Antibiotics in Common Infections: Best Practice Advice From the American College of Physicians

Source: Lee R, et al. *Annals of Int Med*. 2021; 174(8): 822-27.

To protect and improve the health and environment of all Kansans

16

---

---

---

---

---

---

---

---

Shorter is Better: Pneumonia

Adults + Pediatrics

- 14 randomized controlled trials of >8,000 patients
- Three or 5 days antibiotics non-inferior to 5 to 14 days for treatment of pneumonia

Rx

Rx

Rx

Cured

Rx

Rx

Rx

Rx

Rx

Cured

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Cured

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Cured

Source: Wunderink R et al. *NEJM*. 2014; 370: 543-51  
Ward-Cooker N & Speilberg B. *CID* 2018;66:1436  
et Monassou R, et al. *BMJ* 2008;332:1355  
Cohn A, et al. *CID* 2016;66:1581

To protect and improve the health and environment of all Kansans

17

---

---

---

---

---

---

---

---

Atypical Pneumonia

Adults

- 1 randomized trial of atypical pneumonia (confirmed *C. pneumoniae*, *C. psittaci*, *C. burnetii*, or *L. pneumophila* infections)
- n=96 (48 each group)
- 1.5 gram azithromycin x1 dose vs 500 mg x3 days
- 98% cure in each group (followed to 4 weeks)

Source: Schenwald S, et al. *Infection*. 1999; 22(3): 198-202.

To protect and improve the health and environment of all Kansans

18

---

---

---

---

---

---

---

---

Kansas Healthcare Collaborative  
www,khconline.org

6

Ventilator Associated Pneumonia

Adults

- Three randomized trials of 8 days vs 15 days antibiotics
- Confirmed non-fermenting gram negatives (e.g., *Acinetobacter*, *Pseudomonas*, *Stenotrophomonas*)
- n=812
- 9-17% recurrences, no statistical difference b/w shorter or longer, similar median days mechanical ventilation, ICU LOS, no change in mortality (followed to 90 days), lower rates of multi-resistance development

Source: Cheatre J., et al. JAMA 2003; 290(19):2588-98  
Capellier G., et al. PLoS One 2012; 7(8):e41260  
Bongia A., et al. Intensive Care Med 2022; 48(7): 841-49

To protect and improve the health and environment of all Kansans

19

Additional Support - Pneumonia Shorter Courses

Year	Regimen of shorter course	Regimen of comparator	Outcome	N
Siegel et al 1999	Cefuroxime 7 days	Cefuroxime 10 days	No difference	52
Leophonte et al 2002	Ceftriaxone x 5 days	Ceftriaxone x 10 days	No difference (& bacteriological) cure	244
Dunbar et al 2003	Levofloxacin x 5 days	Levofloxacin x 10 days	No difference	528
Dunbar et al 2004	Levofloxacin x 5 days	Levofloxacin x 10 days	No difference	149
Leophonte et al 2004	Gemifloxacin x 7 days	Amox/clav x 10 days	No difference (or bacteriological or radiographic) cure	320
Tellier et al 2004	Telithromycin x 5 or 7 days	Clarithromycin x 10 days	No difference (or bacteriological) cure	559
El Moussaoui 2006	Amoxicillin x 3 days	Amoxicillin x 8 days	No difference (or radiographic) cure	119
File et al 2007	Gemifloxacin x 5 days	Gemifloxacin x 7 days	No difference (or bacteriological) cure	510
Uranga et al 2016	Standard of treatment x 5 days	Standard of treatment x 10 days	No difference	312

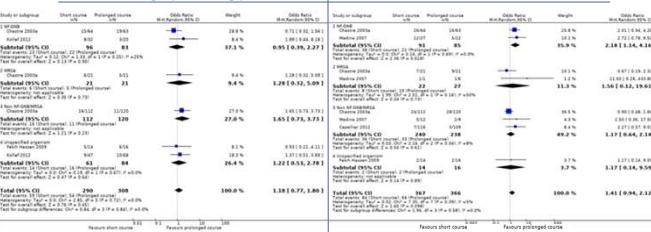
To protect and improve the health and environment of all Kansans

20

Short vs Long Course Outcomes

Mortality (28 day)

Recurrent Pneumonia



To protect and improve the health and environment of all Kansans

21

### Longer Courses Warranted

- Initial therapy not active against isolated pathogen
- Extrapulmonary infection (eg.. meningitis or endocarditis)
- Pneumonia caused by *P.aeruginosa*, *S.aureus*, or unusual pathogens (*Burkholderia spp*, fungus)
- Necrotizing pneumonia
- Empyema
- Lung abscess

Source Pletz M, et al. Chest 2020; 158(5):1912-18.

To protect and improve the health and environment of all Kansans

22

---

---

---

---

---

---

---

---

### Shorter is Better: UTI and Pyelonephritis

**Adults**

- Nine randomized controlled trials of >1800 patients
- Complicated UTI: 5-7 days antibiotics non-inferior to 10-14 days
- Pyelonephritis: 5-7 days non-inferior to 10-14 days

Cured

Cured

Cured

Cured

Source: Jernellus H, et al. Acta Med Scand 1988;223(5):469-77  
de Gier R, et al. Int J Antimicrob Agents 1995; 6(1):27-30  
Talan D, et al. JAMA 2000;283(12): 1583-90  
Peterson J et al. Urology 2008;71(1):17-22  
Klausner H, et al. Current Medical Research & Opinion 2007;23(11):2637-45  
Gier A, et al. Eur J Clin Microbiol Infect Dis 2017; 34(4):8  
Van Nieuwenhoepe C, et al. BMC Medicine 2017;15:70-78  
Dreborg D, et al. JAMA 2021;326(4):324-331

To protect and improve the health and environment of all Kansans

23

---

---

---

---

---

---

---

---

### Additional Support - Pyelonephritis Shorter Courses

Year	Regimen of shorter course	Regimen of comparator	Outcome	N
Gleckman et al 1985	Gent/Tobra → bactrim x 9-11	Gent/Tobra→bactrim x 20-22	No difference in cure	54
Stamm et al 1987	Ampicillin x 2 weeks	Ampicillin x 6 weeks	No difference in cure	27
Stamm et al 1987	Bactrim x 2 weeks	Bactrim x 6 weeks	No difference in cure	33
Jernellus et al 1988	Pivampicillin x 7 days	Pivampicillin x 21 days	Shorter course more bacteriologic cure (28% vs 69%)	77
De Gier et al 1995	Fleroxacin x 7 days	Fleroxacin x 14 days	No difference in cure	54
Talan et al 2000	Ciprofloxacin x 7 days	Bactrim x 14 days	Improved clinical cure (96% vs 83%)	255
Klausner et al 2007	Levofloxacin x 5 days	Ciprofloxacin x 14 days	No difference in cure, micro eradication	192
Peterson et al 2008	Levofloxacin x 5 days	Ciprofloxacin x 10 days	No difference in cure	1109

To protect and improve the health and environment of all Kansans

24

---

---

---

---

---

---

---

---



### Shorter is Better: Skin Infections

**Adults + Pediatrics**

- Four randomized controlled trials of >1400 patients
- Five to 6 days antibiotics non-inferior to 10 days for cellulitis

Rx

Rx

Rx

Rx

Rx

Cured

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Rx

Cured

Source: Heggum M, et al. Arch Intern Med 2004; 164(15): 1569-74  
Prokocimer P, et al. JAMA 2013; 309(6): 559-69  
Moran G, et al. Lancet Inf Dis 2014; 14(8): 696-706  
Crawford R, et al. Clin Microbiol Infect 2019; 23(5): 606-12

To protect and improve the health and environment of all Kansans

25

---

---

---

---

---

---

---

---

### Diabetic Foot Infections

**Adults**

- Moderate-severe diabetic foot ulcer infections w/o osteomyelitis
- Post-debridement antibiotics for 10 or 20 days (all oral)
- No difference in cure (77% in 10-days vs 71% in 20-days, (p=0.57)
  - Non-statistically greater longer-term osteomyelitis (23%, 3/35) in 10 days vs 16% (5/31) in 20 days (p=0.53)
- Larger confirmatory trial is underway

Source: Phan T, et al. Annals of Surg 2022; 276(2): 233-38.

To protect and improve the health and environment of all Kansans

26

---

---

---

---

---

---

---

---

### Stewardship Initiatives to Improve Durations

- EHR
- Audit and feedback
- Guidelines and incorporation into clinical decision support

Guidelines

Education

Communication training

Diagnostics (e.g., procalcitonin)

Antibiotic Timeouts & Audit Feedback

Clinical decision support

EHR

Stopping & Streamlining

Duration Interventions

To protect and improve the health and environment of all Kansans

27

---

---

---

---

---

---

---

---

### Electronic Health Record - Order “Buttons”

- Implementation of an additional “button” for five and seven day option for clindamycin, cephalexin, ciprofloxacin, levofloxacin, bactrim, amoxicillin, cefdinir with 10-day option for amoxicillin and cefdinir (common Rx for pharyngitis)
- Pediatric EDs and clinics, n=54,315 Rx’s, 2012-2018

#### Antibiotic Use

- 5.1% durations (95% CI, -8.3% to -2.0%)
- 16.26% 10-day Rx’s (95% CI, -17.29% to -15.23%)
- 1.05% increase in 5-day durations, 13.09% in 7-day durations (p<0.001)
- 20.8% clindamycin (95% CI, -26.9% to -14.7%)
- 9.9% cephalexin (95% CI, -14.3% to -5.4%)

Source: Sun S., et al. Pediatrics 2021; 147(6):e2020034819.

To protect and improve the health and environment of all Kansans

28

---

---

---

---

---

---

---

---

### Electronic Health Record - Order “Buttons”

#### Secondary Outcomes

- No difference in clinic or ED revisits
- No increase in hospital admissions
- No difference in abx re-orders

- Low-cost
- 10-hours of effort to implement this EHR one-time change
- Optimize your EHR, many features are available without add-ons or 3rd party vendors (but may require institutional IT programming)

Source: Sun S., et al. Pediatrics 2021; 147(6):e2020034819.

To protect and improve the health and environment of all Kansans

29

---

---

---

---

---

---

---

---

### Audit and Feedback

- Order set and monthly audit-feedbacks to peers
- Setting: ED over course of 6 months

#### Antibiotic Use

- 3-day median duration (9.5 to 6.5 days)
- 8% decrease in 2+ abx (12% to 4%)
- 36% clindamycin (59% to 23%)
- 20% cephalexin (22% to 42%)

Antibiotic	Before	After	Change
Clindamycin	59%	23%	-36%
Cephalexin	22%	42%	20%

Antibiotic	Before	After	Change
Clindamycin	59%	23%	-36%
Cephalexin	22%	42%	20%

Prescriber	Before	After	Change
Dr. A	10	5	-50%
Dr. B	10	5	-50%
Dr. C	10	5	-50%
Dr. D	10	5	-50%

Download: Sample Peer Report  
asap.nebraskamed.com/wp-content/uploads/sites/3/2018/08/Annual-ASP-Activity-Report-for-LTCF-Prescribers-081418.docx

Source: Trappo R., et al. OPD 2017 (suppl 1): s274

To protect and improve the health and environment of all Kansans

30

---

---

---

---

---


---

---

---

### Audit and Feedback

- Systematic review: interventions directed to physicians by **providing advice or feedback were more effective** in improving prescribing practices than those not providing feedback (29 studies)
- Interventions that applied “rules” (prior-auth) to make physicians prescribe properly resulted in delays in treatment and a breakdown in trust (n=7 studies)



Source: Davey P., et al. Cochrane Database Syst Rev 2017;2017(2): CD003543.

To protect and improve the health and environment of all Kansans

31

---

---

---

---

---

---

---

### Polling Question 3

Does your facility have facility guidelines in place which incorporate shorter antibiotic durations?

A. Yes

B. No

Note: there is no right or wrong answer 😊

To protect and improve the health and environment of all Kansans

32

---

---

---

---

---

---

---

### Guidelines

- Guideline development for cellulitis and suspected abscesses
  - Seven-day duration recommended
  - also provided algorithm for imaging indications (that is if abscess suspected but not cellulitis)
- Included in order set
- Educational campaign
  - E-mail
  - Intranet
  - Work areas

#### Antibiotic Use

- **-30% gram-negative coverage** (66% → 36%, p<0.001)
- **-10% anti-pseudomonal antibiotics** (28% → 18%, p=0.02)
- **-32% in beta-lactam/BLase inhibitor combos** (60% → 28%, p<0.001)

Source: Jenkins T., et al. Arch Intern Med. 2011;171:1072-79.

To protect and improve the health and environment of all Kansans

33

---

---

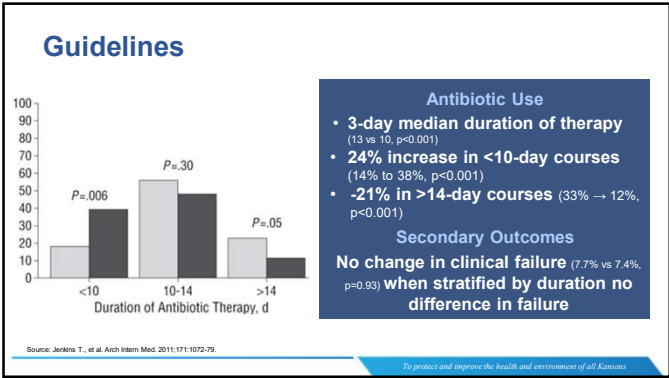
---

---

---

---

---



34

---

---

---

---

---

---

---

---

### Guidelines - UTI and Pyelonephritis

Example Guidelines			
Condition	Preferred	Alternative	
Uncomplicated UTI	Nitrofurantoin x 5 days	Bactrim x 3 days	Cephalexin x 3-7 days Cefpodoxime Cefuroxime Cefdinir
		Alt to above: Bactrim x 7 days	Levofloxacin x 3 days Cephalexin x 7 days Cefpodoxime Cefuroxime Cefdinir
Complicated UTI	Nitrofurantoin x 7 days	Alt to above: Bactrim x 7-14 days	Levofloxacin x 7 days Augmentin x 10-14 days
Pyelonephritis	Cipro or Levoflox x 7 days		

Sources: Gupta K, et al. CID 2011;52(5):e103-e120;  
Nicole L, et al. CID 2019;69(10):e83-75;  
Tamma P et al. CID 2021;72(7):e169-e183

To protect and improve the health and environment of all Kansans

35

---

---

---

---

---

---

---

---

### Guidelines - UTI and Pyelonephritis

Example Guidelines			
MDRO	Preferred	Alternative	
VRE	Amoxicillin 500 - 1000 mg TID-BID urine drug exceeds MIC necessary for therapeutic effect	Daptomycin	Linezolid
ESBL	Fosfomycin 3g q72h x1-3 doses not for use for pyelonephritis	Ertapenem	

Sources: Cole K, et al. Antimicrob Agents & Chemother. 2015;59(12):7562-66;  
Shah K, et al. Int J Antimicrob Agents 2018;51(1):57-61

To protect and improve the health and environment of all Kansans

36

---

---

---

---

---

---

---

---

### Guidelines - Skin and Soft Tissue Infections

Example Guidelines			
Condition	Pathogens	Treatment	Duration
Impetigo		Topical mupirocin 2% three times daily	
If numerous lesions	Staphylococcus spp Streptococcus pyogenes	Cephalexin 500 mg TID to QID or Cefadroxil 500 mg BID	5 days
		<b>Penicillin Allergic Alternative:</b> Amoxicillin/clavulanate 875 mg BID	
Erysipelas	Streptococcus pyogenes Beta-hemolytic strep	Amoxicillin 500-875 mg BID to TID <b>Penicillin Allergic Alternative:</b> Amoxicillin/clavulanate 875 mg BID Clindamycin 300 mg QID	

Sources: Stevens D, et al. CID 2014; 59(2): e10-52;  
Strylewski M, et al. CID 2008; 46 suppl 5: s368-77;  
Daum R et al. NEJM 2017; 376:2545-55.

To protect and improve the health and environment of all Kansans

37

---

---

---

---

---

---

---

---

### Guidelines - Skin and Soft Tissue Infections

Example Guidelines			
Condition	Pathogens	Treatment	Duration
Non-purulent cellulitis	Streptococcus pyogenes / beta-hemolytic strep Staphylococcus spp	Cephalexin 500 mg TID to QID or Cefadroxil 500 mg BID	5 days (may extend based on response)
Non-purulent cellulitis with MRSA risk factors*	Staphylococcus spp MSSA MRSA	Cephalexin or cefadroxil PLUS Bactrim 1-2 DS tab BID or Doxycycline 100 mg BID <b>Penicillin Allergic Alternative:</b> Clindamycin 300 mg QID	

\* MRSA Risk factors: prior MRSA infection or colonization, close contact with MRSA, high community prevalence, crowded living conditions (homeless shelters, military barracks, prison), contact sports (wrestling, football), IV drug use

Sources: Stevens D, et al. CID 2014; 59(2): e10-52;  
Strylewski M, et al. CID 2008; 46 suppl 5: s368-77;  
Daum R et al. NEJM 2017; 376:2545-55.

To protect and improve the health and environment of all Kansans

38

---

---

---

---

---

---

---

---

### Guidelines - Skin and Soft Tissue Infections

Example Guidelines			
Condition	Pathogens	Treatment	Duration
Purulent cellulitis WITH drainable collection	MSSA MRSA Beta-hemolytic strep (less common)	Perform Incision and Drainage (I&D) Adjunctive antibiotics are recommended in certain scenarios if drained*  * abscesses >2 cm, extensive disease (multiple abscesses or multiple sites of infection), clinical signs or symptoms of infection, inadequate response following I&D, immunosuppression	5 days (may extend based on response)
Purulent cellulitis WITHOUT drainable fluid collection	MSSA MRSA Beta-hemolytic strep (less common)	Bactrim 1-2 DS tabs BID or Doxycycline 100 mg BID	

Sources: Stevens D, et al. CID 2014; 59(2): e10-52;  
Strylewski M, et al. CID 2008; 46 suppl 5: s368-77;  
Daum R et al. NEJM 2017; 376:2545-55.

To protect and improve the health and environment of all Kansans

39

---

---

---

---

---

---

---

---

Guidelines - Community Acquired Pneumonia

Example Guidelines				
Condition	Common Pathogens	Treatment		Duration
Community Acquired Pneumonia	<i>S. pneumoniae</i> <i>H. influenzae</i> <i>M. catarrhalis</i>	No comorbidities	Amox/clav 875 mg PO BID OR Doxycycline	Penicillin allergic Cefuroxime mg 500 BID
	<i>S. pneumoniae</i> <i>H. influenzae</i> <i>M. catarrhalis</i> <i>S. aureus</i> <i>M. pneumoniae</i> <i>C. pneumoniae</i> <i>Legionella</i> spp Gram negative rods	Comorbidities (heart, lung, liver, renal disease, diabetes, alcoholism, malignancy, asplenia)	Amox/clav 875 mg BID AND Doxycycline 100 mg BID or Azithro 500 mg x1 - > 250 mg q24	Penicillin allergic Cefuroxime mg 500 BID AND doxy or azithro  Penicillin & cephalosporin allergic Levofloxacin 750 mg q24

Source: Metlay J, et al. Am J Resp and Crit Care. 2019; 200(7): e45-67

To protect and improve the health and environment of all Kansans

40

---

---

---

---

---

---

---

---

Polling Question 4

True or false? The most effective way to improve antibiotic durations are via educational initiatives

A. True

B. False

To protect and improve the health and environment of all Kansans

41

---

---

---

---

---

---

---

---

Polling Question 4

True or false? The most effective way to improve antibiotic durations are via educational initiatives

A. True

B. **False**

To protect and improve the health and environment of all Kansans

42

---

---

---

---

---

---

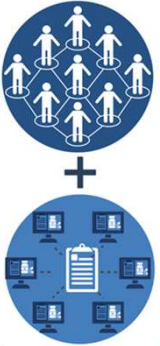
---

---

### Clinical Decision Support

- Systematic review: antibiotic stewardship initiatives in the outpatient setting to reduce prescriptions (43 studies)
- The most effective interventions in changing abx prescribing behaviors were multi-faceted combining **active clinician education** with **clinical decision support**

Source: Raveil S., et al. Med Care 2008;46(8):947-62.



To protect and improve the health and environment of all Kansans

43

---

---

---

---

---

---

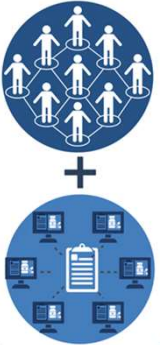
---

---

### Clinical Decision Support

- Systematize the decision-making process
- Akin to checklist approach
- CDSS tools provided the greatest benefit for providers in non-teaching settings, had been practicing the longest, and in facilities/regions with limited access to consultation and subspecialty services

Source: AHRQ Interventions to Decrease Antibiotic Overuse, [ahrq.gov/hai/patient-safety-resources/advances-in-hai/hai-articles.html](http://ahrq.gov/hai/patient-safety-resources/advances-in-hai/hai-articles.html)



To protect and improve the health and environment of all Kansans

44

---

---

---

---

---

---

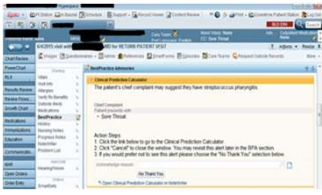
---

---

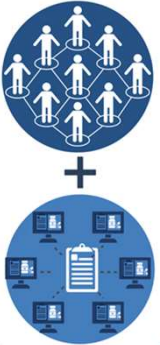
### Clinical Decision Support - UTI Example

#### EMR-Treatment Support

- Best practice alert auto-triggered upon antibiotic-Rx for UTI
- Clinician enters dx (UTI, chronic prostatitis, pyelonephritis)
- Pop-up w/ relevant info extracted EMR
- Abx recommended based on guideline
- Clinician can opt-out



Source: Demerchy E., et al. J Antimicrob Chemother. 2014;69(10), p 2857-63.  
Escalante S., et al. J Am Pharm Assoc 2019;59:579-85



To protect and improve the health and environment of all Kansans

45

---

---

---

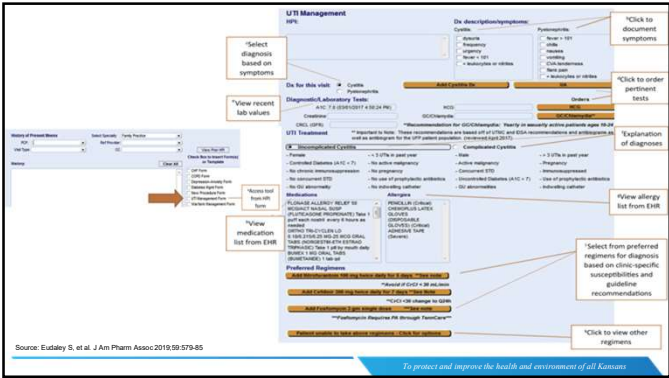
---

---

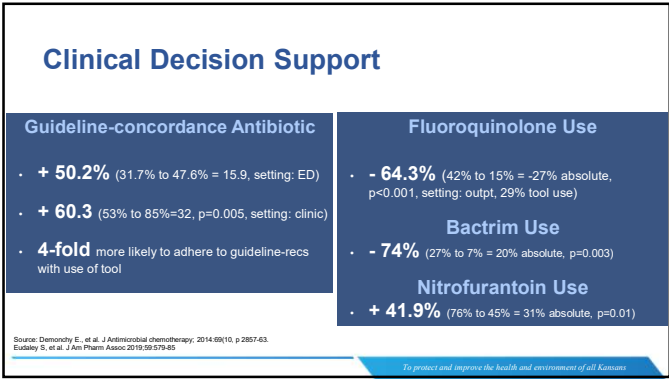
---

---

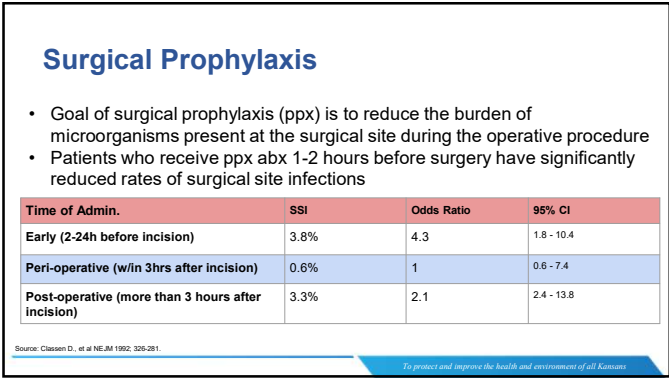
---



46



47



48



Surgical Prophylaxis Guidelines			
Recommendation	American College of Surgeons & Surgical Infection Society	World Health Organization	Centers for Disease Control & Prevention
IV antibiotic ppx	Given w/in 60 minutes of incision (redosing should be based on the half-life of the antibiotic and blood loss)	Given w/in 120 minutes of incision	Given so that bactericidal concentration of agent is present during incision
Post-op ppx	Antibiotics should stop at closure incision, with few exceptions	Antibiotics should not be given after operation	Stop at closure of incision for clean/clean-contaminated incisions
MRSA/MSSA Colonization	Cardiac & orthopedic patients colonized with MSSA/MRSA should be decolonized	Nasal carriers of MSSA/MRSA should be decolonized prior to surgery	

Source: Orenday-Barraza J, et al Euro Spine J. 2022;31(10):2481-92.

To protect and improve the health and environment of all Kansans

49

---

---

---

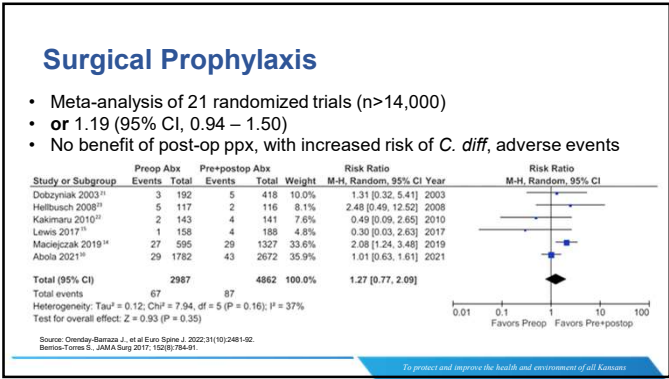
---

---

---

---

---



50

---

---

---

---

---

---

---

---

### Polling Question 5

True or false: Dental antibiotic prophylaxis is recommended before dental cleanings for people who have had a joint replacement?

A. True

B. False

To protect and improve the health and environment of all Kansans

51

---

---

---

---

---

---

---

---

### Polling Question 5

True or false: Dental antibiotic prophylaxis is recommended before dental cleanings for people who have had a joint replacement?

A. True

B. **False**

To protect and improve the health and environment of all Kansans

52

---

---

---

---

---

---

---

### Dental Prophylaxis

- Although frequently implicated in endocarditis, dental procedures contribution is low (temporal relationships estimated at 4%)
- Three case-control studies - no change in endocarditis post-dental treatment
- UK before-after NICE guideline changes (2008 rec to stop all abx ppx)
  - No associated change in endocarditis over 10 year period

Source: Gendron R et al. Microbes & Infection 2000;2(8):987-906  
Lacasse F et al. Eur Heart J. 1995;16:1969-74  
Shroff B et al. Ann Intern Med 1998;129:751-6  
Clancy AJ et al. Cochrane Database Syst Rev 2001;10:cd003813  
Thornhill M et al. BMJ 2011;342:d2392

To protect and improve the health and environment of all Kansans

53

---

---

---

---


---

---

---

### Dental Prophylaxis

In a systematic review of case-control and randomized controlled trials **no** studies could be found relating periodontal disease to prosthetic joint infection



Source: de Almeida Barros Mourao & Javits. Evid Based Dentistry. 2020;21:119

To protect and improve the health and environment of all Kansans

54

---

---

---

---

---

---

---

*To protect and improve the health and environment of all Kansans*

*To protect and improve the health and environment of all Kansans*

*To protect and improve the health and environment of all Kansans*

Kansas Healthcare Collaborative  
www.khconline.org