CSiM | CENTER FOR STEWARDSHIP IN MEDICINE

Medicine Quality Social Science UQuAL

ASB 301: Kicking off Year 3 in Style

Sustaining ASB gains + Moving toward pneumonia

Outline

- Recap of last year
- Sustaining ASB Wins
- Pneumonia!
  - Duration
  - Fluoroquinolone avoidance
  - Data collection

As a group

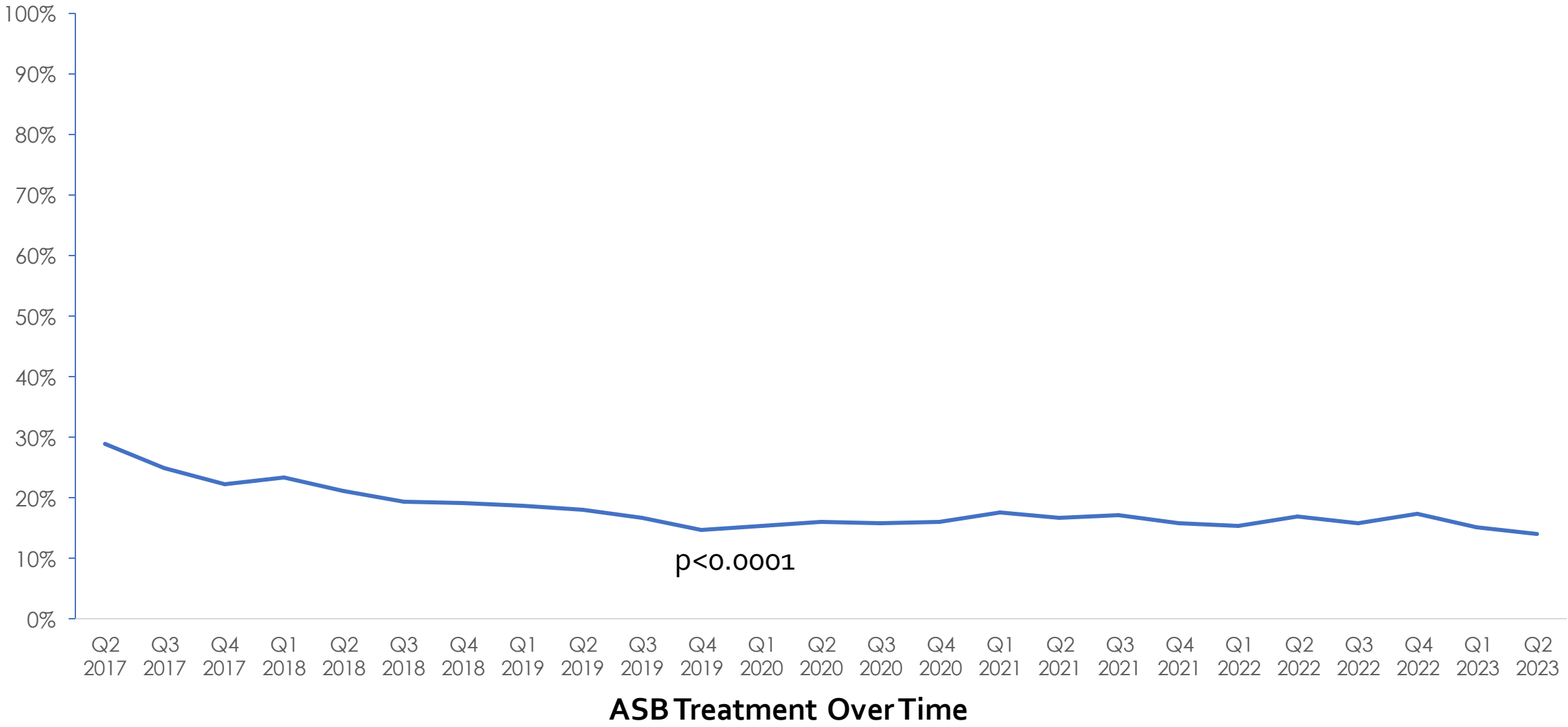
- We successfully measured ASB treatment AND
- We reduced it!

Sustainability? How do we do that?

If you've hit your goal for ASB treatment…it's nice to move on to a new initiative

But, beware the backslide

Sustainability is possible! HMS has sustained gains since 2019



Sustainability? How do we do that?

- Continued data collection, but not as much
- Stewardship activities
  - Automate/build in as much as possible
    - Diagnostic stewardship, guidelines/documents
  - Intermittent activities
    - Audit and feedback, education
  - Move on if you have sustained improvement… without intermittent activities

This year

- We will continue to collect data for ASB
- Same general tool as last year, BUT
  - Fewer cases (3/month instead of 6)
  - Streamlined tool
- Data reports every 5 months (2 total)

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Pneumonia

- Most COMMON indication for antibiotic use
- 10th most common cause of hospitalization
- Can be very morbid
- Lots of stewardship data about safety of:
  - Shorter durations
  - Less broad empiric therapy
  - Avoiding fluoroquinolones

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Why duration???

- For many diseases, evidence shows that shorter durations are equally effective as longer durations

- ***Change*** in dogma

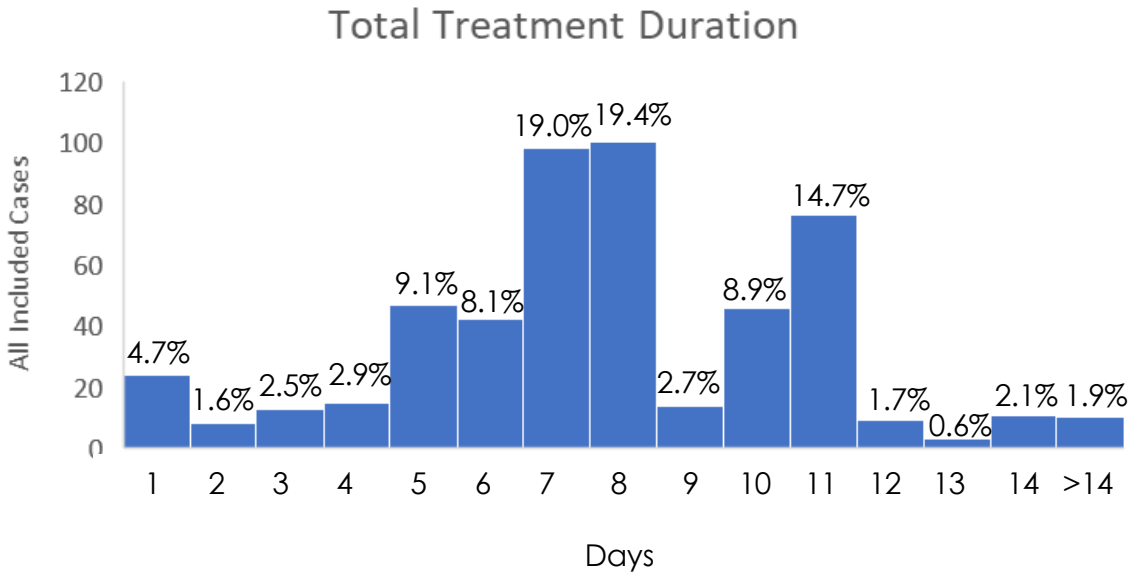
- Longer durations
  - Kill off healthy, normal flora
  - Select for resistant pathogens
  - Increase risk of *Clostridioides difficile*
  - Increase risk of adverse events (e.g., side effects)

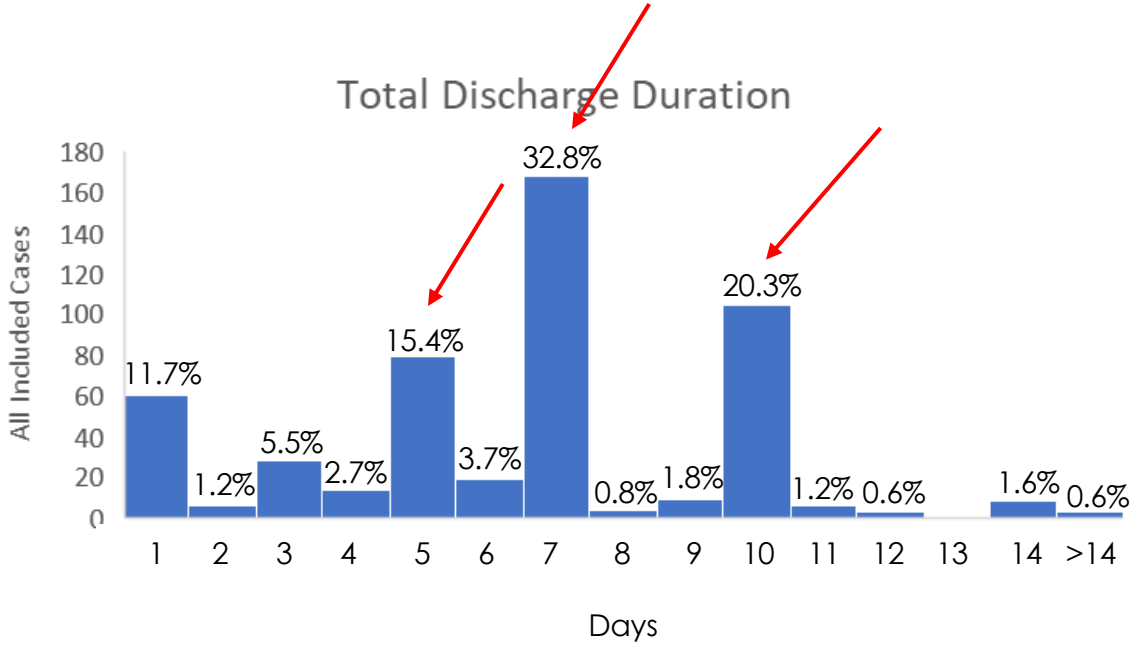
Uranga. JAMA Internal Medicine. 2016
Schrag. JAMA. 2001
Wistrom J. Antimicrobial Chemotherapy. 2001 Tamma. JAMA Internal Medicine. 2017

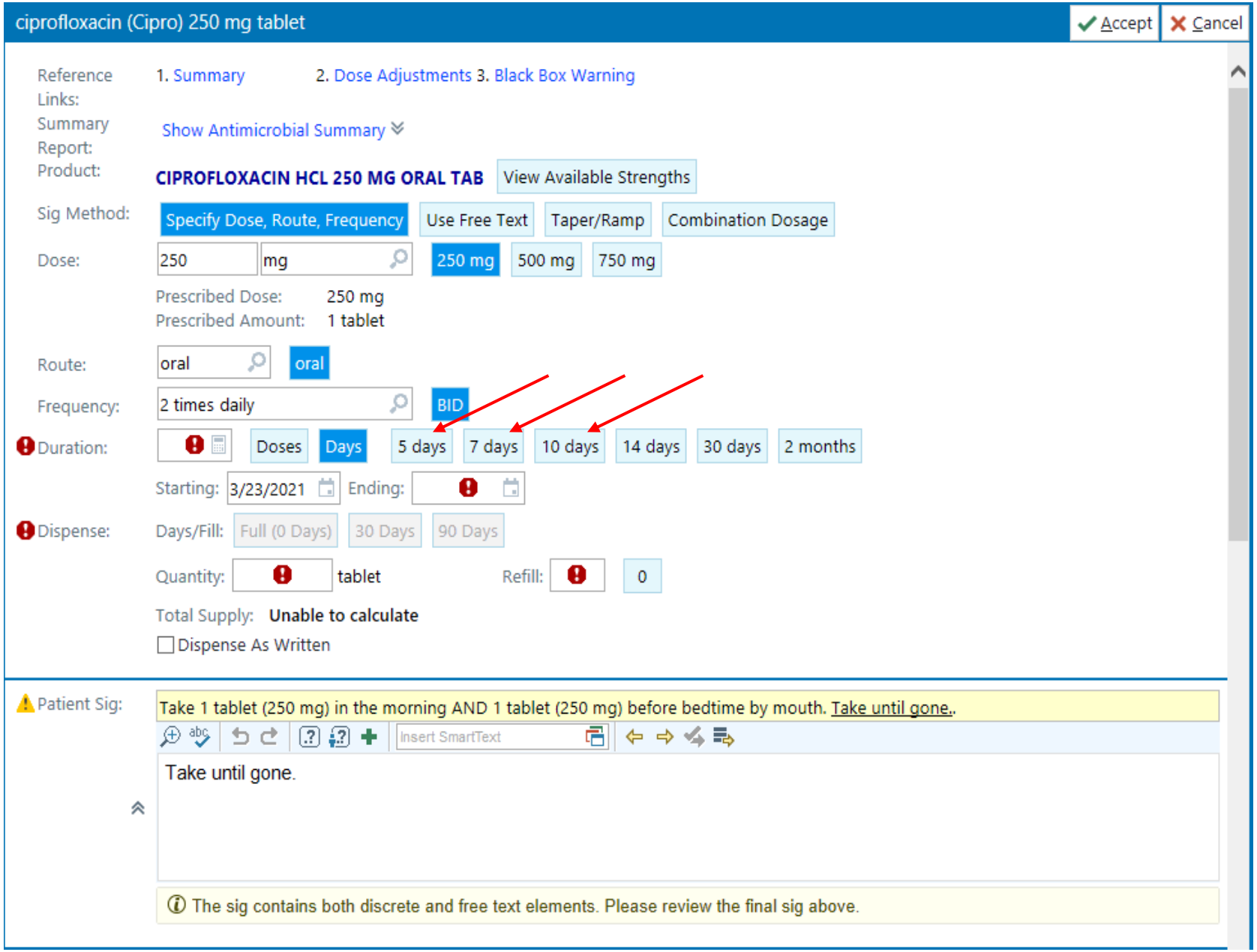
Treatment Duration for UTI by hospital

Hospital	Total Duration, median (IQR)	% treated > 7 days
Minidoka	7.0 (5.0, 8.0)	29.5
Harney	5.0 (5.0, 8.0)	35.7
Columbia	7.0 (7.0, 10.0)	47.9
Blue Mtn OR	8.0 (6.0, 9.0)	52.9
Gritman	8.0 (6.0, 11.0)	54.0
Blue Mtn UT	8.0 (5.0, 8.0)	56.3
Dayton	8.5 (7.0, 10.0)	61.9
Copper Queen	8.0 (7.3, 11.0)	74.7
N Canyon	10.0 (7.4, 11.0)	76.5
Whidbey	12.0 (10.0, 14.0)	88.9
Overall	8.0 (6.0, 10.0)	54.9

Frequency distribution for discharge and total duration for all cases across all hospitals







EDITORIAL

The New Antibiotic Mantra—"Shorter Is Better"

Brad Spellberg, MD

Good rule of thumb:

- *≤5 days if uncomplicated*
- *5-7 days if complicated*

Table. Infections for Which Short-Course Therapy Has Been Shown to Be Equivalent in Efficacy to Longer Therapy

	Treatment, Days	
Disease	Short	Long
Community-acquired pneumonia[1-3]	3-5	7-10
Nosocomial pneumonia[6,7]	≤8	10-15
Pyelonephritis[10]	5-7	10-14
Intraabdominal infection[11]	4	10
Acute exacerbation of chronic bronchitis and COPD[12]	≤5	≥7
Acute bacterial sinusitis[13]	5	10
Cellulitis[14]	5-6	10
Chronic osteomyelitis[15]	42	84

Abbreviation: COPD, chronic obstructive pulmonary disease.

What's the "right" Duration for Pneumonia?

- It depends….
  - on patient factors, disease, clinical stability, improvement

- Most patients (>80%) with CAP should receive 3-5 days of treatment
  - As long as afebrile x 48 hours and ≤ 1 vital sign abnormality by day 5 of treatment (if being discharged from ED→stable)
  - Longer for complications (e.g., empyema) or organism (staph/pseudomonas)

Consistent with ATS/IDSA CAP Guidelines

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

Joshua P. Metlay*, Grant Waterer*, Ann C. Long, Antonio Anzueto, Jan Brozek, Kristina Crothers, Laura A. Cooley, Nathan C. Dean, Michael J. Fine, Scott A. Flanders, Marie R. Griffin, Mark L. Metersky, Daniel M. Musher, Marcos I. Restrepo, and Cynthia G. Whitney; on behalf of the American Thoracic Society and Infectious Diseases Society of America

THIS OFFICIAL CLINICAL PRACTICE GUIDELINE WAS APPROVED BY THE AMERICAN THORACIC SOCIETY MAY ©2019 AND THE INFECTIONS DISEASES SOCIETY OF AMERICA AUGUST 2019

- Terminology "HCAP" has been removed by new guidelines
  - These patients now also eligible for 3-5 days
  - (but not included in following data)

Annals of Internal Medicine

ORIGINAL RESEARCH

Excess Antibiotic Treatment Duration and Adverse Events in Patients Hospitalized With Pneumonia

A Multihospital Cohort Study

6481 patients with pneumonia (48 hospitals)

Two-thirds of patients received excess antibiotic therapy

Vaughn, V et.al. Annals of Internal Medicine. 2019

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ORIGINAL RESEARCH

Excess Antibiotic Treatment Duration and Adverse Events in Patients Hospitalized With Pneumonia

A Multihospital Cohort Study

6481 patients with pneumonia (48 hospitals)

Two-thirds of patients received excess antibiotic therapy

Each excess day of treatment was associated with 5% increase in odds of antibiotic adverse events

Vaughn VM et.al. *Annals of Internal Medicine*. 2019

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

- Based on new clinical trial data…
  - 2024 CAP guidelines will recommend <5 days vs. ≥5 days for community-acquired pneumonia

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FDA Drug Safety Communication: FDA advises restricting fluoroquinolone antibiotic use for certain uncomplicated infections; warns about disabling side effects that can occur together

We have determined that fluoroquinolones should be reserved for use in patients who have no other treatment options for acute bacterial sinusitis, (ABS), acute bacterial exacerbation of chronic bronchitis (ABECB), and uncomplicated urinary tract infections (UTI) because the risk of these serious side effects generally outweighs the benefits in these patients. For some serious bacterial infections the benefits of fluoroquinolones outweigh the risks, and it is appropriate for them to remain available as a therapeutic option.

Good rule of thumb:

Complicated UTI includes signs the infection has spread beyond the bladder (fever, flank pain, sepsis, CVA tenderness)

- Includes pyelonephritis

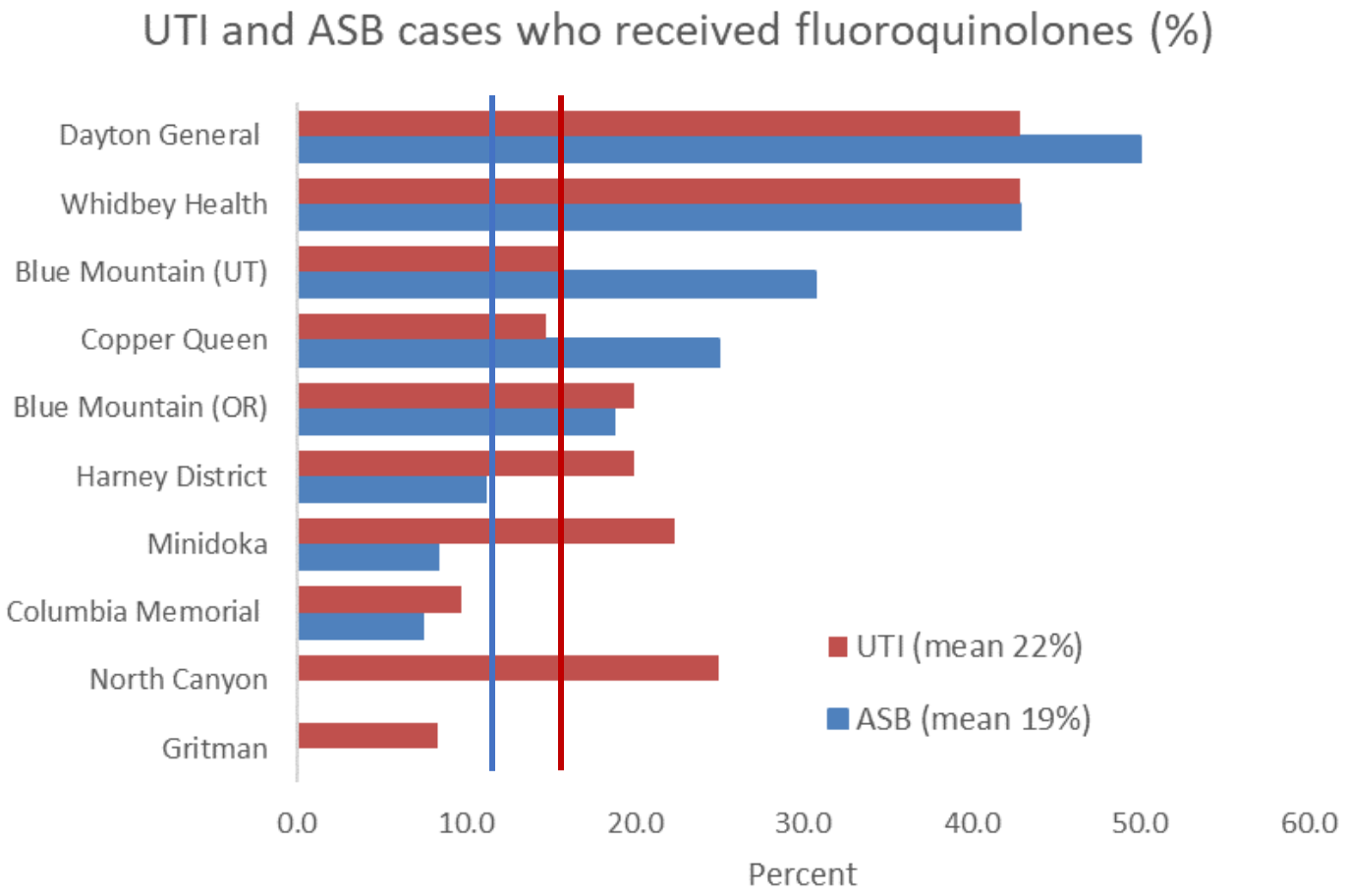
**Consistent with the 2024 planned update to IDSA UTI Guidelines

Three most Common Antibiotics for Empiric and Discharge comparing UTI & ASB

Empiric		Discharge	
UTI, (n=347 of 399)	ASB, (n=143 of 146)	UTI, (n=364 of 399)	ASB, (n=120 of 146)
Ceftriaxone, n=181 (52.2%)	Ceftriaxone, n=71 (49.7%)	Nitrofurantoin, n=53 (14.6%)	Cefdinir, n=0 (0%)
Cephalexin, n=37 (10.7%)	Cephalexin, n=12 (8.4%)	Trimethoprim-Sulfamethoxazole, n=51 (14.0%)	Nitrofurantoin, n=24 (20.0%)
Nitrofurantoin, n=35 (10.1%)	**Ciprofloxacin, n=11 (7.7%)**	Cefdinir, n=49 (13.5%)	**Ciprofloxacin, n=18 (15.0%)**

To improve fluoroquinolone use, look at discharge

Fluoroquinolone Use



Fluoroquinolones - UTI VS ASB			
UTI VS ASB	% FQ inpatient	% FQ discharge	% Any FQ
ASB	15.3%	14.7%	19.3%
UTI	7.6%	16.0%	17.3%

What should our UTI goal be?

	HMS 2022 Comparison
	% Any FQ
ASB	11% (95% CI: 0%-35.4%)
UTI	15% (95% CI: 0%-44.7%)

For pneumonia, good rule of thumb:

Fluoroquinolones should be reserved for:

- Organism resistant to b-lactams (rare)
- Severe allergies to b-lactams (otherwise, if PCN-allergic, use b-lactam)

Low hanging fruit

- Remind people that HCAP is no longer a classification—thus no reason to treat with fluoroquinolones
- Patients treated with unasyn, ceftriaxone in ED
  - 12% of patients switched (likely due to unfamiliarity with oral options)

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Goals

- Just like with UTI, collect 3 cases per month
- Focusing on ED (admitted or discharged)
- Tool quite similar to UTI

Exclusions

- List exclusions

Data collection

- List data collected with * next to what is different from UTI

Summary

- ASB
  - Going into "maintenance mode"
  - 3 cases/month
- Pneumonia
  - Focusing on:
    - duration (goal 3-5 days total)
    - Fluoroquinolone avoidance
- For your UTI cases, we will also give you data on duration and fluoroquinolone avoidance so you can pair your messages