



Antibiotics: Take a Time Out

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What is Antibiotic Stewardship?

- Antibiotic stewardship is the effort to:
 - Measure antibiotic prescribing
 - Improve antibiotic prescribing so that antibiotics are only prescribed and used when needed. **A Time Out can help.**
 - Minimize misdiagnoses or delayed diagnoses leading to underuse of antibiotics
 - Ensure that the right drug, dose, and duration are selected when an antibiotic is needed. **A Time Out can help.**

It's about patient safety and delivering high-quality healthcare

Antibiotic Use in LTC, Ontario, 2010

Antibiotic use patterns for LTC residents in Ontario over a single year

- 75% of the residents (~50,000) received an antibiotic course
- 44% of antibiotic courses exceeded 7 days in length
- In mixed logistic model of resident-level factors, only prescriber was associated with a resident receiving a prolonged treatment ($P < 0.001$)

A subset of providers (n=145) were identified as “long-duration” prescribers (avg. treatment length 11.6 days)

- Prescribing tendencies were not driven by differences in patient demographic characteristics, comorbidities, or care needs

Daneman N et al. JAMAIntMed 2013; 173:673-82

Why Might Clinicians Prescribe Antibiotics Inappropriately?

Lack of knowledge of appropriate indications?

- Providers generally know the guidelines
- Education is important but alone is not very effective

Diagnostic uncertainty and fear of complications?

- Clinicians cite diagnostic uncertainty and fear of infectious complications
- Communicating about adverse events to providers and patients is key

Patient pressure and satisfaction?

- Providers universally cite patient requests for antibiotics
- Communication training can help clinicians use antibiotics appropriately and keep patients satisfied

Habit?

- Peer comparisons may be a key mitigation strategy for these habitual prescribers

Sanchez, EID; 2014; 20(12);2041-7 Jones. *Ann Int Med* 2015;163(2):73-80. Mangione-Smith *Pediatrics* 1999;103(4):711-8. Mangione-Smith *Arch Pediatr Adolesc Med* 2001;155:800-6. Mangione-Smith *Ann Family Med* 2015; 13(3) 221-7. Cals *Ann Family Med* 2013;11(2)157-64. Little *Lancet* 2013;382(9899)1175-82.

Actions

Add stewardship activities in a step-wise fashion

- Implement policies on antibiotic prescribing and use
- Develop communication protocols for relaying information to providers when an infection is suspected
- Establish best practices for use of microbiology and diagnostic testing
- Work with your consultant pharmacist to monitor antibiotic prescribing and use
- Establish facility-specific management and treatment algorithms

Examples of Antibiotic Prescribing Policies

Document the elements of an antibiotic prescribing bundle

Right drug, dose and route

Duration (start date/end date/planned days of therapy)

Indication

Treatment rationale (prophylaxis vs. therapeutic)
and site (e.g., urinary tract, wound, etc.)

Perform an “antibiotic time-out”

Assess a resident 2-3 days after an antibiotic start to determine ongoing need and appropriateness of antibiotic selection

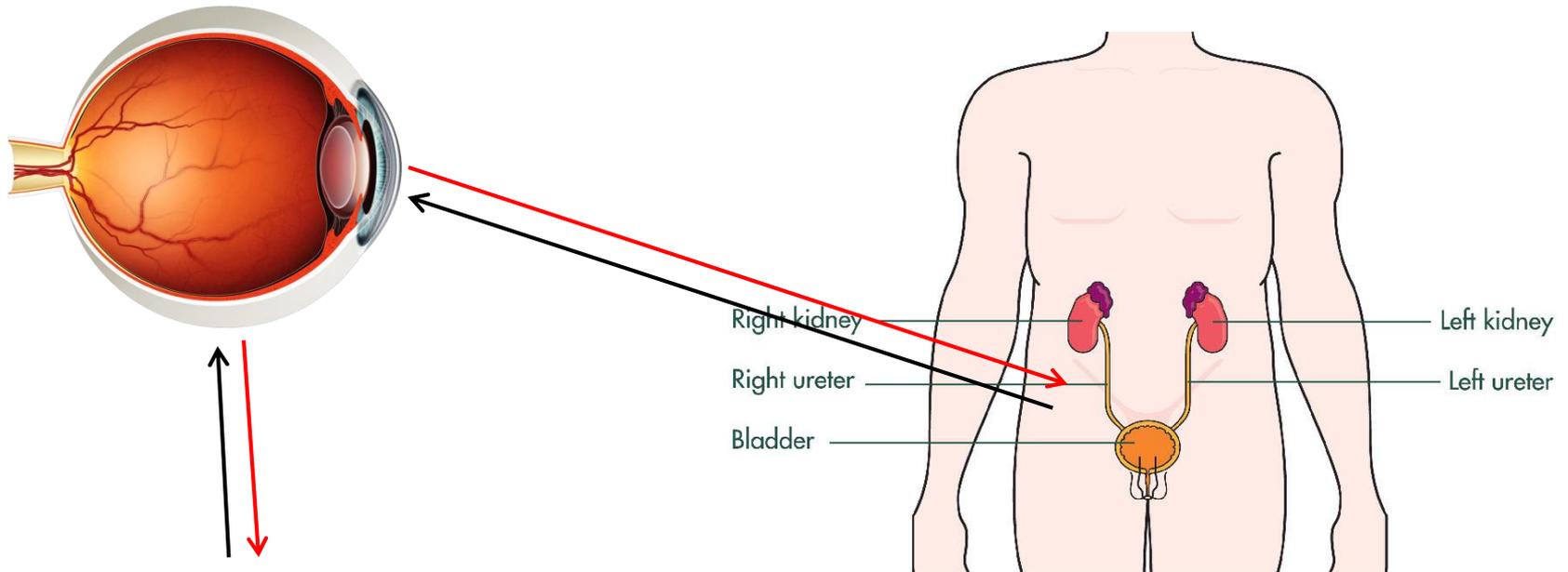
Changes to antibiotic selection may be based on resident’s clinical status, new laboratory or diagnostic data

Questions to Ask During the Time Out

Have a process in place for antibiotic review by the clinical team two to three days after antibiotics are initiated to answer these key questions:

- Based on review of all available clinical and lab data, does this resident have a bacterial infection that will respond to antibiotics?
- If so, is the resident on the most appropriate antibiotic(s), dose, and route of administration?
- Can the spectrum of the antibiotic be narrowed (de-escalation)?
- Can the duration of therapy be shortened?
- Is the necessary documentation present to support the clinical team's assessment and decisions?

Were Antibiotics Prescribed Due to the...



“Gero-Oculo-Vesicular Reflex”

Credit: The Amazing Heidi Wald, MD, MSPH

Look at Fluoroquinolone Use



FDA Boxed Warning: Fluoroquinolones

- Health care professionals should not prescribe fluoroquinolones to patients who have other treatment options for
 - **acute bacterial sinusitis,**
 - **acute bacterial exacerbation of chronic bronchitis,** and
 - **uncomplicated urinary tract infections** because the risks outweigh 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

<https://www.fda.gov/Drugs/DrugSafety?ucm511530.htm>



FDA Boxed Warning: Fluoroquinolones

Associated with disabling and potentially permanent side effects of the tendons, muscles, joints, nerves, and central nervous system

Fluoroquinolones include **ciprofloxacin (marketed as Cipro and generic ciprofloxacin), ciprofloxacin extended-release (marketed as Cipro XR and Proquin XR), gemifloxacin (marketed as Factive), levofloxacin (marketed as Levaquin), and others**

<https://www.fda.gov/Drugs/DrugSafety/ucm511530.htm>

Process Measure: Prescription Auditing Tool

Antibiotic use chart review		Yes	No	Comments
<i>Select a sample of charts from patients with recent antibiotic use (current or the past month). If a patient has multiple courses of Abx, just review the most recent course</i>				
Specify # of charts reviewed: _____		<input type="checkbox"/>	<input type="checkbox"/>	
Documentation of elements at time of prescription				
Rc	a. In ALL charts reviewed, antibiotic dose and route are documented If NO, note # of charts with an indication: _____	<input type="checkbox"/>	<input type="checkbox"/>	
Rc	b. In ALL charts reviewed, duration of therapy, including start date and end date are documented If NO, note # of charts with complete duration: _____	<input type="checkbox"/>	<input type="checkbox"/>	
Rc	c. In ALL charts reviewed, rationale for antibiotic (prophylaxis vs. therapeutic) is documented If NO, note # of charts with an indication: _____	<input type="checkbox"/>	<input type="checkbox"/>	
Rc	d. In ALL charts reviewed, treatment site for antibiotic is documented If NO, note # of charts with an indication: _____	<input type="checkbox"/>	<input type="checkbox"/>	
C	In ALL charts reviewed <u>where microbiology cultures were ordered</u> , Abx were started after culture is obtained If NO, note # of charts with culture ordered: _____ # of charts with culture obtained before antibiotic: _____	<input type="checkbox"/>	<input type="checkbox"/>	
Rc	In ALL charts reviewed, an "antibiotic time-out" was documented in timeframe when culture results would be available (e.g., 2-3 days after start). If NO, note # of charts with post-antibiotic review: _____	<input type="checkbox"/>	<input type="checkbox"/>	

Telligen's Support

- Technical Assistance, Innovative Tools and Resources
 - Antibiotic Stewardship Toolkit for Nursing Homes
 - <https://telligenqinqio.com/our-work/nursing-home-care/>
 - <https://telligenqinqio.com/antibiotic-stewardship-long-term-care/>
- No-Cost Educational Opportunities
 - Webinars; short, on-demand education session; in-person education, and networking opportunities

Thank You!

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Fluoroquinolone Resources

FDA Drug Safety Communication: FDA updates warnings for oral and injectable fluoroquinolone antibiotics due to disabling side effects

<https://www.fda.gov/Drugs/DrugSafety/ucm511530.htm> (see resources listed below near the bottom of this webpage)

- [List of Serious Side Effects from Fluoroquinolones for Systemic use](#)
- [List of Currently Available FDA-approved Fluoroquinolones for Systemic Use](#)
- [Facts about the Fluoroquinolone Drug Class](#)
- [Additional Information for Patients](#)
- [Additional Information for Health Care Professionals](#)
- [Data Summary](#)
- [References](#)

[Medication Guide Levaquin](#)

<https://www.fda.gov/downloads/Drugs/DrugSafety/ucm088619.pdf>