



The Role of the Pharmacist

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Learning Objectives

- Describe the role of the pharmacist in preventing the inappropriate use of antibiotics to treat urinary tract infections(UTIs)
- Identify strategies that enhance a nursing home's utilization of their pharmacist.
- Discuss opportunities for nursing homes to expand the role of their pharmacist.



Antibiotic Stewardship Goal

“optimize the treatment of infections while reducing the adverse events associated with antibiotic use” – CDC Core Elements



Antibiotic use in Nursing Homes

- 47 - 79% of nursing home residents receive antibiotics each year, and antibiotics are prescribed for 77 - 88% of all infectious episodes.
 - Van Buul LW et al; 2012, 13:568. ei-568e13.
 - Smith P et al; Infect Control Hosp Epidemiol 2008, 29:785–814.
- This overuse of antibiotics leads to numerous complications including: drug interactions, antimicrobial resistance, adverse effects, allergies, and increased rates of *Clostridium difficile*.
 - Spellburg et al; Clin Infect Dis. 2011;52(suppl 5):S397-S428.



Antibiotic use in Nursing Homes

- Up to 80% of all antibiotic use is inappropriate in nursing homes.
 - Nicolle LE, et al; Infect Control Hosp Epidemiol. 2000;21(8):537-545.
 - Gupta K, et al; Clin Infect Dis. 2011;52(5):e103-e120.

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What are all these antibiotics prescribed for?

- Ten clinical situations in LTC for which antibiotics are often prescribed, but rarely necessary
 - Available at <http://www.annalsoflongtermcare.com>
 - UTIs, Upper Respiratory symptoms, and skin wounds are commonly treated with antibiotics
 - UTI is the most common infection in LTC and the focus of this Workshop

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Urinary Analysis and Antibiotic use?

- If we tested the urine of everyone in our LTC facility for a UTI what percentage would be positive for bacteria?
 - 25%
 - 50%
 - 75%
- What usually happens when a physician gets a fax with a “positive urine culture”?

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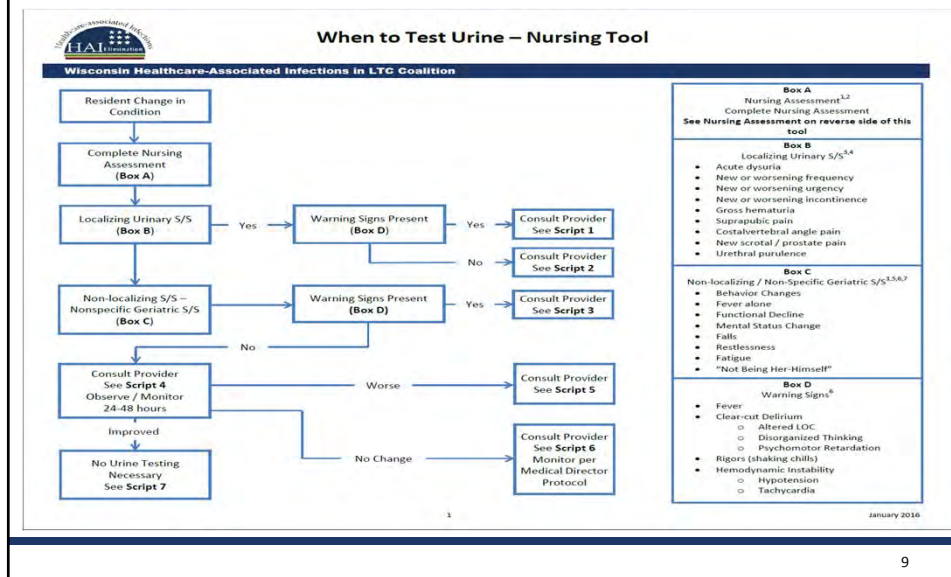


High Risk Situations related to UTI

- Positive urine culture without symptoms = asymptomatic bacteriuria and typically should not be treated
- UA for dark, cloudy or foul smelling urine
 - Suggest pushing fluids and observation
- UA for symptoms not localized to the urinary tract
 - Fall, fatigue, not eating, not him/herself

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So when should we test urine?



Regulatory Impact of Antibiotic overuse

- F329 – Unnecessary Medications
- F441 – Infection Control
- F428 – Medication Regimen Review
 - Risk for this citation will increase if the proposed CMS guidance becomes the final rule



Regulatory F329

- 2015 – 134 total F329 cites in WI, 44 citations (89 examples) were related to antibiotics and UTI
 - 51 were related to the treatment of asymptomatic bacteriuria
 - 21 instances of not collecting cultures or not waiting for culture results in the absence of warning signs before starting antibiotics
 - 14 antibiotics given when sensitivities indicated the bacteria was resistant
 - 3 examples of antibiotic prophylaxis for UTI
- Utilizing the HAI When to Test Urine - Nursing Tool will help decrease unnecessary antibiotic use, but you already know that. 😊 What about your pharmacist?

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Ways to involve your pharmacist

- Medication Regimen Reviews (MRR)
- QAA/QAPI Meetings
- Medical Director/Interdisciplinary Meeting
- Letter of Intent to Providers
- Entrance and Exit Interviews
- Pharmacist Education and In-services
- Off-site Reviews
- Collaborative Practice Agreements

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Medication Regimen Review

- Required monthly or more often if necessary
- Skilled nursing facilities are required to have a pharmacist perform
- Typically bundled with pharmacy dispensing service
- Independent services available



Medication Regimen Review

- All medications are reviewed at least monthly.
- Pharmacist responsibility to identify irregularities and report these to the attending physician, DNS, and medical director if needed.



What about antibiotics?

- MRR is a snapshot in time and may or may not capture a course of antibiotics.
- Facility can help ensure all antibiotics prescribed for UTIs are reviewed
 - Have a list ready for your pharmacist
 - Include Urinary Analysis Orders
 - Include any antibiotic ordered since the pharmacist's last visit
 - Request review for proper antibiotic, diagnosis, dose, and duration.
 - Report findings at QAPI meeting to develop performance improvement plans.

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Resident Example

- During MRR noted 96 yo resident with orders for Macrobid® 100mg po BID x 7 days.
- Nursing notes indicated UA was obtained for increased frequency
- UA culture results were negative

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Revised McGeer: Without Indwelling Catheter

(A) Clinical (At least one of the following must be met)

- Either of the following:
 - Acute dysuria or
 - Acute pain, swelling or tenderness of testes, epididymis or prostate
- If either FEVER or LEUKOCYTOSIS present need to include ONE or more of the following:
 - Acute costovertebral angle pain or tenderness
 - Suprapubic pain
 - Gross hematuria
 - New or marked increase in incontinence
 - New or marked increase in urgency
 - New or marked increase frequency
- If neither FEVER or LEUKOCYTOSIS present INCLUDE TWO or more of the ABOVE (Box #2).


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(B) Lab (At least one of the following must be met)

- VOIDED SPECIMEN: POSITIVE URINE CULTURE ($\geq 10^5$ CFU/ML) NO MORE THAN 2 ORGANISMS
- STRAIGHT CATH SPECIMEN: POSITIVE URINE CULTURE ($\geq 10^2$ CFU/ML) ANY NUMBER OF ORGANISMS

Stone et al. *Infect Control Hosp Epidemiol* 2012; 33:965-977

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CURRENT ORDER: 96 yo LTC resident with recent orders for Macrobid(nitrofurantoin) 100mg po BID x 7 days started 2/3/16 after a UA was obtained for frequency that was not a new symptom. Culture results were negative with <1,000 CFU/ml

There were no localized urinary symptoms or warning signs that would indicate an active urinary tract infection or other focal infection. Per current literature and our facilities antibiotic stewardship guidelines this would be considered an unnecessary antibiotic. McGeers Criteria suggests UTI should be diagnosed when there are localizing genitourinary signs and symptoms and a positive urine. The treatment of asymptomatic bacteriuria in LTC is not recommended.

<p>Localizing Urinary S/Sx</p> <ul style="list-style-type: none"> Acute dysuria New or worsening frequency/Urgency Gross hematuria Suprapubic pain Costalvertebral angle pain New scrotal/prostate pain 	<p>Warning Signs</p> <ul style="list-style-type: none"> Fever Clear Cut Delirium/Altered LOC Psychomotor Retardation Rigors (shaking chills) Hemodynamic Instability Hypotension Tachycardia
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*****AVOID ordering UA with Non-localizing/Non Specific S/Sx*****

<ul style="list-style-type: none"> Behavior Changes Functional Decline Falls "Not Being Her-Himself" 	<ul style="list-style-type: none"> Fever Alone Mental Status Change Fatigue
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RECOMMENDATION: Discontinue Macrobid(nitrofurantoin).

References:
McGeers Criteria available at <http://www.jstor.org/stable/10.1086/667743>



UA for Foul Smelling Urine?

- Resident identified from antibiotic report with orders for levofloxacin, ciprofloxacin, and doxycycline all ordered within the last month
- Chart review reveals
 - Pneumonia treated with levofloxacin 500mg daily x 10 days 1/15/16.
 - Daughter visiting 2/15/16 tells nursing that her mothers urine is dark and foul smelling and requests a UA (no other symptoms besides yelling at staff which is not a new symptom)
 - Started on ciprofloxacin 500mg po BID x7 days awaiting C&S.
 - UA back with >100,000 CFU/ml of Group D enterococcus and Strep viridans – resistant to levofloxacin
 - Ciprofloxacin changed to doxycycline 100mg po BID x 7 days 2/18/16.
 - *Discussion fluoroquinolone use in this patient*



Sample Recommendation to Nursing

Mrs. UTI was treated with three antibiotics since my last visit to the facility. A UA was obtained for this resident for “dark foul smelling” urine per the daughter’s request. Nursing documentation notes she was yelling at staff and had refused breakfast, but that was not a “new behavior” for her. This resulted in the unnecessary treatment with ciprofloxacin and doxycycline for asymptomatic bacteriuria. As we have discussed asymptomatic bacteriuria should not be treated with antibiotics at our facility.

Recommend re-education of nursing staff involved regarding our antibiotic stewardship program and process for obtaining UA’s. Family education about antibiotic stewardship is available on the CDC webpage <http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html> and may be needed to educate Mrs. UTI’s daughter as well. I would also be happy to talk with her.

Please also resend our antibiotic stewardship letter regarding UTI treatment to Dr. Antibiotic and include this example.

Finally lets discuss this case at our upcoming QAPI meeting to review our current stewardship program and get feedback from the Medical Director.



Other Interventions Your Pharmacist Can Help Identify

- Repeat or routine UA orders
- Extended Duration of Therapy (DOT) associated with adverse events, antimicrobial resistance, and increased cost
 - Bactrim DS BID x 10 days for UTI
 - No change in recurrence
 - Higher risk of *C. difficile* infection
 - Drekonja et al. *JAMA Intern Med* 2013; 173(1): 62-8
- De-escalation opportunities
- Evaluating continued need for Foleys (rule out medications as contributory to urinary retention).

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CMS Proposed Rule July 2015

- “We believe that there are specific circumstances under which the pharmacist must at least periodically review the resident’s medical record” ... vs. only reviewing the current medication profile.
- “Those circumstances include transitions in care, specifically when the resident is new to the facility or is returning or being transferred from another facility. We also believe it is critical when a resident is on a psychotropic or antimicrobial medication. In addition, we propose specific requirements related to the use of psychotropic drugs, §483.45(e), and antibiotics”

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CMS Proposed Rule

- We also believe that the pharmacist's review could contribute to our proposed requirements for infection control and antibiotic stewardship. *By reviewing the resident's medical chart, the pharmacist could review whether an infection or communicable disease has been documented in the chart, whether the antibiotic is usually prescribed for that condition, and whether it has been prescribed for the recommended length of time*

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CMS Proposed Rule

- To maximize the effectiveness of this review, we would recommend that *the pharmacist be familiar with the facility's antibiotic use protocols and its system for monitoring antibiotic use*. Thus, we propose that a pharmacist be required to review the resident's medical record coincident with the drug regimen review when
 - (1) The resident is new to the facility
 - (2) A prior resident returns or is transferred from a hospital or other facility
 - (3) *During each monthly drug regimen review when the resident has been prescribed or is taking a psychotropic drug, an antibiotic, or any drug the QAA Committee has requested be included in the pharmacist's monthly drug review.*

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Any Questions Regarding Medication
Regimen Review?

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QAPI / QAA Meetings

- Quality Assessment and Assurance(QAA)
- Quality Assurance and Performance improvement (QAPI)
- CMS proposal
 - “we encourage the QAA Committee to collaborate with the pharmacist to enhance the committee’s understanding and oversight of the facility’s pharmaceutical practices, especially concerning the use of psychotropic drugs and its antibiotic stewardship, as well as their QAPI activities”

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QAA / QAPI

- Present data from the Urine Test Tracking Worksheet and associated antibiotic usage
- Education and Resources
 - WI Healthcare-Associated Infections in LTC Coalition
 - Lots of excellent resources in one place from various groups
 - <https://www.dhs.wisconsin.gov/regulations/nh/hai-introduction.htm>
 - CDC Core Elements is a good high level look for QAA regarding general antibiotic stewardship
 - <http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

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Medical Director

- Schedule a collaborative meeting with the medical director, pharmacist, and nurse management.
 - Great time to present the HAI When to Test Urine - Nursing Tool and get feedback.
 - Set goals and request participation
- American medical directors association(AMDA) guidelines
 - Clinical guidelines available at: <http://www.amda.com/tools/guidelines.cfm>
 - <https://www.amda.com/tools/clinical/Antibiotic%20Use%20and%20Resistance%20in%20Long%20Term%20Care%20Facilities.pdf>
- AMDA leaders conducting 3 year trial investigating ASP and tools for treating UTI in LTC.
 - http://www.amda.com/news/releases/2015/pr_063015_amda_member_to_lead_national_antibiotic_reduction_trial.pdf

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Letter of Intent to Providers

- Agency for Healthcare Research and Quality (AHRQ) – has a good template that can easily be adopted and altered to inform your providers of your plan
 - Send to your pharmacy and pharmacist, especially if they are not engaged
 - <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/nh-aspguide/module1/toolkit1/uti-clinletter.html>



AHRQ Sample letter Handout

Dear XXXXX,

Based on clinical practice guidelines developed by nursing home, infectious diseases, and geriatric experts, our facility has decided to modify its protocol around urinalysis to optimize antibiotic use for urinary tract infections (UTIs). We will use a Suspected Urinary Tract Infection (UTI) Situation, Background, Assessment, and Recommendation Form (UTI SBAR) to facilitate gathering critical information by nurses to communicate to prescribing clinicians. The UTI SBAR form is intended to enhance communication and provide guidance regarding managing potential urinary tract infections and indications for ordering urinalyses and cultures. The UTI SBAR form is based on the SBAR form of communication, or Situation, Background, Assessment, and Recommendation. The SBAR communication style has been shown to promote better communication by addressing the specific types of information that clinicians are likely to need for decision making.



Entrance and Exit Interviews

- This is a good time to discuss medication issues including trends with UTIs and antibiotic prescribing
- Schedule a time with your pharmacist
 - Best case would be on their first visit day of the month in the morning
 - Have antibiotic list and targeted patients to review
 - Review When to Test Urine - Nursing Tool and expectations

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In-services and Education

- In-services are common in LTC
 - “read and sign this please”
- Education provided by pharmacists in LTC are well received.
- Getting nurse buy-in is critical.
 - Also improves nurse pharmacist relationship which leads to more questions and improves patient care (improves pharmacist job satisfaction also)
- Family and resident education is also important

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Family and POA Education

- CDC has education available for Residents and Families
 - Top 10 Infection Prevention Questions to Ask a Nursing Home's Leaders
 - What to Ask Your Healthcare Provider about Antibiotics
 - What You Need to Know About Antibiotics in a Nursing Home.
 - Available at <http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>
- Pharmacists are trained to counsel patients about their disease states and medication. They will be great at providing education to families and residents. Don't be afraid to ask! Marketing opportunity ...

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Offsite Reviews

- Current guidelines require off site pharmacist reviews for short stay and change of condition.
- Gather data and send to pharmacist
 - Lab reports, antibiotic starts, resident details
 - Culture and sensitivity data
 - Antibiotic ordered
 - Indication
 - Serum creatinine
 - Height/weight
 - Current medication list
 - Symptoms (from when to test)
- Potential to utilize HAI Urine Test Tracking spreadsheet

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Barriers to Pharmacist Involvement

- Consultant pharmacists usually visit monthly
 - Rarely have access to electronic medical records off-site and if so they are incomplete
 - Software from the hospitals don't communicate with the nursing home software or the pharmacy software
- “When I call the nursing home it's like they have no idea who I am”
- Physician acceptance
- Cost?

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Pharmacist Return on Investment

- Estimated ROI of \$1.29 per \$1 in MTM administrative costs.
 - 93% of respondents agreed or strongly agreed that their overall health and well-being had improved because of the pharmacist involvement.
 - Ramalho de Oliveira D, Brummel AR, Miller DB. Medication therapy management: 10 years of experience in a large integrated health care system. *J Manag Care Pharm.* 2010 Apr;16(3):185-95.
- Savings were more than 2.5 times the cost of the fees for pharmacists and network administration.
 - Pharmacist identified 917 drug therapy problems in only 88 patients in less than a year during this CMS project.
 - Smith M, Giuliano MR, Starkowski MP. In Connecticut: improving patient medication management in primary care. *Health Aff (Millwood).* 2011 Apr;30(4):646-54. www.ncbi.nlm.nih.gov/pubmed/21471485

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Pharmacist Return on Investment

- Savings of 4 dollars for every 1 dollar spent based only on actual medication costs. Soft savings would be multiples higher
 - Unpublished data from AlixaRx MROC pharmacists reviewing medications upon admission to skilled nursing facilities



Expanding the Pharmacist Role

WI Act 294

450.033 Services delegated by physician. A pharmacist may perform any patient care service delegated to the pharmacist by a physician, as defined in s. 448.01 (5).



Collaborative Practice Agreements

- Gaining steam in Wisconsin
 - VA has been utilizing for years
 - Dean and SSM have started utilizing primary care pharmacists in their clinics
 - Has not made its way to LTC
 - HAI Coalition will be working with a pharmacy student from Concordia University to develop a sample agreement for adoption and alteration.



Collaborative Practice Ideas

- Lab protocols to monitor drug therapy
 - Several antibiotics used to treat UTI require renal dosing adjustments that can be made by the pharmacist
 - PO and IV antibiotics
- De-escalation
 - i.e. Cipro to Bactrim
- Change antibiotics when C&S results back
- This can be applied to several disease states



Take Home Message

- Embrace and encourage pharmacy involvement
 - LTC facilities have access to clinical/consultant pharmacists that other providers wish they had.
 - Increasing trend of nurse practitioner model
 - Pharmacists and nurse practitioners can make a great team.
- Raise the bar for your facility and pharmacist
 - Sometimes all we need is a little push to light the fire
- Scheduled a short meeting with your pharmacist during their next visit and share what you learned today.
 - Tell them you will be implementing the When to Test Nursing Tool and you want them to help you ensure antibiotics used to treat UTIs at your facility are appropriate.

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Questions?

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