

Fourth Quarter 2021 Vol. XIV, Issue 4

Special Points of Interest:

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- Policy and Procedure Update
- Antimicrobial Stewardship: Asymptomatic Bacteriuria
- UH Antimicrobial Stewardship Program (ASP) The New Jersey Department of Health Recognition
- Utility of methicillin-resistant Staphylococcus aureus (MRSA) polymerase chain reaction (PCR) to minimize empiric anti-MRSA therapy at University Hospital (UH)

EDITORS:

Andre Emont
Pharmacy Director

Victor Pardo
Operations Manager

Michael Chu
Clinical Pharmacy Manager

Nishat Faruqui
Clinical Pharmacist

Helen Horng
Clinical Pharmacist

Dina Meawad
Clinical Pharmacist

Merlin Punnoose
Clinical Pharmacist

Arun Mattappallil
Clinical Pharmacist

Jaclyn Scalgione
Clinical Pharmacist

Jeff Macaluso
Clinical Pharmacist

Irene Yang
Clinical Pharmacist

Aidan Ziobro
Clinical Pharmacist

Andrew (Joe) Plott
Clinical Pharmacist

Nadeem Baalbaki
Clinical Pharmacist

P&T Update

Formulary Additions

1. **Sodium Tetradecyl Sulfate (Sotradecol™)- Approved**
Sodium tetradecyl sulfate (STS) is a sclerosing agent requested by the vascular center for the treatment of varicose veins >4 mm. Currently polidocanol 0.5% and 1% are on the formulary. Motion to keep polidocanol on formulary for small veins and cosmetic cases and adding STS for the large veins- Approved.
2. **Artesunate IV - Approved**
Artesunate is being requested for formulary addition as the treatment option for severe malaria. Motion to add artesunate IV to formulary for the treatment of severe malaria with restriction to the ID consult service- Approved
3. **Sodium citrate 4% - Approved**
Sodium citrate 4% is used in dialysis patients as catheter lock, it is currently procured as compounded syringes from a compounding pharmacy. There have been some recent issues with ordering the product. Heparin is the alternative option and is cheaper for the same indication. Request is to restrict sodium citrate to only patients with heparin allergies or HIT (or suspected HIT) for the dialysis catheter locks, all other patients would get heparin- Approved

Formulary Deletions

1. **Ethyl alcohol 98% 5mL Formulary deletion**
Manufacturer Discontinued. Formulary deletion approved.

Line Extension

1. **Ethyl alcohol 99% 5mL**
Formulary line extension approved. To be stocked in the main pharmacy.

Policies & Procedures/Floor stocks

1. Prescribing of Chemotherapy & Biotherapy Agents

Section is modified to include carboplatin dosing based on body surface area (BSA) to target area under the concentration curve (AUC). Also calculation of creatinine clearance (CrCl) to use actual weight if Body Mass Index (BMI) is < 25. If BMI > 25, use adjusted weight for CrCl calculation- Approved

Hospital Formulary Request Update

1. Update in the formulary form to require where the requested medication is going to be used (inpatient, outpatient, both) - Approved

Maternal Severe Hypertension Policy

1. A new policy for maternal hypertension is being brought forward by a multi-disciplinary team of L&D and ED. - Approved

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P&T Update

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Clinical/Medication Guidelines

ED Empiric Antibiotic guidelines have been updated to reflect the 2021 CDC Sexually Transmitted Infection Guidelines – Approved

ED Sexual Assault guidelines have been updated to reflect the 2021 CDC Sexually Transmitted Infection Guidelines – Approved

Neonatal Hypoglycemia Treatment Guidelines Update- Previous guidelines recommended treating neonatal hypoglycemia with a blood glucose < 60 mg/dL, but current AAP guidelines recommend treatment for blood glucose < 50 mg/dL. UH algorithm now incorporates the recommended lower threshold for treatment – Approved

Antimicrobial Stewardship: Asymptomatic Bacteriuria

Asymptomatic bacteriuria (ASB) defined as the presence of bacteria, irrespective of pyuria and in the absence of signs or symptoms attributable to urinary tract infections, is a common finding in various populations that is often mismanaged by antibiotics due to a reflex to treat positive cultures.¹ Although we have current guidance from the Infectious Diseases Society of America with the 2019 ASB guidelines, outdated practices continue to creep into our present-day practice settings.¹ The general concept with asymptomatic bacteriuria is to treat the patient and their symptoms as opposed to laboratory findings alone. In many cases in patients with positive cultures that do not have any urinary or systemic signs and symptoms of infection, treatment is usually not recommended, although there are some exceptions.¹ The common myths surrounding asymptomatic bacteriuria are obstacles that will continuously require education to all health care professionals in order to decrease the unnecessary use of antibiotics. In turn, this will decrease antimicrobial resistance, antimicrobial adverse effects and other infections like *Clostridioides difficile*.² In light of Antibiotic Awareness Week that took place from November 18th to November 24th, the antimicrobial stewardship team created and posted an educational screensaver throughout University Hospital debunking common myths surrounding the management of ASB and urinary tract infections (Figure 1).^{1,2} Antimicrobial resistance is an ongoing global issue that will require the effort of all health care professionals to combat effectively.

References:

1. Nicolle LE, Gupta K, Bradley SF, Colgan R, DeMuri GP, Drekonja D, Eckert LO, Geerlings SE, Köves B, Hooton TM, Juthani-Mehta M, Knight SL, Saint S, Schaeffer AJ, Trautner B, Wullt B, Siemieniuk R. Clinical Practice Guideline for the Management of Asymptomatic Bacteriuria: 2019 Update by the Infectious Diseases Society of America. *Clin Infect Dis*. 2019 May 2;68(10):e83-e110.
2. Schulz L, Hoffman RJ, Pothof J, Fox B. Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections. *J Emerg Med*. 2016 Jul;51(1):25-30.

Submitted by:

Nadeem Baalbaki, PharmD, Clinical Pharmacy Specialist – Infectious Diseases, University Hospital

Asymptomatic Bacteriuria MythBusters



MYTH → FACT

<p>Positive urine culture/urinalysis = UTI</p> 	<p>Most patients with bacteria in the urine <u>without</u> symptoms do NOT need antibiotics</p> 
<p>Cloudy and smelly urine = UTI</p> 	<p>Food, medicine, and dehydration can cause cloudy and smelly urine</p> 
<p>There is no risk in giving antibiotics</p> 	<p>Antibiotics can cause:</p> <ul style="list-style-type: none"> - Resistance - Side effects - Superinfections 
<p>Altered mental status and/or falls = UTI</p> 	<p>Consider alternative cause with no other signs/symptoms of infection</p> 

Questions?

Reach out to our Antimicrobial Stewardship Team

Debra Chew, MD: Ext 9070 or TigerConnect

Arun Mattappallil, PharmD: Ext 1250 or TigerConnect

Nadeem Baalbaki, PharmD: Ext 4807 or TigerConnect

References:
 * Nicolle LE, Gupta K, Bradley SF, et al. Clinical Practice Guideline for the Management of Asymptomatic Bacteriuria: 2019 Update by the Infectious Diseases Society of America. *Clin Infect Dis*. 2019;68(10):e83-e110.
 • Schulz L, Hoffman RJ, Pothof J, Fox B. Top Ten Myths Regarding the Diagnosis and Treatment of Urinary Tract Infections. *J Emerg Med*. 2016;51(1):25-30.

Pharmacy News

UH Antimicrobial Stewardship Program (ASP) The New Jersey Department of Health Recognition

The New Jersey Department of Health Antimicrobial Stewardship Recognition Program acknowledges health care facilities and physician practices who demonstrate, through written documentation, that they have met or exceeded the minimum expectations for the Centers for Disease Control and Prevention (CDC) Core Elements of Antimicrobial Stewardship.

This recognition is based solely on satisfaction of CDC criteria and does not otherwise constitute an endorsement of any health care facility or physician practice by the New Jersey Department of Health.

The Communicable Disease Service of the New Jersey Department of Health granted University Hospital with the Silver Antimicrobial Steward Award for our antimicrobial stewardship program during the past year.

Our prior designation was under a Bronze Award.

We are among an elite group of facilities who have remained steadfast from 2020 to 2021 to promote antimicrobial stewardship practices that encourage and maintain the health of our patients, residents, personnel, and the general New Jersey population.

Given the current demands on healthcare facilities throughout New Jersey, our dedication to stewardship is inspiring and should be lauded.

Submitted by:

Arun Mattappallil, Pharm. D., Clinical Pharmacy Specialist – Infectious Diseases, University Hospital



Utility of methicillin-resistant Staphylococcus aureus (MRSA) polymerase chain reaction (PCR) to minimize empiric anti-MRSA therapy at University Hospital (UH)

Prevalence of methicillin-resistant Staphylococcus aureus (MRSA) infection in hospitalized patients are relatively low but important in empiric coverage consideration. Infectious Diseases Society of America (IDSA) guidelines for hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP) recommend empirical coverage of MRSA in patients with intravenous antibiotic exposure in the past 90 days, hospitalization at an institution with 20% of S. aureus isolates identified as MRSA, or in patients at high risk of mortality (e.g., need for mechanical ventilation or presence of shock) (4).

Tailoring the anti-infective regimen is recommended when microbiological data are available. As a result, anti MRSA antibiotics are often started and continued for 48-72 hours before microbiological data are available to support de-escalation.

Growing literature documents are suggesting that MRSA nasal screens can be used as surrogate markers for MRSA pneumonia de-escalation. Multiple studies have shown high negative predictive value (NPV) (greater than 94%) using nasal MRSA polymerase chain reaction (PCR) 1,2,3,4. This strategy has led to a decrease in anti-MRSA antibiotic therapy use by 2 days.

The next question is how long can negative MRSA PCR nasal screens be used to rule out MRSA pneumonia? Recent publication by Baby et al (5) demonstrated a 98.6% NPV up to 7 days and a 92.9% NPV 8 to 14 days.

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Utility of methicillin-resistant *Staphylococcus aureus* (MRSA) polymerase chain reaction (PCR) to minimize empiric anti-MRSA therapy at University Hospital (UH)

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An internal review was performed of all patients admitted to University Hospital and had a MRSA PCR ordered between January 1st 2019 to March 31st 2021. A total of 2,425 in-patients had 3,020 MRSA PCR results that accounted for 2,658 admissions.

Based on our internal review, we also verify the NPV at UH is also > 94%. Recommendation was made to limit MRSA PCR repeat test to < 7 days which can lead to lab cost avoidance.

Surgical ICU has implemented routine nasal MRSA PCR only when initiating empiric anti-infectives are being considered. Anecdotally, this new protocol has avoided or minimized the use of empiric anti-MRSA coverage. Repeat MRSA PCR test is not recommended within 7 days.

A follow-up review is planned to evaluate the impact of this newly implemented protocol after one year.

References:

1. Tilahun B, Faust AC, McCorstin P, Ortegon A. 2015. Nasal colonization and lower respiratory tract infections with methicillin-resistant *Staphylococcus aureus*. *Am J Crit Care* 24:8 –12. <https://doi.org/10.4037/ajcc2015102>
2. Langsjoen J, Brady C, Obenauf E, Kellie S. 2014. Nasal screening is useful in excluding methicillin-resistant *Staphylococcus aureus* in ventilator associated pneumonia. *Am J Infect Control* 42:1014 –1015. <https://doi.org/10.1016/j.ajic.2014.05.026>.
3. Dangerfield B, Chung A, Webb B, Seville MT. 2014. Predictive value of methicillin-resistant *Staphylococcus aureus* (MRSA) nasal swab PCR assay for MRSA pneumonia. *Antimicrob Agents Chemother* 58:859 – 864. <https://doi.org/10.1128/AAC.01805-13>.
4. Johnson JA, Wright ME, Sheperd LA, Musher DM, Dang BN. 2015. Nasal methicillin-resistant *Staphylococcus aureus* polymerase chain reaction: a potential use in guiding antibiotic therapy for pneumonia. *Perm J* 19:34 –36.
5. Baby N, Faust AC, Smith T et al. Nasal Methicillin-Resistant *Staphylococcus aureus*(MRSA) PCR Testing Reduces the Duration of MRSA-Targeted Therapy in Patients with Suspected MRSA Pneumonia. *Antimicrob Agents Chemother* 61:e02432-16. <https://doi.org/10.1128/AAC.02432-16>.

Submitted by:

Helen Horng, Pharm.D., BCCCP, Clinical Pharmacist Specialist, University Hospital

Welcome New Staff Pharmacist



Omar Mercado, Pharm. D.

Dr. Omar Mercado earned his Doctor of Pharmacy degree at the Ernest Mario School of Pharmacy at Rutgers University. Prior to attending Rutgers, he worked several years as a Pharmacy Technician at CVS/Health and Hackensack Meridian Mountainside Medical Center. These experiences influenced his decision to pursue a career in pharmacy.

Bernadine Flores, PharmD

Dr. Bernadine graduated from the Philadelphia College of Pharmacy with her Bachelor's degree in Pharmaceutical and Healthcare Studies and her Doctor of Pharmacy. She also received her minor in Pharmaceutical and Healthcare Business. Bernadine has had the privilege to work with CVS as both an intern and pharmacist for 6 years before coming here to University Hospital. While working as a full-time staff pharmacist, she is going back to school part-time at Rutgers Camden for her Master's in Business Administration. At University Hospital, she is looking forward to working more with everyone and to gaining more knowledge clinically.

