**New NVSHP Research Publication!**

**By: Megan Farrell, PharmD, PGY-1 Resident, NVSHP Member**

NVSHP will now be accepting manuscripts for yearly research publication. Manuscripts will be published at [nvshp.org](http://nvshp.org/) for the entire Nevada pharmacy community to learn from! Publication of new material will occur annually each fall.

**Newest Publications – 2022**

**Congratulations to this year’s recognized authors!**

**The impact of a pharmacist on inpatient urinary tract infections**

Aspen Bryant, PharmD – St. Rose Dominican Hospital – Siena Campus

**Background:** About 150 million urinary tract infections (UTIs) occur globally every year. High prevalence of infection correlates with high antibiotic prescribing and the potential for antibiotic overuse. Inappropriate antibiotic use may approach up to 50%. The rapid, worldwide occurrence of antimicrobial resistance is endangering the efficacy of antibiotics and antibiotic overuse is a major cause. Pharmacists have the potential to play a role in reducing antimicrobial resistance by monitoring for appropriate antibiotic usage. There are different types of UTIs: pyelonephritis (involving the upper urinary tract) and cystitis (only involving the lower urinary tract). These types can be further broken down into uncomplicated (occurring in females, cystitis and lower urinary tract symptoms only) and complicated (occurring in males, pyelonephritis, and/or cystitis with one or more complicating factors). The recommended treatment for an uncomplicated UTI is 3 to 7 days of antibiotics. The recommended treatment for a complicated UTI is typically 5 to 14 days of antibiotics.

Aspen completed her PGY-1 residency at St. Rose Dominican Hospital in 2022 and she currently practices at St. Rose Dominican Hospital – Siena Campus in Henderson, Nevada.

**Dose effectiveness of piperacillin/tazobactam in prophylaxis of type III open fractures**

Justin N. Fernando, PharmD – University Medical Center of Southern Nevada

**Background:** Open-fractures are commonly classified using the Gustilo-Anderson classification system. A type III fracture is defined as an open segmental fracture, open fracture with extensive soft tissue damage, or a traumatic amputation. Patients with type III fractures have up to a 40% chance of developing an infection at the site of injury. Piperacillin/tazobactam is sometimes used for post-operative prophylaxis in this patient population, however optimal dosing strategies are unknown. This study explored the safety and efficacy of different doses of piperacillin/tazobactam in the prevention of surgical site infections in contaminated type-III open fractures.

Justin completed his PGY-1 residency program at St. Rose Dominican Hospital, he went on to complete his PGY-2 residency in critical care medicine at University Medical Center of Southern Nevada. He currently practices at University Medical Center of Southern Nevada in Las Vegas, Nevada.

**Rates of vancomycin associated nephrotoxicity when converting to AUC in a community hospital**

Vivian Lee, PharmD – St. Rose Dominican Hospital – Siena Campus

**Background:** Vancomycin is the mainstay treatment for methicillin-resistant Staphylococcus aureus (MRSA) infections. Efficacious treatment is typically associated with an AUC: MIC between 400-600 mcg\*h/mL. Recent studies have suggested that using a trough of 15 mg/L as a surrogate marker inaccurately estimates AUC and correlates with increased risk of nephrotoxicity. Vancomycin induced nephrotoxicity (VIN) is the development of acute kidney injury (AKI) on vancomycin therapy with no other apparent cause. The 2020 revised consensus guideline on therapeutic monitoring of vancomycin for serious MRSA infections now recommend AUC-guided dosing and monitoring as the most accurate and optimal way to manage therapy. The objective of this study aims to evaluate the safety of AUC-guided dosing as compared to trough-based dosing in relation to the rates of VIN in a community hospital setting.

Vivian completed her PGY-1 residency program at St. Rose Dominican Hospital and she currently practices at The Medical Center of Aurora in Aurora, Colorado.

To view the complete manuscript and findings for each of these projects please visit us at nvshp.org in our section entitled “Manuscript Publications”.

**How can I get involved?**

If you are interested in being included in a future research publication with NVSHP, please visit us at [nvshp.org](http://nvshp.org/) and check out our “Announcement” section for more information! There you will be able to locate all the relevant documents such as our manuscript submission checklist, sample manuscript, and our approved template.

We accept submissions for possible publication from pharmacist, resident, student, and technician members of the organization. The submission window for 2023 publication is expected to open on January 1, 2023, please keep an eye out for updates and further information as the new year approaches.

We hope to hear from anyone interested in sharing their research or formal quality improvement project with the Nevada pharmacy community! Please feel free to reach out with any questions regarding submissions or publications!

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Contact us at [nvshp@nvshp.org](mailto:nvshp@nvshp.org) with questions