**Introduction**

SBH Health System (SBH) is a community-based, patient-friendly healthcare system serving individuals in the Bronx, New York. SBH Health System is committed to improving the healthcare of its community and is dedicated to providing the safest and highest quality of care.

After performing an analysis of Medication Errors in the Adult patient population, we focused on working towards reductions in the inappropriate prescribing and monitoring of Vancomycin.

- Vancomycin is a commonly used antibiotic which requires care in prescribing and monitoring.
- Inappropriate dosing can lead to disturbances in therapeutic serum trough concentrations, adverse effects, resistance and treatment failure.\(^1\)
- Electronic order sets have been shown to provide better quality, efficacy of care and increased adherence to evidence based recommendations resulting in significant improvements to the appropriate, initial dosing of Vancomycin.\(^2\)

Errors prior to implementation of the advanced Vancomycin Order Set:

**Prescribers:**
- Incorrect physician order entry
- Lacked relevant clinical decision support to facilitate the order entry process

**Pharmacists:**
- Incorrect weight based dosing
- Lacked orders including appropriate decision support

**Nurses:**
- Incorrect order & administration of medication
- Lacked auto-populated, pertinent administration & monitoring instructions

**Methods**

We developed a new parent order set that incorporated two new child order sets within it:

1. Vancomycin Injectable First/STAT Dose OS
2. Vancomycin Injectable Maintenance OS

Selected indication will carry forward to the following, child order set. Carrying the indication into all subsequent orders ensures uniformity.

**Conclusions**

We analyzed the number of cases of Vancomycin-induced nephrotoxicity 3 months prior to and 3 months after the introduction of the new Vancomycin Injectable Adult Order Set.

While performing a retrospective cohort study, we evaluated that there were 3 cases of Vancomycin-induced nephrotoxicity amongst 141 patients prior to the introduction of the new order set. In the 3 months after the introduction of the order set, we saw that there were no cases of nephrotoxicity when evaluating 125 patients.

Implementation of this order set brought with it many noticeable and enhanced improvements during the order entry process including:

- **Weight based dose auto-calculation** – Helps in more accurate Vancomycin dosing for patients to avoid over or under dosing.
- **Dose limit warnings and alerts** – For example, alerts will generate recommending not to use Vancomycin when SCr is elevated, or cap doses greater than 1,500 mg to Infectious Disease (ID) Physicians only.
- **Prescribing decision support** – Provides guidelines on dose and frequency allowing providers to tailor the dose appropriately.
- **Monitoring of initial and daily doses** – When initiating therapy, it is important to check the therapeutic drug concentration especially for those patients with narrow therapeutic ranges. Therefore, all relevant results will flow into the order set to better facilitate clinical decision making without forcing the provider to leave the order entry screen.

Prior to implementation, multiple training sessions were conducted to educate prescribers about this new order set. To maximize compliance and force utilization of all enhanced features, we implemented an MLM to block the use of “Discontinue/Reorder”, “Copy/Reorder”, and “Reinstall” functionality such that prescribers can only order or re-order Vancomycin by using this new order set.

The new order set with all of its enriched clinical decision support and automation will continue to increase patient safety while following best practices to improve patient outcomes while improving the provider’s CPOE experience.

**References**