

## Summer Record

Mentor: Alexandra Charron MD and Brandy Zeller PharmD BCPPS

Title: *Application of an Antibiotic Spectrum Index in Very Low Birthweight Infants in Neonatal Intensive Care*

Objective: Apply an antibiotic spectrum index (ASI) to a very low birthweight (VLBW) neonatal intensive care unit (NICU) population and evaluate the impact of an antimicrobial stewardship program on antibiotic exposure.

Methods: A single center retrospective chart review of VLBW infants inborn at St. Louis Children's Hospital NICU in 2014 and 2017 was conducted. Infants were excluded if survival <5 days. Demographics and specific antibiotic exposure for the duration of NICU admission were collected. ASI for each patient was calculated based on antibiotic's score as assigned by Erber et al. ASI/antibiotic day (AD) and days of therapy (DOT)/1000 patient days (PD) for the 2014 and 2017 patient populations were compared.

Results: In 2014, 100% of VLBW neonates were exposed to antibiotics during their NICU course. In 2017, 12.5% VLBW neonates received no antibiotics during their NICU course. DOT/1000 PD was reduced by 43% between the 2014 and 2017 cohorts. ASI/AD was reduced by 23% between the 2014 and 2017 cohorts. ASI/AD decreased significantly in all gestational age (GA) groups. DOT/1000 PD did not decrease significantly in the neonates born at the earliest gestational age group.

Conclusion: Significant decrease in ASI/AD and DOT/1000 PD demonstrates an ASP's impact on both duration and spectrum of agents used. Significant change in ASI/AD with minimal change in DOT/1000 PD in neonates  $\leq 26$  weeks highlights the ability of the ASI to reflect changes in prescribing patterns beyond duration of use.