



Extended Spectrum Beta Lactamase (ESBL) Producing Bacteria Testing on Admission to Niagara Health's Inpatient Oncology Unit

Background/Objectives

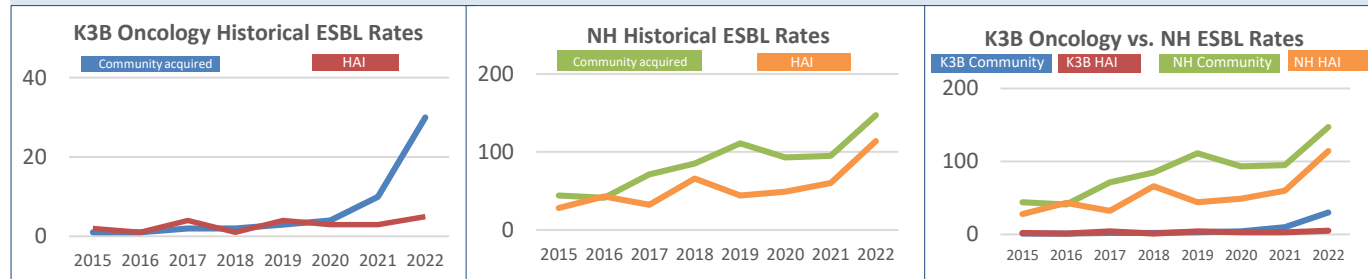
For the first time at Niagara Health (NH), four ESBL outbreaks were declared and an increasing number of ESBL cases were being identified from the community. ESBL testing on admission to NH is not routinely done however due to the increase, the IPAC Medical Director initiated admission testing on the 38-bed oncology unit at the St. Catharine's Site beginning June 2022. The objective of this testing was to capture unknown positives in order to reduce transmission to other immunocompromised patients.

Methods

Rectal swabs were collected for all patients within 48 hours of admission to the unit (excluding time spent in ED). Urine cultures were only completed for catheterized patients. If a patient was previously on another unit (excluding ED), then positive cases were attributed to their last location. Publically reported data on healthcare acquired (HAI) ESBL cases from 2015-2022 was analyzed.

Results

- **30 cases** of ESBL were captured on admission testing to the unit from June 1, 2022 to January 4, 2023.
- **Escherichia coli** was the most common type and the majority of cases were **colonized** (rectal).
- **RISK FACTORS:** 13% of cases had a catheter, 7% were diagnosed with a UTI and 17% came from another hospital or congregate setting. 33% of the cases used antibiotics in the three months prior to testing positive. 50% of the cases were oncology and 50% were medical.
- Several of the community cases identified had contacts in shared rooms, however **no contacts tested positive**.
- **Three HAI cases of ESBL were identified during this study (five total in all of 2022).** Case one was not correctly tested within 48 hours of admission. Case two was already colonized and became infected in the blood. Case three had no known exposure and developed ESBL bacteremia and a urinary tract infection
- **HISTORICAL DATA:** In the preceding seven years, the number of HAI cases attributed to the unit was 1-4 per year (average 2.71) and the number of HAI cases attributed to NH was 28-66 per year (average 46).



Conclusion

In 2022, the number of HAI ESBL cases across NH increased to 114 (about **2.5x higher**) from the preceding seven-year average of 46, yet the oncology unit number of HAI ESBL only increased to 5 (about **1.9x higher**) from the preceding seven-year average of 2.7. There were four outbreaks that influenced this increase across NH. None of the HAI cases identified on the oncology unit had direct epi-links to other cases, therefore it is unclear if rapid identification of community acquired cases truly lowered the transmission risk of ESBL. **It was recommended to complete one further year of ESBL admission testing on the oncology unit.**