Use of Meropenem at Ascension Via Christi Hospitals: A Quality Improvement Project

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Introduction. At Ascension Via Christi Hospitals, we identified a rise in the use of Meropenem, a broad-spectrum antibiotic effective against multi drug resistant (MDR) organisms. This project aims to evaluate meropenem utilization among non-Infectious Disease (ID) physicians and identify opportunities for optimizing use.

Baseline Measurement. Outcome measures included frequency and duration of Meropenem use, appropriateness of indications, and alignment with microbiologic diagnoses. Process Measures were identification of risk factors for MDR organisms and assessment of empiric vs. targeted therapy**.**

Design. A retrospective chart audit of all orders for Meropenem from October 2023 to April 2024 was performed. Data were collected regarding duration, indication, microbiologic diagnosis, and ordering service.

Results. Of 100 Meropenem orders reviewed, 27 originated from non-ID services. Hospitalists accounted for 52%, surgery 30%, medical residents 11%, and pulmonary 7%. Duration of therapy ranged from 1–11 days (median: 3; mean: 4.4). Empiric therapy accounted for 48% of orders, 50% of which were for pneumonia (PNA), though most lacked MDR risk factors. Only 18.5% had an ESBL diagnosis, over half being urinary tract infections (UTIs). 11% were escalated after failure of other antipseudomonal antibiotics (piperacillin-tazobactam and cefepime), and another 11% continued without a clear indication. Only one case targeted MDR *Pseudomonas aeruginosa*.

Conclusions. The most common use of carbapenems among non-ID providers is empiric therapy. To optimize use, we recommend identifying specific risk factors, prompt de-escalation, shorter treatment durations for PNA, and exploring carbapenem-sparing alternatives for UTI. Restricting carbapenem to ID providers is another strategy to limit empiric use and promote appropriate stewardship.