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Publishing Title: Changes in Susceptibility to Polymyxin B Amongst Clinical Specimens in a New York Hospital, 2005-2008.

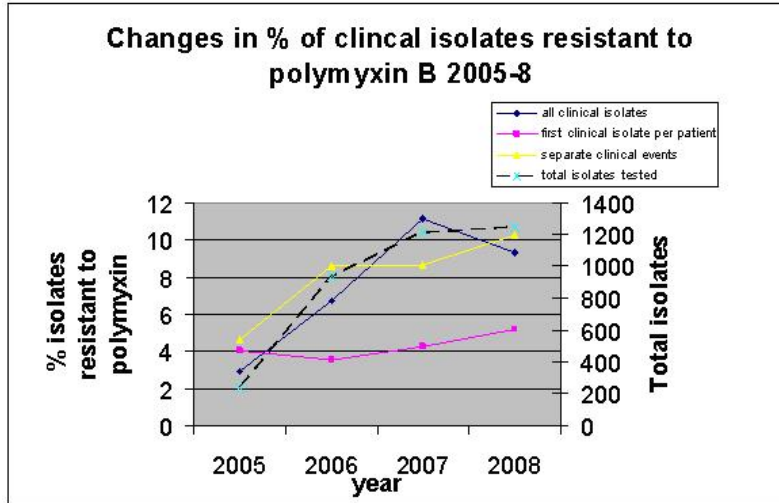
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Abstract Body: **Background:** Increasing numbers of multi-drug resistant gram-negative infections are reported in hospitals in United States. Polymyxin B (P) is one of the few antimicrobial agents that remain active against these organisms. We evaluated the burden on microbiology services in investigating these clinical isolates and describe the trend of polymyxin B resistance seen in highly drug resistant gram-negative isolates from a large tertiary care hospital in New York.

Methods: A retrospective analysis was conducted of clinical isolates submitted to Columbia Univ. Medical Center's microbiology laboratory between 2005-8. Specimens growing *Klebsiella pneumoniae*, *Acinetobacter baumannii*, or *Pseudomonas aeruginosa* spp that were evaluated for in vitro susceptibility to P by E-test were extracted. Resistance was defined as an MIC to polymyxin > 2 ug/ml. Comparisons were made using chi-square tests.

Results: 3639 specimens were analyzed which originated from 1041 different patients. The most common source sites were respiratory (46%) and urine (26%). Nearly 40% (1195/3639) of specimens were sent from an ICU setting. Both hospital location and organism species (*K. pneumoniae* 12%, *P. aeruginosa* 8% and *A. baumannii* 2%) were associated with resistance to P ($p < .0001$ for both comparisons). Anatomical site was not associated with resistance to P. Trends in resistance to P over time are illustrated in Figure.

Conclusion: Increasing multi-drug resistant gram negative infections have resulted in an increasing burden of enhanced microbiological testing. There is a slow rise in the number of clinical isolates demonstrating polymyxin B resistance and a large proportion of these infections are likely being acquired in ICU settings. . This has implications on resources, treatment options, and outcomes.



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