the interventions and improved pathogen susceptibility profiles.

Conclusion: Rationalizing antimicrobial use proved to be an effective strategy for reducing microbial resistance and improving patient safety. Daily interactions with care teams contributed to more appropriate therapeutic decisions, directly reducing antimicrobial consumption and controlling multidrug-resistant strains. Strengthening stewardship programs should be a priority in healthcare institutions.

Keywords: Antimicrobials, Microbial resistance, Patient safety, Rational prescription, Stewardship program.

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COST REDUCTION AND RESOURCE OPTIMIZATION: ECONOMIC EVALUATION OF AN ANTIMICROBIAL PROGRAM IN AN INFECTIOUS DISEASES HOSPITAL

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Introduction/Objective: The Antimicrobial Management Program (AMP) is an institutional strategy aimed at optimizing antimicrobial use in healthcare services, ensuring therapeutic efficacy, reducing adverse events associated with inappropriate use, preventing the selection of resistant microorganisms, and lowering unnecessary healthcare costs. In an infectious diseases hospital, patients often require intensive and prolonged antimicrobial use, making this setting particularly vulnerable to resistant bacteria and high expenditures on costly therapies. This study aimed to analyze the economic impact of the AMP on antimicrobial treatment costs in an infectious diseases hospital.

Methods: This is a descriptive and retrospective study based on AMP monitoring data collected in 2024 in a tertiary hospital specializing in infectious diseases. Information was obtained from program performance indicators, including planned versus actual antimicrobial expenditure and adherence to clinical stewardship interventions. The study was approved under protocol number 7.423.682 and CAAE 85396524.8.0000.5044.

Results: In 2024, projected antimicrobial expenditures were estimated at R$590,626.48. Through AMP intervention strategies, actual spending totaled R$298,503.35, resulting in direct savings of R$292,123.13 and an optimization rate of 50.54%. These results were achieved through interdisciplinary clinical audits, early treatment reassessments, and promotion of responsible use of broad-spectrum antimicrobials. The program also had a positive clinical impact, with infection cure rates of up to 27% in some months and hospital mortality rates below 26% among monitored patients.

Conclusion: The AMP proved effective in reducing antimicrobial expenditures in an infectious diseases hospital without compromising clinical outcomes. The savings of over R$290,000 in a single year demonstrate the strategy's economic potential, particularly in high-complexity settings. Strengthening such initiatives is essential for the sustainability of healthcare systems and the fight against antimicrobial resistance.

Keywords: Stewardship, Antimicrobials, Bacterial resistance.

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RELATIONSHIP BETWEEN KPC PRODUCTION AND SENSITIVITY PROFILE TO POLYMYXINS, AMINOGLYCOSIDES, AND CEFTAZIDIME-AVIBACTAM IN A PUBLIC TERTIARY HOSPITAL IN SÃO PAULO

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Bacterial resistance is a global problem with serious consequences: increased mortality, prolonged hospitalizations, higher surgical site infection rates, and elevated costs. Resistance monitoring allows epidemiological assessment, targeted antimicrobial therapy, and detection of new strains. Rapid immunoassay-based multiplex tests are available for phenotypic detection and differentiation of five carbapenemase families (KPC, OXA-48-like, VIM, IMP, and NDM) directly from bacterial colonies. The NG-Test Carba 5® is a rapid (≤ 15 min) *in vitro* multiplex immunoassay for the phenotypic detection and differentiation of these common carbapenemase families produced by Enterobacterales and *Pseudomonas*. Tests were performed between August 2024 and March 2025. Sixty carbapenem-resistant strains (49 Enterobacterales and 11 *Pseudomonas aeruginosa*) identified by Vitek MS Prime® (BioMérieux) were tested using NG-Test Carba 5® to identify the resistance mechanism. Among Enterobacterales, 42 (70%) were KPC-producing, including 40 (95.24%) *Klebsiella pneumoniae*: 14 (35%) were sensitive to polymyxins, 27 (67%) to amikacin, 10 (25%) to gentamicin, and 21 (52.2%) to ceftazidime-avibactam. Two (4.76%) *Escherichia coli* isolates were both sensitive to polymyxin and gentamicin, one sensitive to amikacin, and the single isolate tested for ceftazidime-avibactam was sensitive. Beta-lactamases of the KPC, IMP, VIM, NDM, and OXA-48 types are the main enzymes produced by Enterobacterales that confer carbapenem resistance. A 2022 study showed that 77% of *K. pneumoniae* isolates were carbapenem-resistant due to KPC production, with polymyxin resistance at 29.5% and amikacin resistance at 19.6%. Strains resistant to these antimicrobials often have mutations in enzyme-coding alleles, mainly due to clinical antimicrobial