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Letter to Editor

Enhancing Diagnostic Accuracy in PICUs: A Comprehensive Approach to Antibiotic Stewardship

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Dear Editor,

I am writing this article on "Diagnostic Stewardship in Paediatric Intensive Care Units," a subject of increasing importance in pediatric healthcare. Managing the use of antibiotics and enhancing patient outcomes in these specialized settings are vital functions of diagnostic stewardship, which I aim to address in this letter.Recent literature underscores the impact and importance of this topic. For example, Woods-Hill et al. (2022), in their seminal paper published in JAMA Paediatrics, explored the association of diagnostic stewardship with blood culture rates, antibiotic use, and patient outcomes in critically ill children.[1] Their research, a part of the Bright STAR Collaborative, highlights the delicate balance that clinicians in PICUs must maintain between prompt, aggressive treatment and the overuse of antibiotics, which can lead to resistance and other complications.[1] This study focused on improving blood culture practices. It introduced guidelines to reduce unnecessary cultures, emphasizing clinical judgment and patient-specific factors. Educational sessions and feedback mechanisms supported adherence. Outcomes showed a significant decrease in blood culture rates, correlating with reduced antibiotic usage, demonstrating the effectiveness of targeted diagnostic interventions in antibiotic stewardship without negatively impacting patient outcomes.[1]

In addition, the American Academy of Paediatrics published a significant study on the stewardship of endotracheal aspirate cultures (EACs) in PICUs.[2] This study showed that implementing a clinical decision support tool might decrease the use of EAC and related expenses. Crucially, this decrease had no adverse effects on important patient outcomes, including length of stay, readmission rates, or mortality, demonstrating the effectiveness of diagnostic stewardship in upholding high standards of patient care.[2] This study introduced a clinical decision support tool for endotracheal aspirate cultures (EACs) in PICUs.[2] It offered criteria-based guidance to minimize EACs' indiscriminate use. The tool's implementation significantly reduced EAC usage, positively impacting patient outcomes like mortality, length of stay, and readmission rates. Notably, it also resulted in considerable cost savings, underscoring the financial advantages of diagnostic stewardship. Furthermore, the comprehensive review by Fatemi and Bergl in Critical Care Clinics (2022) provides an overarching perspective on diagnostic stewardship.[3] By presenting it as a crucial component of the complete

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diagnosis-to-treatment paradigm in intensive care settings, it expands the idea beyond simple antibiotic control. This review highlights the significance of adequate and timely diagnostic testing, which is directly related to decisions about patient management and is a crucial component of the stewardship paradigm.[3] It also emphasized a comprehensive approach to diagnostic stewardship, advocating for timely, appropriate diagnostic testing integrated with patient management. It recommended a multidisciplinary collaboration among clinicians, microbiologists, and pharmacists for patient-specific testing. Although specific outcomes weren't reported, it highlighted the potential benefits of this holistic approach in improving patient outcomes and efficient resource use.[3]

In India, adapting guidelines from the Bright STAR Collaborative and the American Academy of Pediatrics, focusing on tailored criteria for blood cultures and EACs, is crucial. Key steps include implementing educational programs on diagnostic stewardship, developing clinical decision support tools integrating local data, and establishing monitoring and feedback mechanisms. These efforts, such as resource optimization and public awareness about antibiotic resistance, can enhance healthcare outcomes and support stewardship initiatives.Implementing diagnostic stewardship interventions in Indian PICUs requires a multifaceted approach involving guideline adaptation, education, resource optimization, and continuous monitoring. Our letter intends to integrate these pivotal studies into an insightful narrative that underscores diagnostic stewardship in PICUs as a critical concern, transcending clinical boundaries to address broader public health implications.

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AUTHORS' CONTRIBUTIONS

SN: Analysis, Methodology, Writing the draft

LJ: Conceptualization, Analysis, Methodology, Supervision, Writing the draft

AI DECLARATION

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