# Bridging clinical gaps: 2025 expert consensus targets extended-spectrum β-lactamase resistance

FAYETTEVILLE, GA, UNITED STATES, December 10, 2025 /EINPresswire.com/ -- Extended-spectrum β-lactamase-producing Enterobacterales (ESBL-E) have become a critical global public health challenge due to their high resistance to β-lactam antibiotics and association with severe clinical infections.

Enterobacterales are among the most common bacterial pathogens causing hospital-acquired infections worldwide. The misuse and overuse of β-lactam antibiotics have accelerated the emergence of extended-spectrum β-lactamase-producing (ESBL) strains, particularly Escherichia coli and Klebsiella pneumoniae. These bacteria exhibit multidrug resistance and can spread rapidly across hospital and community settings through plasmid-mediated mechanisms. Surveillance data from China indicate a persistently high prevalence of ESBL-E, posing significant treatment challenges, especially in pediatric and immunocompromised populations. Given the uneven laboratory capacities and regional differences in antimicrobial stewardship, standardized diagnostic and therapeutic frameworks are urgently needed. Due to these challenges, comprehensive research and expert guidance are required to improve prevention and treatment of ESBL-E infections.

Beijing, September 2025 — Researchers from the First Affiliated Hospital of Guangzhou Medical University, Peking Union Medical College Hospital, and Zhejiang Provincial People's Hospital have released new national guidance addressing infections caused byESBL-E. Published (DOI: 10.12290/xhyxzz.2025-0494) in the Medical Journal of Peking Union Medical College Hospital, the document synthesizes the latest data on epidemiology, diagnosis, and therapeutic principles of ESBL-E infections. Supported by the National Science and Technology Major Project for Noncommunicable Chronic Diseases, it provides comprehensive recommendations to enhance clinical management and antibiotic stewardship across China.

The 2025 consensus updates the 2014 version with revisedepidemiological data, clinical laboratory testing methods, and therapeutic principles for ESBL-E infections. It recommends diagnostic methods combining phenotypic and genotypic assays for accurate identification. The guidelines emphasize individualized, evidence-based antimicrobial therapy based on infection severity, pathogen characteristics, and pharmacokinetic–pharmacodynamic principles. For severe or bloodstream infections, carbapenems such as meropenem remain the preferred treatment, whereas β-lactam/β-lactamase inhibitor combinations and cephamycins are suitable

for mild to moderate cases. Novel β-lactamase inhibitor combinations (e.g., imipenem/relebactam and meropenem/vaborbactam) are reserved for complex or multidrug-resistant cases. The consensus further specifies strategies for pediatric, emergency, and neutropenic patients, integrating recommendations on dosage optimization, infection source control, and antibiotic de-escalation. By providing ten graded recommendations with clearly defined evidence levels, the document aims to guide clinicians in balancing efficacy, safety, and antimicrobial resistance control.

“The rapid evolution of extended-spectrum β-lactamase-producing Enterobacterales is challenging existing treatment paradigms,” stated Professor Zhuo Chao, lead author of the consensus. “Our goal was to build a unified, evidence-based framework that empowers physicians to make informed, stratified decisions based on infection site, severity, and patient condition. By combining national surveillance data and clinical evidence, we hope this consensus will enhance diagnostic precision, improve therapeutic outcomes, and mitigate the spread of multidrug resistance in healthcare settings.”

The expert consensus offers a practical roadmap for Chinese clinicians to combat ESBL-E infections more effectively. It bridges the gaps between microbiological detection, rational antibiotic use, and patient-centered care, aligning with the national antimicrobial resistance action plan. Its implementation is expected to improve hospital infection control, promote antibiotic stewardship, and serve as a reference for other developing countries facing similar challenges. In the long term, the framework lays the foundation for integrating molecular diagnostics, real-time resistance surveillance, and precision medicine approaches into infectious disease management.

References

DOI
10.12290/xhyxzz.2025-0494

Original Source URL
https://xhyxzz.pumch.cn/article/doi/10.12290/xhyxzz.2025-0494

Funding Information
National Science and Technology Major Project for Noncommunicable Chronic Diseases (2024ZD0532800).

Lucy Wang
BioDesign Research
email us here

we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.