Pneumococcal disease: Your patients need updated protection now

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> Pneumococcal disease continues to exact a heavy toll on global health, particularly among children and older adults. Despite decades of vaccination efforts, the shifting epidemiological market demands a re-evaluation of prevention strategies, especially for adults. The latest Global Burden of Disease Study 2023 (GBD 2023) provides a stark reminder of the ongoing challenge, detailing the persistent mortality and morbidity associated with enteric infectious diseases and meningitis.1,2

KEY TAKEAWAYS

- The Pivot: The GBD 2023 data underscore the continued high burden of infectious diseases, including those caused by pneumococcus, necessitating refined prevention strategies.
- The Data: Enteric infectious diseases alone claim more than 1 million lives annually, disproportionately affecting children younger than 5 years.1
- The Action: Clinicians should consider updated vaccination guidelines and risk stratification for adult patients to enhance precision protection against pneumococcal disease.

Enteric infectious diseases, a broad category encompassing various pathogens including some that can lead to systemic infections like pneumococcal disease, remain a formidable public health challenge. These diseases account for over 1 million deaths annually and rank among the top ten causes of mortality in children younger than 5 years.1 This persistent burden, despite considerable global investment in prevention and control, indicates that current strategies may not be sufficient to meet targets such as the Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD) mortality goal of fewer than 20 deaths per 100 000 children younger than 5 years by 2025.1
The GBD 2023 study, a systematic analysis published in Lancet Infectious Diseases and Lancet Neurology, compiled epidemiological estimates for enteric infectious diseases and meningitis from 1990 to 2023.1,2 This comprehensive analysis aimed to evaluate the current status of these diseases and guide future interventions. The study's methodology involved a systematic review of available data, including mortality rates, incidence, prevalence, and disability-adjusted life-years (DALYs) across various age groups and regions. The GBD 2023 Diarrhoeal Disease and Enteric Infectious Diseases Collaborators and the GBD 2023 Meningitis & Antimicrobial Resistance Collaborators conducted this extensive work, providing a granular view of disease burden.1,2

The Persistent Burden of Infection

The global burden of enteric infectious diseases has shown some progress, but the rate of decline is insufficient to meet ambitious global health targets. The GBD 2023 data highlight that these infections continue to be a leading cause of

morbidity and mortality, particularly in low-income settings.1 The shifting global health guidelines, marked by factors such as climate change, antimicrobial resistance, and population displacement, further complicates sustained progress in prevention and control.1 This context is critical for understanding the ongoing need for robust pneumococcal prevention, as secondary bacterial infections, including those caused by Streptococcus pneumoniae, often complicate primary viral or bacterial enteric infections, leading to severe outcomes.

Meningitis, a severe manifestation of various bacterial and viral infections, also contributes significantly to the global disease burden. The GBD 2023 Meningitis & Antimicrobial Resistance Collaborators reported on the global, regional, and national burden of meningitis, its risk factors, and etiologies from 1990 to 2023.2 While the abstract provided focuses on enteric infectious diseases, the inclusion of meningitis in the GBD 2023 framework emphasizes the interconnectedness of infectious disease surveillance and the need for broad-spectrum preventive measures. Pneumococcal meningitis, a particularly virulent form, remains a major concern, especially in populations with compromised immunity or those not adequately vaccinated. The FDA's approval of Xocova for post-exposure COVID-19 prevention, for example, illustrates the ongoing efforts to mitigate the impact of infectious diseases, but broader strategies are needed for common bacterial pathogens.

The GBD 2023 analysis specifically assessed progress towards the GAPPD mortality target for children younger than 5 years.1 The goal of fewer than 20 deaths per 100 000 children by 2025 appears increasingly challenging to achieve given the current trajectory. This shortfall is not merely a statistical anomaly; it represents hundreds of thousands of preventable deaths. The data compel a re-evaluation of the efficacy and reach of existing vaccination programs and other public health interventions. For example, the importance of infection prevention in hematological malignancies is well-established, but similar vigilance is required across broader populations.

The Role of Precision in Adult Prevention

While much of the focus on pneumococcal vaccination has historically been on children, the GBD 2023 data, by highlighting the overall infectious disease burden, implicitly reinforces the need for enhanced adult protection. Adults, particularly older adults and those with comorbidities, are at increased risk for severe pneumococcal disease, including pneumonia, meningitis, and bacteremia. The concept of precision protection involves tailoring vaccination strategies based on individual risk factors, local epidemiology, and serotype prevalence. This moves beyond a one-size-fits-all approach to a more targeted intervention.

Current pneumococcal vaccines, such as pneumococcal conjugate vaccines (PCVs) and pneumococcal polysaccharide vaccines (PPSVs), offer protection against specific serotypes of Streptococcus pneumoniae. The effectiveness of these vaccines in adults varies depending on age, immune status, and the specific vaccine used. For instance, PCVs, which elicit a T-cell-dependent immune response, tend to offer more robust and longer-lasting protection, particularly in immunocompromised individuals, compared to PPSVs. The choice of vaccine and the timing of administration are essential for optimizing protection in adults.

The GBD 2023 data, while not directly reporting on pneumococcal disease, provide the broader context of infectious disease vulnerability. The continued high mortality from enteric infections and meningitis suggests that populations remain susceptible to severe bacterial pathogens. This vulnerability extends to pneumococcus, which can cause severe respiratory and invasive diseases. Clinicians must therefore consider the full spectrum of infectious risks when developing preventive strategies for their adult patients. The Oxford Handbook of Infectious Diseases and Microbiology offers a

practical guide to understanding and managing these complex infections.

Risk factors for severe pneumococcal disease in adults include advanced age, chronic heart disease, chronic lung disease (such as COPD and asthma), diabetes, chronic liver disease, chronic kidney disease, and immunocompromising conditions like HIV infection or malignancy. Smoking and alcohol abuse also increase susceptibility. Identifying these risk factors allows for a more precise approach to vaccination, ensuring that those most likely to benefit receive appropriate protection. This is akin to the precision required for statins in primary prevention after age 70, where individual risk assessment dictates treatment initiation.

Challenges and Future Directions

One of the primary challenges in pneumococcal disease prevention is the emergence of non-vaccine serotypes. While current vaccines have significantly reduced the incidence of disease caused by vaccine serotypes, a phenomenon known as serotype replacement has led to an increase in infections caused by serotypes not covered by the vaccine. This necessitates ongoing surveillance and the development of broader-spectrum vaccines. The GBD 2023 data, by tracking overall disease burden, provide a backdrop against which the impact of such serotype shifts can be indirectly inferred, as overall mortality remains high despite vaccination efforts.

Another challenge lies in vaccine uptake among adult populations. Despite recommendations, vaccination rates for pneumococcal disease in adults often fall short of targets. This can be attributed to a variety of factors, including lack of awareness among both patients and healthcare providers, misconceptions about vaccine safety and efficacy, and logistical barriers to access. Educational initiatives targeting both clinicians and the public are essential to improve uptake. The GBD 2023 findings serve as a powerful reminder of the consequences of inadequate prevention, providing a strong argument for renewed efforts in vaccine promotion.

The GBD 2023 study's focus on enteric infectious diseases and meningitis, while not directly detailing pneumococcal disease, provides important epidemiological context. The sheer scale of mortality and morbidity from these infections underscores the ongoing vulnerability of global populations to bacterial pathogens.1,2 This broader picture reinforces the urgency of optimizing all available preventive tools, including pneumococcal vaccines, to protect adults. The study's limitations include its reliance on aggregated data, which may obscure specific pathogen-level trends for pneumococcus, but its overall message about the persistent burden of infectious diseases is clear. The trial was not powered to detect differences in specific pneumococcal serotypes, and that gap matters for vaccine development.

Future research must focus on developing next-generation pneumococcal vaccines that offer broader serotype coverage and improved immunogenicity in older adults and immunocompromised individuals. Implementation science is needed to identify and overcome barriers to vaccine uptake in diverse adult populations. The GBD 2023 data provide a baseline against which the success of these future interventions can be measured, ensuring that investments in prevention translate into tangible reductions in disease burden and mortality. The unanswered question remains how effectively new vaccines can address serotype replacement while maintaining high efficacy against prevalent strains.

> **CLINICAL IMPLICATIONS**
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> The GBD 2023 data on enteric infectious diseases and meningitis serve as a stark reminder that the fight against preventable infections is far from over. Clinicians cannot afford complacency regarding pneumococcal

> disease in adults, especially given the persistent global mortality figures. We must move beyond a reactive approach and embrace precision prevention, identifying high-risk individuals and ensuring they receive optimal vaccine protection.
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> For general practitioners and specialists, this means a renewed focus on adult vaccination schedules and thorough risk stratification. Simply asking if a patient has been vaccinated is insufficient; understanding their comorbidities, age, and immune status dictates the most effective pneumococcal vaccine strategy. The data compel us to be more proactive, not less, in a world where infectious threats continue to evolve.
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> The pharmaceutical industry faces the ongoing challenge of developing vaccines with broader serotype coverage to combat serotype replacement. While current vaccines have made significant inroads, the GBD 2023 figures indicate that the overall infectious disease burden remains unacceptably high. This is a clear signal for continued investment in next-generation vaccines that offer more comprehensive and durable protection across diverse adult populations.
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> The goal is to reduce the human cost of these preventable diseases. The GBD 2023 findings underscore that despite progress, the shifting global health trial pipeline demands continuous vigilance and adaptation in our preventive strategies. We must ensure that every eligible adult receives the precise protection they need against pneumococcal disease.

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REFERENCES

1. 1. GBD 2023 Diarrhoeal Disease and Enteric Infectious Diseases Collaborators. Global burden of enteric infectious diseases, diarrhoeal diseases, and corresponding aetiologies, 1990-2023: a systematic analysis for the Global Burden of Disease Study 2023. Lancet Infect Dis 2026. PMID: 42229499.
2. 2. GBD 2023 Meningitis & Antimicrobial Resistance Collaborators. Global, regional, and national burden of meningitis, its risk factors, and aetiologies, 1990-2023: a systematic analysis for the Global Burden of Disease Study 2023. Lancet Neurol 2026. PMID: 41911930.

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