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PCV impact and the paediatric meningitis surveillance in West Africa

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Background

Bacterial meningitis is a major cause of morbidity and mortality in sub-Saharan Africa. We analyzed data from the World Health Organization's (WHO) Invasive Bacterial Vaccine-preventable Diseases Surveillance Network (2011–2016) to describe the epidemiology of laboratory-confirmed *Streptococcus pneumoniae* (Spn), *Neisseria meningitidis*, and *Haemophilus influenzae* meningitis within the WHO African Region. We also evaluated declines in vaccine-type pneumococcal meningitis following pneumococcal conjugate vaccine (PCV) introduction.

Methods

Reports of meningitis in children <5 years old from sentinel surveillance hospitals in 26 countries were classified as suspected, probable, or confirmed. Confirmed meningitis cases were analyzed by age group and subregion (South-East and West-Central). We described case fatality ratios (CFRs), pathogen distribution, and annual changes in serotype and serogroup, including changes in vaccine-type Spn meningitis following PCV introduction.

Results

Among 49 844 reported meningitis cases, 1670 (3.3%) were laboratory-confirmed. Spn (1007/1670 [60.3%]) was the most commonly detected pathogen; vaccine-type Spn meningitis cases declined over time. CFR was the highest for Spn meningitis: 12.9% (46/357) in the South-East subregion and 30.9% (89/288) in the West-Central subregion. Meningitis caused by *N. meningitidis* was more common in West-Central than South-East Africa (321/954 [33.6%] vs 110/716 [15.4%]; $P < .0001$). *Haemophilus influenzae* (232/1670 [13.9%]) was the least prevalent organism.

Conclusions

Spn was the most common cause of pediatric bacterial meningitis in the African region even after reported cases declined following PCV introduction. Sustaining robust surveillance is essential to monitor changes in pathogen distribution and to inform and guide vaccination policies.