Pneumonia Mortality in Children Under Five in Rural Gambia, 13 Years After the Introduction of Pneumococcal Conjugate Vaccine: A Verbal Autopsy Study

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Pneumonia Mortality in Children Under Five in Rural Gambia, 13 Years After the Introduction of Pneumococcal Conjugate Vaccine: A Verbal Autopsy Study

Notwithstanding the high coverage and impact of the introduction of the pneumococcal conjugate vaccine (PCV) in reducing childhood pneumonia, pneumonia remains a leading cause of childhood mortality. It is difficult to determine the burden of pneumonia mortality in low-resource settings because many deaths outside health facilities are undetected. Verbal autopsy (VA) is a tool to evaluate causes of death in communities with limited access to care. We used WHO standard questionnaires to conduct verbal autopsies for all deaths in children aged <5 years in the Basse and Fuladu West Health and Demographic Surveillance Systems in rural Gambia between 2018 and 2021. Two physicians assigned primary causes of death for each VA (ICD-10 codes) and discordant diagnoses were resolved by consensus. VAs were conducted for 557 of 566 (98.4%) deaths. Pneumonia was the primary cause of death in 16.9% (n=94). The second-most common cause of death was diarrhoea in 14.5% (n=81). Of the pneumonia deaths, 51.1% (n=48) occurred at home, 45.7% (n=43) in children aged 1-11 months, 3.2% (n=3) in neonates, and 57.5% (n=54) in females. Prior to death, 93.5% (n=87) of children with pneumonia received some treatment, and of those, 63.2% (n=55) did not seek care outside the home. Whereas 27.1% (13/48) who attended a health facility died at home. Among deaths at home, pneumonia was 2.0-times (95%CI 1.1-3.5) more frequent than among deaths in hospital (48/270 vs 26/162).

After 13 years of the use of PCV in the Gambia, pneumonia was identified as the most common cause of childhood death in rural Gambia according to verbal autopsy analysis. Over half of the pneumonia deaths occurred at home, and over half did not seek care outside the home. Higher valency PCV and increased health care seeking may reduce childhood pneumonia deaths in rural Gambia.