

SC-05

Epidemiology of invasive meningococcal disease in pediatric and adult populations in Sicily: a preliminary analysis within the Digivax project to inform vaccination strategies

N. Bonaccorso(1|2), W. Mazzucco(3-4), F. Vitale (3|4), M.I. Dilena(2), G. Graziano(3|4), C. Maida(3|4), F. Tramuto(3|4), C.Costantino(3|4)

1. PhD National Programme in One Health Approaches to Infectious Diseases and Life Science Research, Department of Public Health, Experimental and Forensic Medicine, University of Pavia, 27100 Pavia, Italy; 2. Medical Direction Unit "Villa Sofia – Cervello" Hospital - AOOR Villa Sofia – Cervello, Palermo, Italy; 3. Clinical Epidemiology with Cancer Registry Unit, University Hospital of Palermo, Palermo, Italy; 4. Department of Health Promotion, Maternal and Infant Care, Internal Medicine and Excellence Specialties "G. D'Alessandro", University of Palermo, Palermo, Italy;

Background. Invasive meningococcal disease (IMD), caused by Neisseria meningitidis, remains a major cause of morbidity and mortality, with epidemiology strongly influenced by age distribution and vaccination strategies. The integration of epidemiological data with vaccination records is essential for the surveillance of vaccine-preventable diseases and for informing public health interventions.
This study is part of the DARE (DigitAl lifelong pRevEntion) initiative and the Digivax project, both aimed at strengthening immunization strategies and surveillance of vaccine-preventable diseases through the integration of health information systems. The aim of this study was to describe the recent epidemiology of IMD in Sicily, focusing on age distribution, serogroup distribution, and vaccination status.

Material And Methods. A preliminary retrospective analysis of IMD cases reported in Sicily between 2023 and 2026 was conducted. Epidemiological and microbiological data were linked to vaccination records through the Regional Immunization Registry (AVUR). Cases were stratified by age group (0–9 years; ≥10 years), serogroup, and vaccination status (unvaccinated; partially or fully vaccinated).

Results. A total of 16 IMD cases were identified during the study period, with a higher occurrence in pediatric than in adult populations. Serogroup B was predominant (14/16; 87.5%), followed by serogroups Y (1/16; 6.25%) and C (1/16; 6.25%). Overall, 13/16 cases (81.3%) occurred in unvaccinated individuals. The remaining 3 cases (18.7%) were reported in vaccinated subjects: one had received the MenC vaccine, and two had received the MenB vaccine with an incomplete schedule. No cases were observed among individuals fully vaccinated against MenB.

Conclusions. IMD continues to affect both pediatric and adult populations in Sicily, with a clear predominance of serogroup B. The integration of multiple data sources represents a valuable tool for strengthening epidemiological surveillance and supporting evidence-based regional vaccination strategies. Note: The project is part of the Italian Complementary National Plan PNC-I.1 "Research initiatives for innovative technologies and pathways in the health and welfare sector" D.D. 931 of 06/06/2022, "DARE - DigitAl lifelong pRevEn-tion" initiative, code PNC0000002, CUP: B53C22006460001.