

SC-16

Standardization of vaccination pathways for frail patients in Sicily: development of integrated operational tools

A. Guarcello 1, C. Costantino1,2, W. Mazzucco1,2, G. Graziano1,2, A. Pieri 2, S. D'Amico2, A. Casuccio1, F. Vitale1,2

1 Department of Health Promotion, Maternal and Child Care, Internal Medicine and Medical Specialties of Excellence "G. D'Alessandro", University of Palermo; 2 Vaccination Unit, UOC Clinical Epidemiology and Palermo Cancer Registry, University Hospital "Paolo Giaccone" of Palermo

Background. Vaccination remains a cornerstone of primary prevention, yielding substantial reductions in morbidity, sequelae, and mortality, particularly among vulnerable populations. Patients affected by chronic conditions, immunocompromising disorders, or neoplastic diseases are disproportionately susceptible to vaccine-preventable infections and their severe complications, underscoring the critical role of immunization strategies in this cohort. Nevertheless, the delivery of vaccination in such patients is fraught with challenges, chiefly attributable to the paucity of harmonized guidelines and the fragmentation of existing recommendations, which collectively engender significant heterogeneity in clinical practice. The present study was undertaken to systematically consolidate prevailing vaccination recommendations from both national and international sources, with the aim of devising pragmatic, user-oriented instruments to support vaccination delivery within the Sicilian healthcare framework.

Materials And Methods. A multidisciplinary panel, comprising senior medical officers, academic researchers, and postgraduate trainees in Hygiene and Preventive Medicine from the University of Palermo, conducted an exhaustive review of major reference sources, including the Red Book1, the Italian National Vaccine Prevention Plan 2023–20252, the "Calendario per la Vita," and the regional immunization schedules of Sicily3 and Veneto. Specific recommendations were extrapolated for distinct pathological entities, socio-behavioral risk groups (e.g., men who have sex with men [MSM], incarcerated populations, sex workers), and patients receiving immunosuppressive or immunomodulatory therapies. The extracted data were systematically collated and synthesized into: (i) a comprehensive database cross-referencing recommended vaccines by underlying pathology or condition; and (ii) condensed decision-support algorithms for the principal fragility profiles, encompassing states of immunosuppression and hematopoietic stem cell transplantation. The resultant frameworks were prospectively pilot-tested in the fragile patient population attending the Vaccination Outpatient Clinic of the University Hospital "Paolo Giaccone" in Palermo.

Results. The systematic review and synthesis yielded two primary operational outputs: a set of illustrative flowcharts delineating vaccination indications by clinical scenario, and a modular, patient-facing personalized vaccination schedule, concurrently designed for physician reference and patient education. Implementation of these instruments substantially streamlined vaccination pathway planning, enhanced the quality of provider-patient communication, expedited clinical decision-making, and facilitated more comprehensive patient assessment. Moreover, their adoption promoted greater consistency in immunization protocols across different clinical sites and practitioners, effectively attenuating unwarranted prescriptive variability. The personalized schedule, by affording a clear temporal visualization of the immunization trajectory, was instrumental in bolstering patient adherence and health literacy, demonstrating feasibility even within the constraints of complex, multidisciplinary care settings.

Conclusions. In the absence of widely endorsed, evidence-based consensus guidelines, the proposed framework offers a pragmatic, scalable, and readily transferable operational model for optimizing vaccination management in fragile patients across the Sicilian Region. The systematic standardization of immunization schedules and the introduction of structured clinical decision-support tools hold the potential to enhance the appropriateness of vaccine delivery, mitigate unwarranted practice variations, and augment the overall efficiency of the patient care pathway. Furthermore, drawing on real-world experience from one of the three Sicilian centers accredited with the three-seal certification by the Ospivax National Network, this model is poised for broader regional and national dissemination.

References. American Academy of Pediatrics, Committee on Infectious Diseases. Red Book: 2024–2027 report of the Committee on Infectious Diseases. 33rd ed. Itasca (IL): American Academy of Pediatrics; 2024. Sicilian Regional Health Department. New Regional Immunization Schedule: update and integration of the lifelong regional vaccination schedule adopted by Regional Decree No. 1965 of October 10, 2017, in accordance with the National Immunization Prevention Plan 2023–2025. Palermo: Sicilian Regional Health Department; 2024. Italian Ministry of Health. National Immunization Prevention Plan (PNPV) 2023–2025. Rome: Ministry of Health; 2023. Available from: https://www.salute.gov.it