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Catch-up vaccination intervention and study of infant vaccine hesitancy in health district in Palermo (Italy)

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Background. Despite the introduction in 2017 of mandatory vaccination for the hexavalent and the measles-mumps-rubella-varicella vaccines, childhood vaccination coverage in Sicily (Italy) remains below the recommended and safety threshold of 95%. A catch-up vaccination intervention was implemented for the pediatric population of the 2022-2023 birth cohorts residing in a health district of Palermo (Bagheria) where in 2024, 24-month coverage for polio and measles was 77.29% and 77.62%, respectively.

Materials And Methods. A cross-sectional study with a before-after component was conducted between June 2025 and December 2025, with the aim of evaluating the increase in vaccination coverage. A questionnaire was administered to the parents of non-compliant children to investigate the determinants of infant vaccine hesitancy.

Results. Collaboration with primary care pediatricians and the organization of active call sessions and extra vaccination sessions resulted in an increase in vaccination coverage of approximately 10-12 percentage points in both birth cohorts. The investigation of the determinants of vaccination adherence showed some significant associations: "perception of infectious disease risk" (OR: 7.91; $p = 0.009$) and "expectations of a positive outcome from vaccination" (OR: 8.62; $p = 0.003$). Vaccine information sources such as the internet and media were associated with refusal of catch-up vaccination (OR: 0.47, $p < 0.001$; and OR: 0.13, $p = 0.026$, respectively).

Conclusions. Despite methodological limitations, such as the self-reported nature of the survey data, the study demonstrated the usefulness of local strategies aimed at vaccination catch-up, representing a valuable example of local public health practice and effectively contributing to improved vaccination coverage in the pediatric population.