

Background and Objective: In Europe there is still a suboptimal Tdap (Tetanus, diphtheria, acellular pertussis) booster coverage, which might explain the increased incidence of Pertussis and, specifically in Italy, the relatively large proportion of Tetanus cases diagnosed. The aim of this study was to assess coverage status, knowledge, and attitudes on Tdap vaccination in health workers (HCWs) at the University Hospital "Federico II" in Naples, South of Italy, in 2022, to improve current vaccination strategies.

Methods: A cross-sectional study was conducted using a validated anonymous questionnaire. Knowledge and attitude were measured as scores (1-30). Multivariable logistic and linear regression models were employed to identify correlates of Tdap booster and knowledge and attitude towards the vaccination, as appropriate. Models were controlled for age, sex, job, Department, and years of employment.

Results: 206 questionnaires were administered among HCWs, 143 (69.4%) were medical doctors. 71 (34.47%) HCWs received the Tdap booster. Those who had worked 5-9 years at the hospital had a 78% lower likelihood of being vaccinated with the Tdap booster (5-9 years - OR: 0.22, CI: 0.06 | 0.85) as compared with newly hired HCWs. No other variable was significant in the model. Medical doctors had a greater attitude towards vaccination than non-medical HCWs (Other - Coef. -2.15 on 30; CI: -4.14 | -0.15). Compared with HCWs in clinical departments, those in diagnostic-therapeutic and public health organizational departments considered vaccination less useful as prevention tool (diagnostic-therapeutic - Coef. -3.12 on 30, CI: -5.13 | -1.12; public health - Coef. -1.98 on 30, CI: -3.41 | -0.56).

Conclusion: The study findings support the need to implement public health strategies to improve information and awareness toward vaccinations, and specifically the highlight importance of Tdap booster every 10 years as prevention tool to protect high-risk populations.

Popul. Med. 2023;5(Supplement):A2017

DOI: 10.18332/popmed/163996

The public health challenge of addressing communities with sub-optimal uptake of routine childhood vaccinations in Israel

Chen Stein-Zamir¹

¹Jerusalem district health office, 86 Jaffa rd, Israel

Background and Objectives: Childhood vaccinations have considerably averted morbidity and mortality from Vaccine-Preventable Diseases (VPD) worldwide. Despite a high overall national vaccination coverage in Israel, there are communities with suboptimal coverage and recurrent VPD outbreaks (e.g. measles). These communities mainly reside in the Jerusalem district. We aimed to evaluate the vaccination coverage in the Jerusalem district compared to the national rates and describe the challenge of addressing these communities.

Methods: Childhood vaccinations are included in Israel's National Health Insurance Law. Community-based health clinics provide free vaccination to all children. Vaccinations are not mandatory. The vaccination coverage data for 2017-2022 were retrieved from the National Immunization Registry. The vaccines evaluated were Diphtheria, Tetanus, acellular Pertussis, polio, Haemophilus influenzae b (DTaP-IPV-Hib4: dose 4) and Measles-Mumps-Rubella/Measles-Mumps-Rubella-Varicella (MMR /MMRV1), both scheduled at age 12 months. The national population is 9.3 million, children (0-17 years) consist a third of the population. The national birth cohort is 185,000 with 35,000 in the Jerusalem district.

Results: The overall national vaccination coverage rates (%) were adequate and lower in the Jerusalem district. The mean vaccination coverage rates for DTaP-IPV-Hib4 and MMR /MMRV1 were 95.1±2.1 and 97.5±1.6 in the country overall, compared to 88.4±4.8 and 96.3±2.6 in the Jerusalem district, respectively. A trend of decline was observed during the COVID-19 pandemic years (2020-2022), nationally and prominently in Jerusalem. The decline was more noticeable in the DTaP-IPV-Hib4 (90.7% nationally and 78.8% in Jerusalem in 2022) than in MMR /MMRV1 (94.2% nationally and 91.5% in Jerusalem in 2022). Vaccination campaigns and supplemental immunization activities are carried out constantly in the Jerusalem district hard-to-vaccinate communities

Conclusion: While aggregated vaccination coverage rates are nationally high, disaggregated data reveal gaps among population groups. Vaccinations gaps have been reported globally and deepened during the COVID-19 pandemic. Sustainable public health programs and community-based campaigns are essential.

Popul. Med. 2023;5(Supplement):A2018

DOI: 10.18332/popmed/163997

Systematic review and meta-analysis of the effectiveness of vaccine catch/mop/keep-up remind or recall interventions in comparison to standard vaccination offer

Walter Priano¹, Alessandra Fallucca², Patrizia Ferro¹, Alessandro Carubia¹, Vincenzo Pisciotta², Gaia Vitale², Alessandra Casuccio¹, Vincenzo Restivo¹

¹University of Palermo, Department of Health Promotion, Mother and Child Care, Internal Medicine, and Medical Specialties "G. D'Alessandro" (PROMISE), University of Palermo - 90133 Palermo, Italy, ²University of Palermo

Background and objective: Within the worldwide challenge of tackling vaccine hesitancy, the Strategic Advisory Group of Experts on Immunization (SAGE group) strongly fosters vaccination remind or recall interventions that, alongside new opportunities offered by scientific progress, represent key to successfully immunize target population classes. This systematic review with meta-analysis will provide an evaluation of the effectiveness of different remind or recall vaccination interventions in comparison to standard vaccination offer.

Methods: Two literature databases (PubMed/MEDLINE and Scopus) were consulted in February 2022, retrieving 1850 studies. PRISMA statement guidelines were adopted and 80 manuscripts (47 trial/RCTs, and 33 before-after studies) were included after the assessment phase. Meta-analysis with random-effects model was performed by using STATA software (ver.14.1.2). The selected outcome was the relative risk (RR) of vaccination coverage improvement effectiveness. Furthermore, meta-regression analyses and funnel plots were provided for the included manuscripts.

Results: The analyses displayed, for cumulatively considered interventions, an overall effectiveness of RR=1.22 (95% C.I.:1.18-1.25, p<0.001) for RCTs and RR=1.70 (95% C.I.:1.54-1.87, p<0.001) for before-after studies. Subgroup analyses allowed to identify "multicomponent" (RR=1.48, 95% C.I.:1.32-1.66, p<0.001) and "remind clinical" (RR=1.25, 95% C.I.:1.17-1.34, p<0.001) interventions as the most effective activities that increased vaccination coverage for RCTs. On the other hand, "education" (RR=2.13, 95% C.I.:1.60-2.83, p<0.001) and "multicomponent" (RR=1.61, 95% C.I.:1.43-1.82, p<0.001) interventions granted highest increase levels for before-after studies. As showed in meta-regression analyses, more effective interventions were carried out among adult-middle-aged population (RCTs: p=0.01, 95% C.I.:0.09-0.61, coeff.:0.51; before-after: p=0.01, 95% C.I.:0.70-1.84, coeff.:1.27).

Conclusion: Community, family, and healthcare-based multidimensional interventions, as well as education-based catch-up strategies, effectively improve vaccination coverage. Therefore, their systematic implementation could be utmost relevant to target under-vaccinated population classes, thus aligning with nationally scheduled coverage levels and, ultimately, trying to eliminate or eradicate vaccine-preventable diseases.

Popul. Med. 2023;5(Supplement):A2019

DOI: 10.18332/popmed/163999

Retrospective multicenter study on 'real life' experience on the use of two different hexavalent vaccines in 5 local health authorities of the sicilian region from 2016 to 2019

Livia Cimino¹, Francesco Blangiardi², Claudio Costantino¹, Nicole Bonaccorso¹, Arianna Conforto¹, Martina Sciortino¹, Girolama Bosco³, Calogero Collura³, Nicolò Casuccio⁴, Maria Randazzo⁴, Gaspare Canzoneri⁵, Giuseppe Palermo⁵, Vincenzo Di Gaetano⁵, Gino Taranto², Mario Cuccia⁶, Roberto Furnari⁶, Mario Palermo⁷, Francesco Vitale¹

¹Department of Health Promotion, Maternal and Infant Care, Internal Medicine and Excellence Specialist Medicine, University of Palermo, Palermo, Italy, ²Prevention and Epidemiology Unit of the Local Health Authorities of Ragusa, Ragusa, Italy, ³Prevention and Epidemiology Unit of the Local Health Authorities of Agrigento, Agrigento, Italy, ⁴Prevention and Epidemiology Unit of the Local Health Authorities of Palermo, Palermo, Italy, ⁵Prevention and Epidemiology Unit of the Local Health Authorities of Trapani, Trapani, Italy, ⁶Prevention and Epidemiology Unit of the Local Health Authorities of Catania, Catania, Italy, ⁷Department for Health Activities and Epidemiological Observatory of the Sicilian Region Italy

Background and Objective: Hexavalent vaccination (HV) is a priority for protecting infants against six potentially deadly infectious diseases. In Italy, Europe and recently in the U.S. there are three commercially authorised vaccines. HV is currently used in a primary immunisation regimen with three doses (3-5-11 months). A retrospective clinical study was conducted in Sicily, Italy's fourth-most populated region (10% of national population and 9% of all newborns), in order to evaluate real life data on HV during 2016-2019.

Methods: Data on the completion of the administration of HV, on interchangeability between the two vaccines that alternated between 2016 and 2019 (Infarix Hexa ®- Vaxelis ®), on use above the established age and on co-administration with Rotavirus and Pneumococcus vaccines were investigated in five Local Health Unit of the Sicilian Region. Scientific coordination was in charge to the Clinical Epidemiology Unit of the University Hospital (UH) of Palermo, through a questionnaire approved by the ethics committee of the same UH.

Results: Data collected from the LHUs of Agrigento, Catania, Palermo, Ragusa and Trapani, constituting 72.5% of the Sicilian population, showed an average of 91.5% completion of the HV cycle at 24 months of age. The average age of administration gradually increased in children who switched between the two vaccines compared to those who completed the vaccination cycle with the same product. Interchangeability with one or two doses of hexavalent was documented in 17.8% (2018) and 16% (2019) of infants. Co-administration was 93% with the 13-valent conjugate anti-pneumococcal vaccine and 70% with the anti-rotavirus vaccine.

Conclusions: This retrospective analysis could contribute to demonstrate safety and sustainability of the interchangeability between different types of the same HV, helping Public Health Authorities to manage potential disruptions due to missed routine immunization opportunities pandemic-related or change of vaccines due to National or Regional tender.

Popul. Med. 2023;5(Supplement):A2020
DOI: 10.18332/popmed/164051

COVID-19 vaccination effectiveness: one year of observation

Domitilla Marconi¹, Chiara Guidoni², Enrico Simoncini³, Bruno Sposato⁴, Antonio Perrella⁵, Cesira Nencioni⁶, Nicola Nante⁷, Gabriele Messina⁷, Andrea Serafini³

¹University of Siena Post Graduate School of Public Health, University of Siena, Siena, Italy, ²Local Health Authority Toscana Sud-Est, ³Local Health Authority Toscana Sud-Est Health Management, Misericordia Hospital, Local Health Authority Toscana Sud-Est, Grosseto, Italy, ⁴Local Health Authority Toscana Sud-Est Pneumology Unit, Misericordia Hospital, Local Health Authority Toscana Sud-Est, Grosseto, Italy, ⁵Local Health Authority Toscana Sud Est, ⁶Local Health Authority Toscana Sud-Est Infectious Diseases Unit, Misericordia Hospital, Local Health Authority Toscana Sud-Est, Grosseto, Italy, ⁷University of Siena Department of Molecular and Developmental Medicine, University of Siena, Siena, Italy

Background and Objective: In 2020, Italy was one of the most affected countries in the world, counting over 70.000 deaths for covid-19. The Italian ministry of health led the nationwide vaccination campaign. On 1st september 2021, 72% of the population received at least one dose. We aimed to assess the effectiveness of COVID-19 vaccines regarding infection, admission, days of hospitalization, access to the intensive care unit (icu) and death for one year of observation; to the best of our knowledge, there are no studies with such a long study period.

Methods: We conducted an observational retrospective study on all the residents older than 18 of grosseto province (tuscany, Italy) from 1st september 2021 to 31 august 2022. We included who had completed the primary vaccination cycle at the begging of the study and who had never received either one dose by the end of the period. Moreover, all the people who contracted COVID-19 infection before 1 september 2021 were excluded. First, we extracted data regarding vaccine Administrations and reportable COVID-19 tests for all the residents; Then, we linked data of the COVID-19 hospitalizations (the main reason for the admission). We performed logistic and multiple linear regressions adjusting for age, sex, and charlson-comorbidity-index with stata v17.

Results: We observed 213.895 residents and 44.236 COVID-19 cases, and 613 hospitalizations for COVID-19. Considering age, sex and charlson-comorbidity-index, the effectiveness of vaccination is high for all the outcomes: admission (adjor 0.22 95%ci 0.19-0.26), uci (adjor 0.49 95%ci 0.26-0.91), death (adjor 0.40 95%ci 0.25-0.65). Moreover, vaccination reduced days of hospitalization (coef. -3.11 95%ci -4.50 to -1.71). However, increasing age, male sex and comorbidities increased the risk of severe outcomes.

Conclusion: Our results confirm that vaccination prevents severe disease with hospitalization, admission to uci, and death and it is crucial especially for older male people with comorbidities.

Popul. Med. 2023;5(Supplement):A2021
DOI: 10.18332/popmed/164110

Exemption or hesitation? Analysis of COVID-19 vaccination exemption requests in a health district in marche region

Giulia Paolorossi¹, Federica Scaccia², Giorgia Mazzarini³, Daniel Fiacchini⁴, Patrizia Marcolini², Corinna Fotunato⁵, Davide Rinaldini⁵, Lidia Pascucci⁵, Daniela Cimini⁴, Andrea Poscia⁴

¹Università Politecnica delle Marche, Dipartimento Scienze Biomediche e Sanità Pubblica, Sezione di Igiene, Medicina Preventiva e Sanità Pubblica, Ancona, Italy, ²Public Health Department, Asur Marche AV2, Ancona, Italy, ³Dipartimento di Prevenzione U.O.C. ISP-Sorveglianza e Prevenzione delle Malattie Infettive e Cronico Degenerative - ASUR AV2, Jesi, Italy, Italy, ⁴Public Health Department, Asur Marche AV2, Ancona, Italy, ⁵Department

of Biomedical Sciences and Public Health, Section of Hygiene, Preventive Medicine and Public Health, Polytechnic University of the Marche Region, Ancona, Italy, Italy

Background: SARS-CoV-2 vaccination represented a breakthrough against the pandemic, but sub-optimal coverage in Italy led to the introduction of obligatoriness for several workplaces and citizens over50. Exemptions have ensured when vaccination is contraindicated. In doubtful cases, physicians could refer to experts' committees. Aim of this work is to analyse the appropriateness of these kinds of requests received in a Local Health District.

Methods: In September 2021, the regional group for SARS-CoV-2 vaccination exemptions was established and the procedure for requesting advice defined. From 1/10/2021 to 15/06/2022, 53 requests were submitted in the Health District of Jesi (approximately 100.000 inhabitants). They were independently assessed by 2 physicians expert in vaccination and classified using a structured grid describing query, presence of specialist certification, response time and outcome. Results: 34 requests (66%) were motivated by known allergies or diseases, 34% by previous adverse reactions to vaccinations. The average response time was 40,3 days. Only 5 (9%) requests received a certificate of temporary unsuitability and 1 (2%) unsuitability for mRNA vaccine. Among these, only 33% carried out the vaccination as appropriate. The remaining 89% of the requests did not justify any contraindication, but only 17% proceeded with the vaccination. 51% of the requests were accompanied by a specialist certificate. Of these, 89% appeared in contrast with the vaccination guidelines and has been assessed as having no contraindications, but in no case did vaccination follow

Conclusion: This work highlights an excessive use of the specialist committees assessment, which was not justified by the complexity of the case history, but rather by a defensive medicine approach (for specialist certificates misaligned with the guidelines or a lack of knowledge of the latter), with a consequent delay in vaccination suggesting the urgency of reconsider pathways for future mandatory vaccination.

Popul. Med. 2023;5(Supplement):A2022
DOI: 10.18332/popmed/164114

Observatory of immunization programs of Ibero-America: Year 2020

Analia Urueña¹, Maria Rombini¹, Romina Mauas¹, Amos García Rojas²
¹Universidad Isalud Argentina, ²Dirección General de Salud Pública de Canarias Spain

Background and Objective: Iberia (Spain and Portugal, IB) implemented the Expanded Program on Immunization (EPI) in 1974 and Latin America (LA) in 1979. Calendars and management evolved with differences, and the implementation and achievement of goals between countries show inequalities. We aimed to conduct an observatory of the EPIs in Ibero-América (IA) and build a Ranking based on their indicators.

Methods: Descriptive study of 20 countries (2 from IB, 18 from LA). We searched public sites of the Ministries of Health, WHO, PAHO and UNICEF and conducted interviews with referents. We analyzed calendars of 2020, vaccination coverage rates (VCRs) of 2019 (LA) and 2020 (IB), and management variables. We defined 6 domains: vaccination of the 1st year; from 2 years to school entry; adolescents, pregnant women, adults, and elderly; against influenza; special populations; and programmatic aspects. The 149 variables analyzed, and their categories added up a maximum of 400 points. Country score is expressed as a percentage of the maximum possible.

Results: Different schedules, vaccine combinations, VCRs and programmatic aspects were observed between countries and regions. Spain, Chile, and Portugal led the global ranking reaching a score of 286 (72%), 271 (68%) and 262 (66%), respectively. The rest of LA countries ranged from 209 (52%, Uruguay) to 96 (24%, Bolivia). The countries positioned down in the ranking showed lower VCRs, shorter scope calendars, information, and programmatic gaps. However, when domains were analyzed independently, the order of countries changed and the same pattern was not repeated, highlighting the strengths and weaknesses of each EPI.

Conclusions: This first observatory of the IA EPIs shows large disparities between regions and countries. The ranking aims to encourage EPI leaders and decision-makers to identify remaining challenges and opportunities to improve outcomes. The periodicity of the analysis will allow to compare EPIs evolution over time.

Popul. Med. 2023;5(Supplement):A2023
DOI: 10.18332/popmed/164127

Evaluating the impact of COVID-19 vaccination and vaccine timing on SARS-COV2 infection in healthcare workers in the real-world healthcare practice

Edlira Skrami¹, Marica Iommi¹, Andrea Faragalli¹, Rosaria Gesuita¹, Luigi