






Will vaccine hesitancy compromise our efforts to face the next SARS-CoV-2 epidemic wave?

Laura Sticchi ^{a,b}, Lucia Taramasso ^a, Antonio Di Biagio ^{a,c}, Dario Olobardi^b, Giancarlo Icardi ^{a,b}, and Matteo Bassetti ^{a,b}

^aDepartment of Health Sciences (Dissal), University of Genoa, Genoa, Italy; ^bHygiene Unit, IRCCS Policlinico San Martino Hospital, Genoa, Italy; ^cInfectious Diseases Unit, IRCCS Policlinico San Martino Hospital, Genoa, Italy

ABSTRACT

We have checked the vaccination history of 389 elderly patients (62.9% males, mean age of 78.5 + 8.4 years) hospitalized for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pneumonia. Information regarding pneumococcal vaccination was available for 354 patients (91.0%): the overall vaccination coverage rate (VCR) was 19.8% (70/354), 11.3% received only 13-valent pneumococcal conjugate vaccine (PCV13), 3.4% were immunized with 23-valent pneumococcal polysaccharide vaccine (PPSV23), 5.1% received both vaccines. VCR among the elderly population in Liguria Region was 26.2% (118,581/453,082), among them 13.7% received PCV13, 12.4% were immunized with at least one dose of PPSV23. Regarding the 2019–2020 influenza season vaccination data were available for 46 patients: 59% of them were immunized. VCR in the elderly population was 51.7% (234,153/453,082).

ARTICLE HISTORY

Received 30 August 2020
Accepted 22 September 2020

KEYWORDS

Hesitancy; influenza;
Streptococcus pneumoniae;
vaccine; Italy

Sir,

We read with great interest the commentary of Richmond et al. on the planning and implementation of influenza vaccination in the upcoming Northern Hemisphere influenza season during a pandemic.¹ In particular, authors emphasize the role of some policy changes (modifying target population, timing, and location of vaccination) in order to increase vaccine uptake, not only to reduce influenza-related deaths and hospitalizations but also to support the government as a pandemic preparedness measure.¹

From our point of view there is another equally important and urgent issue to debate: will the flu shot be accepted next autumn? Due to the risk of a second severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic wave, it will be crucial to reach adequate vaccination coverage rates (VCRs) against seasonal influenza. This will help to contain next winter's flu cases that would otherwise overlap with SARS-CoV-2 infections. The simultaneous outbreak of two respiratory syndromes would be a heavy burden for the health-care system generating the need for differential diagnosis and making the resources and capacity management more challenging. Likewise, regardless of seasonality, *Streptococcus pneumoniae* could be responsible for preventable respiratory tract infections and pneumonia.

In Italy, the National Immunization Plan 2017–2019 recommends influenza and pneumococcal vaccinations, both offered free of charge to the elderly population and to people with underlying medical conditions at risk for severe complications.² The target for elderly people of the Italian Ministry of Health was to gradually reach until 2019 75% pneumococcal VCRs and 75% (ideal goal 95%) influenza

VCRs every year. Nonetheless, vaccine uptake is steadily unsatisfactory.^{3,4}

Regarding this topic, using a regional electronic database that collects the immunization doses (excluding seasonal flu) administered to the Ligurian population, we have retrospectively checked the vaccination history of a cohort of 389 elderly patients (≥ 65 years) hospitalized for SARS-CoV-2 pneumonia in San Martino Hospital in Genoa (Liguria Region, Northern Italy). The majority of patients were males (62.9%) and had a mean age of 78.5 + 8.4 years. Among them, the information regarding previous pneumococcal vaccination was available for 354 patients (91.0%). We observed an overall immunization rate of 19.8% (70/354): among them, 11.3% (40/354) received only 13-valent pneumococcal conjugate vaccine (PCV13), 3.4% (12/354) were immunized with 23-valent pneumococcal polysaccharide vaccine (PPSV23) and 5.1% (18/354) received both vaccines.

These findings are in line with immunization coverage rates among the elderly general population in Liguria Region, where the pneumococcal coverage rate as of May 31, 2020 was 26.2% (118,581/453,082), among them 13.7% (62,226/453,082) received at least one dose of PCV13 and 12.4% (56,355/453,082) were immunized with at least one dose of PPSV23.

As in our Region influenza vaccine doses are still registered only using paper forms, we collected information regarding the 2019–2020 influenza season vaccination in our patients from their medical history. Data were available for 46 patients and 59% (27/46) of them were immunized. VCR in the general Ligurian population aged >65 years was 51.7% (234,153/453,082).

These results are far from the Italian Ministry of Health's expected VCRs.

To increase seasonal influenza VCRs, for the first time, the flu vaccine will be offered free of charge among the 60–64 age group and the 2020–2021 vaccination campaign will be anticipated starting from the beginning of October.⁵

Even though the Italian government is implementing useful mitigation policies to reduce the burden of a new epidemic wave in the upcoming period, we are left with great concern. Vaccine hesitancy remains a major issue that could alone determine the failure of a vaccination program. In this context, there could be serious consequences compromising the effectiveness of public health control measures implemented to early identify SARS-CoV-2 infections and contain the coronavirus pandemic.

ORCID

Laura Sticchi  <http://orcid.org/0000-0002-7819-7400>
 Lucia Taramasso  <http://orcid.org/0000-0002-6622-6358>
 Antonio Di Biagio  <http://orcid.org/0000-0003-1436-5089>
 Giancarlo Icardi  <http://orcid.org/0000-0002-8463-8487>
 Matteo Bassetti  <http://orcid.org/0000-0002-0145-9740>

References

1. Richmond H, Rees N, McHale S, Rak A, Anderson J. Seasonal influenza vaccination during a pandemic [published online ahead of print, 2020 Jul 31]. *Hum Vaccin Immunother.* 2020;1–3. doi:10.1080/21645515.2020.1793713.
2. Italian Ministry of Health. National immunization prevention plan 2017-2019. Published on the Italian Official Gazette, February 18 2017. [accessed: 11 June 2020]. <http://www.gazzettaufficiale.it/eli/id/2017/02/18/17A01195/sg>
3. Italian Ministry of Health. [accessed: 11 June 2020]. <http://www.salute.gov.it/portale/influenza/dettaglioContenutiInfluenza.jsp?lingua=italiano&id=679&area=influenza&menu=vuoto>
4. Martinelli D, Tafuri S, Caputi G, Fortunato F, Reggio P, Germinario C, Prato R. Eight years of active proposal of pneumococcal 23-valent polysaccharide vaccine: survey on coverage rate among elderly and chronic patients. *Am J Infect Control.* 2010;38(4):e8–e15. doi:10.1016/j.ajic.2009.09.019.
5. Italian Ministry of Health. Prevention and control of influenza: recommendations for the 2020-2021 season. [accessed: 12 June 2020] Available at <http://www.trovanorme.salute.gov.it/norme/renderNormsanPdf?anno=2020&codLeg=74451&parte=1%20&serie=null>