

Insights from the mass vaccination campaign against SARS-CoV-2 in Geneva, Switzerland

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Few studies on anti-SARS-CoV-2 mass vaccination performed in countries that started the vaccination campaign early are yet available. Data at the population level are needed to achieve a better understanding of the vaccines' benefits in real-world settings. In Geneva, Switzerland, the vaccination campaign started on 28 December 2020 using the BNT162b2 (Pfizer/BioNTech) and the mRNA1273 (Moderna) vaccines. Since then, people have been eligible for vaccination in order of decreasing age, as well as individuals with severe chronic conditions and healthcare workers. Between October 2020 and April 2021, the proportion of hospitalised for COVID-19 people aged 75 or more declined from 56.5% to 28.9%. This was consistent with previous reports in other countries. It suggests that a vaccination campaign focusing on vulnerable individuals and using simple and straightforward age-associated criteria to give access to vaccination can be beneficial.

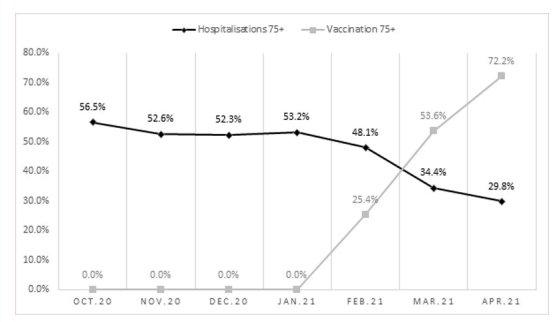
Vaccines against SARS-CoV-2 are widely available worldwide. Results of studies on mass vaccination performed in countries that started the vaccination campaign early (Israel and the UK) are already available. They showed good efficacy of SARS-CoV-2 vaccines in preventing infections, especially severe COVID-19, and avoiding hospital admissions [1–4]. However, further data at the population level are needed to achieve a better understanding of the vaccines' benefits in real-world settings.

In Switzerland, the mass vaccination campaign is organised at the regional level, in each canton. In Geneva, one of the cantons with the highest incidence of SARS-CoV-2 infection (12,432 per 100,000 habitants since the beginning of the pandemic), the vaccination campaign started on 28 December 2020. Since then, people have been eligible to vaccination in order of decreasing age, as well as individuals with severe chronic conditions and healthcare workers. Vaccination started with persons aged 75 or more and persons with severe health conditions. Then, since 23 February 2021, healthcare workers were offered vaccination; since 17 March 2021, persons aged 65 to 74 were eligible, since 12 April 2021, persons older than 45, and since 19 May 2021, persons older than 16. People were vaccinated using the BNT162b2 (Pfizer/BioNTech) and the mRNA1273 (Moderna) vaccines, with the second dose administered after 4 weeks.

Our study aimed to explore the change in the proportion of older people hospitalised for COVID-19 in Geneva, Switzerland before and after the start of the mass vaccination campaign. We used aggregated data per age group (75 years or more, less than 75 years) for all COVID-19 hospitalisations in Geneva between October 2020 (beginning of the second wave of the pandemic) and April 2021. Inclusion criteria were hospitalisation for COVID-19 and aged 18 years or more. A total of 3054 patients were hospitalised during the study period (1580 patients aged 75 or more). The primary outcome was the proportion of COVID-19 hospitalisations accounted for by people aged 75 or more over the study period (computed as: number of persons aged 75 or more hospitalised for COVID-19 for the corresponding month divided by the total number of persons hospitalised for COVID-19 for the corresponding month). The main results are displayed in figure 1.

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Figure 1: Proportion of people hospitalised for COVID-19 aged 75 or more and vaccination rate for people aged 75 years or more, Geneva, Switzerland. 1 November: Semi lockdown in Geneva (closure of bars, restaurants, non-essential shops, cultural venues, sports and leisure activities, lowering the limit for indoor/outdoor gatherings) 28 November: Partial reopening (reopening shops, museums, and libraries) 22 December: Semi lockdown in Switzerland (closure of bars, restaurants, non-essential shops, cultural venues, sports and leisure activities, lowering the limit for indoor/outdoor gatherings) 1 March: Partial reopening (outside spaces for sport and leisure facilities, shops, museums, libraries, upping the limit for indoor/outdoor gatherings) 19 April: Partial reopening (outdoor restaurants, indoor sport facilities, upping the limit for indoor/outdoor gatherings)



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Between October 2020 and April 2021, the proportion of people hospitalised for COVID-19 aged 75 or more declined from 56.5% to 28.9%. This decline was consistent with previous reports in other countries, which showed a reduction in COVID-19 hospital admissions [3, 4]. This study has some limitations, including selection bias, differential bias and potential confounding due to the impact of lockdowns. However, it suggests that a vaccination campaign focusing on vulnerable individuals and using simple and straightforward age-associated criteria to give access to vaccination could be beneficial. Therefore, these findings could be used for further policy making, while a large part of the worldwide population is waiting to be vaccinated, and to promote health equity.

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Disclosure statement

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