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Letter to the Editor

COVID-19 vaccine: missed opportunities and hospital vaccine implementation

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To the Editor:

COVID-19 is an ongoing pandemic. COVID-19 prevention tools are mainly based on barrier gestures and vaccination. By December 2020, vaccination was implemented in France, beginning with older people in long-term care facilities and healthcare workers (HCWs). More recently, waning immunity after COVID-19 vaccination coupled with a lower efficiency of vaccines against the Delta and Omicron variants led to the recommendation of a vaccine booster. A recent vaccination boosting campaign in Israel highlighted the efficacy of vaccine boosters.

Despite national campaigns, vaccination centers implementation, and possible of vaccination by general practitioners (GPs) and pharmacists, the vaccination coverage in France by January 5, 2022 in adults and children aged >12 years was only 91.9% for vaccination with one dose, 89.9% with two doses, and only 45.5% for vaccination with a booster dose [1]. There are multiple and complex reasons for people being unvaccinated [2]. Some are primarily related to the patient's perception of safety concerns about the COVID-19 vaccine or, less frequently, unfounded beliefs. More practical reasons have also been pointed out—in our private experience during the fourth wave of the disease, we found that around one third of unvaccinated patients hospitalized in our departments for COVID-19 reported a lack of proposal by their GPs or lack of access to vaccine centers, especially among very old, non-native French-speaking, or psychiatric patients [3]. Specific

outpatient groups, such as those undergoing hemodialysis or graft surgery, with hemopathies, or under certain immunosuppressive treatments, have specific vaccine guidelines not always known by their GPs. Lastly, mRNA vaccination is challenging to perform in small structures, due to the need for maintaining the cold chain, preparing a ready-to-use syringe (multidose vaccines), providing supervision by a HCW, and recording administration required vaccine pathways.

The Royal Cornwall Hospitals [4] and the New York State Psychiatric Hospital System (NYS) [3] has reported their COVID-19 vaccination program experiences as “hospital vaccine centers” for inpatients. Interestingly, the large-scale efficiency of hospital vaccine programs was validated by the NYS experience [3]. However, despite these reports, hospitals are usually not considered COVID-19 vaccination centers for inpatients, although they are used for handling COVID-19 immunization for at least HCWs, which would allow its quick and efficient implementation for inpatients or specific outpatient cohorts [5].

Hospitalization is a unique opportunity to track unvaccinated cases, such as in isolated patients or frail patients who did not get access to vaccine campaigns, and to convince hesitant patients to get vaccinated. Specific outpatient cohorts, such as highly immunosuppressed patients, are also regularly followed by hospital specialists who are aware of specific guidelines.

We implemented a flexible organization to facilitate the immunization of inpatients with the Pfizer vaccine in the Hôpitaux Civils de Colmar (HCC), a 1000-bed tertiary care hospital. Physicians were encouraged to check the COVID-19 status of inpatients and vaccinate-eligible patients via email. In cases of incomplete vaccine status, after having obtained the patient's consent, physicians could order a COVID-19 dose from the pharmacy, either for primo vaccination or as a boost, for their patients. Physicians were also encouraged to check the patient's COVID-19 vaccination status in cases of COVID-19 diagnosis in a non-COVID department and complete their inpatients vaccination if incomplete. Dose preparation and administrative organization were centralized in the HCC pharmacy. The pharmacy secretary received requests of vaccination, pharmacists analysed eligibility criteria, vaccination doses were prepared in the pharmacy, and nurses delivered the vaccine in the patient departments.

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The implementation of this organization allowed us to reduce the time required to deliver the vaccine dose to approximately two days.

From May 2021 to December 2021, 352 vaccines were delivered. We recorded 203 first doses (58%), 44 boosts (13%), and 105 third doses (30%). Remarkably, among the 352 vaccines, 245 (70%) were provided to hospitalized patients aged over 65 years. These 352 vaccine doses were delivered to 187 inpatients and 65 outpatients. After excluding inpatients in departments where COVID vaccination was not applicable (COVID, pediatric or intensive care units, hospitalization <24 hours) or not implemented (surgery units), we found that 4791 patients had been hospitalized during the study period. Although it was impossible to find the vaccine status on admission for each patient because it was usually poorly recorded, this campaign made it possible to vaccinate 3.9% of the total patients hospitalized in eligible departments (and therefore a much higher percentage of eligible patients inadequately vaccinated) especially among the most vulnerable patients.

This organization also permitted the accurate follow-up of a cohort of 65 outpatients, especially among patients who were hemodialyzed and patients with hemopathies. Among them, 55 patients received complete vaccination scheme (primo vaccination and booster) at the HCC.

This experience highlights the potential to implement hospitals as regular vaccine centers with the help of hospital pharmacists and physicians. National guidelines by health authorities describing flexible standard operating procedures could help the implementation of such programs. However, local initiatives such as ours are easy to implement outside the context of national guidelines. In all cases, these hospital vaccine centers would help increasing the vaccinated population coverage and diminishing the rate of susceptible patients both outside and inside the hospital, thereby limiting the consequences of nosocomial COVID-19 clusters.

The implementation of hospital vaccine centers for inpatients is an efficient and easy way to increase the COVID-19 vaccine coverage among the frailest populations and could probably be extended in the future to other types of immunization.

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Ethics

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Author's contributions

All authors have approved the final submitted version and participated in data collection and analysis. MM wrote the manuscript. MM, DR and LM revised the manuscript for content.

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