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Commentary

Mass vaccination campaign for residents and workers and assistance to vulnerable populations during COVID-19 pandemic: The experience of the healthcare services of the Vatican City

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The Vatican City State, the Holy See's independent State located as a walled enclave within the city of Rome, Italy, is a sovereign entity of international law with an area of nearly 120 acres and a current population of 802 inhabitants. The Holy See is recognized as a non-member State with a permanent observer mission at the United Nations and participates to the United Nations Sustainable Development Goals, actions developed to address by 2030 global interest challenges such as poverty, inequality, climate change, peace and justice [1].

The Vatican City State has been impacted by the Coronavirus disease 19 (COVID-19) pandemic with 42 cases reported as of January 7, 2021; of these, 12 cases occurred within the first two months of the pandemic, 17 during the months of October and November, 12 in December 2020 and one was reported in January 2021, while no cases were registered between May 7 and October 10.

The cornerstones of the past, current and future management of the pandemic by the healthcare services of the Vatican City include the adoption of strict prevention measures to limit contagion, the execution of a mass COVID-19 vaccination campaign for residents, workers, retirees and their families, and the implementation of strengthened assistance to vulnerable populations. To this extent, the pandemic represented a challenge for the *Directorate of Health and Hygiene of the Governorate of Vatican City State*, the internal healthcare system that provides health services to residents, workers and retirees of the State along with their families, and for the *Primary Care Services of the Eleemosynaria Apostolica*, the office of the Holy See that assists fragile populations.

Many actions have been taken by the Directorate of Health and Hygiene to limit virus spread in the Vatican City. They included, in accordance with international recommendations, preventive measures such as social distancing, hand disinfection, mandatory use of face masks, body temperature measurement and symptom screening, in addition to isolation protocols for symptomatic individuals [2]. Furthermore, serological tests for specific Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) antibody detection and rapid antigen and Polymerase Chain Reaction (PCR) tests through nasopharyngeal swab were performed in residents and workers. These actions started immediately after the World Health Organization (WHO) declaration of COVID-19 pandemic on March 11, 2020 and continued uninterruptedly through the first and second wave [3]. The prevention strategies adopted in the Vatican City State were strictly linked, for both timing and dynamics, to the ones performed in Italy; however, the Italian context experienced a more dramatic impact of the pandemic especially in some regions such as Lombardy where delayed public health response and uncontrolled transmission between asymptomatic cases led to high mortality rates [4].

Starting in mid-January 2021, a mass COVID-19 vaccination campaign among residents, workers, retirees and their families has begun in the Vatican City State. During the month of December, the Directorate of Health and Hygiene decided to adopt the mRNA BNT162b2 vaccine produced by Pfizer and BioNTech, which has been shown to be 95% effective [5] and has been authorized for clinical use by the European Commission (EC) on December 21, 2020 following the European Medicines Agency's (EMA) recommendation for authorization; subsequently, different types of vaccines may be introduced after collecting additional evidence on their effectiveness and safety. The current vaccination campaign does not include persons under 18 years of age. It is understandable that there may be some hesitancy for a vaccine that has been developed in such a short time; and it must be taken into account that mild side effects, which can include pain at the injection site, tiredness, headache, muscle and joint pain,

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and fever, may occur [6]. However, it is very important to reach high vaccination rates among the population and workers of the State and their families, as a vaccination campaign constitutes the extension of the principle of solidarity on which rests the foundations of living in a community, and responds to the need to protect collective health, and therefore also that of the individual. In fact, the right to health is a fundamental right of the human being, but it is also the expression of a collective interest in ensuring that all members of a community enjoy this right. Wide vaccination campaigns act in the direction of a collective interest, and this is extraordinarily important during the COVID-19 pandemic [7].

In addition to healthcare for residents and workers, the Vatican City reinforced free medical assistance to vulnerable populations such as migrants and people experiencing poverty and homelessness that, due to their living settings and potential comorbidities, have been peculiarly impacted by the pandemic [8]. These services were provided by the Primary Care Services of the Eleemosynaria Apostolica in medical facilities located under the Colonnade of Bernini in St. Peter Square, Vatican City State, and using dedicated mobile units. Assisted persons came from over 60 different countries, mainly Eastern Europe such as Romania, Ukraine and Poland, but also Africa, South America and Asia; in addition, the number of Italian patients increased over time as a consequence of the severe impact on economy and job loss caused by the pandemic. Many of these people were hosted in shelters in the neighborhoods surrounding the Vatican City. Males were slightly prevalent; the most represented age groups were 30−40 years and 50−60 years.

Medical activities toward fragile populations included general and specialty procedures, diagnostic tests, distribution of medicines, and diagnosis of COVID-19 with daily temperature monitoring, symptom check, rapid antigen and PCR tests through nasopharyngeal swab and serological detection of SARS-CoV-2 IgG and IgM [9]. As of January 7, 2021, 694 persons belonging to vulnerable populations were tested in the Primary Care Services of the Eleemosynaria Apostolica and 48 had a positive PCR test for SARS-CoV-2 infection (6.92%). The most reported symptoms were fever, cough, tiredness, muscle pain and diarrhea (13 patients, 27.08%), while the majority of the patients were asymptomatic (72.92%). The cumulative incidence of COVID-19 in this population was slightly higher than that found in similar fragile populations in different countries, while the large number of asymptomatic patients was consistent with other studies [10]. Furthermore, the Eleemosynaria Apostolica offered seasonal flu shots to fragile individuals to protect them against the influenza viruses that could have serious effects on these populations; nearly 300 persons were vaccinated for influenza in Winter 2020. Last, in the direction of making COVID-19 vaccination available to all, the Holy See decided to include homeless persons hosted in shelters managed by the State in the vaccination campaign. These combined efforts allowed to support health status and quality of life of vulnerable populations, in addition to the early identification of COVID-19 symptomatic and asymptomatic cases that were immediately isolated in dedicated facilities and assisted until complete recovery, thus preventing outbreaks that may have severe public health effects.

In conclusion, the successful execution of a mass vaccination campaign among residents, workers, retirees and their families in the Vatican City is of utmost importance for the control of infection spread in the State. At the same time, the offer of free medical support, COVID-19 diagnosis, prevention and vaccination to vulnerable populations contributes to the mission of ensuring healthcare assistance to everyone.

Contributions

The corresponding authors attest that all listed authors meet the ICMJE authorship criteria and that no others meeting the criteria have been omitted. AA and LE are the guarantors of this manuscript. MR and FDG wrote the first draft of the manuscript. MR and FDG were responsible for the conceptualization of the project. PMS curated and analysed the data. MR, FDG and AA have verified the underlying data. AA and LE provided supervision. All listed authors reviewed and edited the manuscript and approved the final, submitted version. All authors confirm that they had full access to the data in the study and accept responsibility to submit for publication.

Declaration of interests

None

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