



**Published:** October 31, 2023

**Citation:** De Chiara, A. et al. 2023. COVID vaccination campaign in prison: Intervention strategies and outcomes. Medical Research Archives, [online] 11(11). <https://doi.org/10.18103/mra.v11i11.4621>

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**DOI:** <https://doi.org/10.18103/mra.v11i11.4621>

**ISSN:** 2375-1924

RESEARCH ARTICLE

# COVID vaccination campaign in prison: Intervention strategies and outcomes

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## ABSTRACT

**Introduction:** On 30 January 2020, WHO declared the coronavirus outbreak in China a public health emergency of international concern.

The Italian government, the following day, proclaimed a state of emergency and implemented the first measures to contain the contagion throughout the country.

On 27 December 2020, after approval by the EMA, the population anti-COVID-19 vaccination campaign was launched in Italy and Europe with the aim of achieving herd immunity for SARS-CoV2 as soon as possible. On 26 March 2021, the anti-COVID vaccination campaign started within the prisons of the province of Salerno.

**Methods:** The province of Salerno has three penitentiary institutes on its territory out of the fifteen present in the Campania region.

The vaccinations were carried out to the staff of the Penitentiary Police and to the prisoners (of any gender and age) by the NHS staff working in the prisons. Ad hoc vaccination centers have been set up at each prison. The vaccines were distributed by the district pharmacies of ASL SALERNO.

**Results:** From 26 March 2021 to 31 December 2021, 1540 people were vaccinated among detainees and staff belonging to the penitentiary police within the Penitentiary Institutes insistent on the territory of ASL SALERNO.

Initially, the vaccinations were carried out with the Vaxzevria vaccine (Astrazeneca), subsequently the Janssen (Johnson & Johnson), Pfizer (Biontech) and Moderna vaccines were used. The Astrazeneca vaccine has met with resistance in carrying out and recorded many refusals; vaccination with the use of the remaining vaccines has found a greater diffusion and greater adherence. In particular, the detainees preferred the administration of the single-dose vaccine. The refusals were justified by a lack of confidence in the proposed vaccine and by not wanting to carry out two doses.

Vaccination was therefore considered useful for the prevention of COVID-19 contagion and complications following contagion. The carrying out strategies have allowed maximum diffusion in a short time, also considering the disadvantageous elements given by the high turnover of the detainees.

## Introduction

People in prison appear to be at risk of infectious diseases much more than the general population, diseases preventable thanks to vaccinations. Little is known about the coverage and implementation options of vaccinations in institutional settings.

Vaccination is effective and ensures comprehensive and tailored implementation to: reduce the burden of preventable disease; avoid uncontrolled and rapid spread to all guests; and contribute to health equity between people in prison and people at liberty.

Vaccination is among the most efficient and cost-effective public health interventions for reducing mortality and morbidity from infectious diseases worldwide, second only to improvements in general hygiene.

The objective of this descriptive observational multicenter study is to demonstrate the real feasibility of establishing a vaccination center in a penitentiary institution. a vaccination center within a penitentiary institution is the only effective way to provide optimal vaccination coverage.

Although expanded immunization programs are well established in the European Union/European Economic Area (EU/EEA), vaccination coverage may be suboptimal due to various factors including vaccination hesitancy, lack of health knowledge and literacy, as well as barriers to access. In particular, there is a lower vaccination coverage among specific population groups, including individuals belonging to socially disadvantaged communities.

In Europe, as globally, most of the people who spend a shorter or longer period in prisons belong to socially disadvantaged communities, with an increasing percentage of migrants and people with minority ethnic origins. The latter can take advantage of the vaccination programs for adults offered within prisons.

The increased prevalence of communicable diseases among incarcerated people is recognized as a major health risk for both people living and working in prisons and the general population, as the vast majority of incarcerated people return to their communities after short periods of incarceration.

Vaccination recommendations and approaches for the general population are, while valid, not readily applicable in prison settings, and research on vaccination schedules and factors related to vaccination coverage in prison settings is limited.

However, prison facilities can provide an opportunity for those in prison to access health services including HBV, HIV and HCV screening, treatment, and linkage to care.

The main barriers identified to completing the vaccination program were release from prison, house arrest, and transfer to other prisons.

Individuals in prison may be at lower risk of exposure to infectious disease but, because these facilities host large populations with high turnover, they are often overcrowded and immunization coverage may be suboptimal.

The management of the epidemic has presented various organizational problems such as, for example: limited personnel; limited deliveries of vaccines, and the refusal rate of inmates. Nonetheless, vaccination in prison may provide an opportunity for prison health services to reach people in disadvantaged communities who may suffer from suboptimal access to services while in the community.

Increased vaccination in prison settings may not only result in the protection of the individual against disease but also contribute to the achievement of herd immunity in the wider population or at least among specific higher-risk groups (1).

The traditional notion that prisons are designed primarily to ensure public safety should be complemented by this aspect of health, which is a broader approach to public safety (2).

When the WHO declared the coronavirus outbreak in China a public health emergency of international concern on 30 January 2020, the first measures to contain the contagion were applied.

The containment measures were immediately capable of limiting the spread but clearly were not decisive. Pharmaceutical companies have therefore started studies for the production of vaccines capable of preventing the diagnosis of

SARS-CoV-2 infection and cases of severe disease.

On 27 December 2020, following the approval of the Pfizer vaccine by the EMA, the population anti-COVID-19 vaccination campaign was launched in Italy and Europe, with the aim of achieving herd immunity as soon as possible for the SARS-CoV2. The National Strategic Plan for vaccines for the prevention of SARS-CoV-2 infections was presented on 2 December 2020 and released on 13 March 2021 (4).

In the initial phase of the limited availability of vaccines against COVID-19, it was necessary to define priorities in a clear and transparent way, taking into account international and European recommendations.

The categories to be vaccinated as a priority in the initial stages were the following:

- Health and social care workers who are at a higher risk of being exposed to COVID-19 infection and of transmitting it to susceptible and vulnerable patients in health and social settings;
- Institutionalized people, residents and staff of residential facilities for the elderly;
- Older people (5).

A descriptive observational multicenter study was conducted that took into consideration the execution of anti-COVID vaccinations at the three prisons of ASL SALERNO.

In the period between 26/03/2021 and 08/04/2021 the anti-COVID vaccination campaign started within the prisons of the province of Salerno.

## Methods

The province of Salerno consists of 3 prisons: a high turnover prison, with a capacity of about 390 prisoners but which is occupied by about 460 prisoners (both women and men); a penitentiary institution with a reduced turnover, being intended for prisoners nearing the end of their sentence, which has a capacity of 51 people and is currently occupied by 34 people; a penitentiary institution with a capacity of 47 people and which is currently occupied by 49 people.

The first institution consists of a section for common prisoners, a section for high-security prisoners, a female section, a section for "protected" and a section for workers.

The second institute is a medieval castle, formed by three sections which consists of 9 cells in total. The institute mainly houses inmates in good health conditions who do not present particular criticalities for the treatment of drug addiction.

The third institution is an old convent that houses the prison, there is a single section that houses all types of prisoners (judgeable, definitive, etc.). The institute mainly houses sex offenders.

The vaccinations were carried out to the staff of the Penitentiary Police and to the prisoners (of any gender and age) by the NHS staff working in the prisons. The vaccines were distributed by the district pharmacies of ASL SALERNO.

The staff of the vaccination units of the three prisons was made up of a flexible number of doctors and nurses already working within the structures.

At the local level, contacts have been identified who respond directly to the provincial and regional coordination structure.

The procurement of vaccines and distribution were carried out through the district pharmacies of Eboli and Salerno. In each structure, a room has been set up for the acceptances, with the compilation of the anamnestic form; a room for carrying out the vaccine, and the waiting room, where each person waited for 15 minutes after inoculation.

At the beginning of the vaccination campaign, adherence was maximum on the part of the penitentiary police, while refusals were recorded by the inmates.

In the first month of vaccinations, 266 performances were recorded, 125 policemen performed the first vaccination dose, and out of 141 prisoners, 17 refused vaccination and 124 first doses. The age range that initially refused the COVID vaccination was mainly 25-50 years old.

## Results

On May 31, with a total of 417 vaccinations, the majority of the detainee population present had carried out the first dose of vaccine, while 18 refusals had been registered. As of May 31, the vaccines used were Astrazeneca / Vaxzevria (244 doses performed), Moderna (66 doses performed), and Janssen 89 single doses.

Adherence among the inmate population was higher with the single-dose vaccine. In total, up to 31 December 2021, 1232 vaccinations were carried out at the highest prison, divided into 644 first doses, 396-second doses, 156 third doses, and 36 refusals in all; at the second prison, 173 vaccinations were carried out divided into 66 first doses, 73-second doses, 35 third doses, and 2 refusals were recorded; at the terso Penitentiary Institute 135 vaccinations divided into 55 first doses, 42-second doses, 38 third doses.

Vaccine efficacy to date is 44% within 90 days of completing the vaccination course, 36% between 91 and 120 days, and 47% over 120 days of completing the vaccination course or 62% in subjects vaccinated with additional dose/booster in preventing the diagnosis of infection; in preventing cases of severe disease is: o equal to 72% in vaccinated patients with a complete cycle of less than 90 days, 73% in vaccinated patients with a complete cycle of 91 and 120 days, and 74% in vaccinated patients who completed the vaccination cycle more than 120 days. or equal to 89% of subjects vaccinated with an additional dose/booster (3).

The general population has had access to vaccination through an expression of interest. The population concerned signed up for vaccination on a regional platform. Once interest in the anti-covid-19 vaccination was expressed, people were then summoned.

internet connection tools were not available, the inmate population could not access the regional platform and given the overcrowding of prisons, no action was taken on the expression of interest by the individual citizen but the vaccine was proposed in an active and wildfire way to contain the spread of the virus. The active proposition of the vaccination consisted of a direct call of the prisoners divided by section. Every day about 60 prisoners were called to propose vaccination.

Vaccination within penitentiary facilities is the only way to combat COVID-19 as neither distancing nor isolation is possible. There are no studies in the literature on cases of refusal of the COVID-19 vaccination because, since the method of adherence is different, those who did not want to get vaccinated did not join the platform and did not go to the local vaccination centers. During the beginning of the vaccination campaign within the penitentiary institutions of ASL SALERNO, precisely because of the different methods of proposing vaccination, refusals were recorded. The majority of refusals were recorded in the male population, while in the female population, out of 46 inmates, only 3 refused the administration of the first dose.

The reasons most given for refusing the vaccine were as follows: being against vaccines in general; vaccine safety concerns; thinking that a hastily produced vaccine is too dangerous; considering the vaccine useless due to the harmless nature of COVID-19; general lack of confidence; doubts about the effectiveness of the vaccine; belief that you are already immunized; doubt about the origin of the vaccine (7).

During the vaccination campaign, the inmates could only get information from social media, understood as newspapers and TV, as they did not have channels to access the internet. Social media have carried out disinformation campaigns on vaccine safety such as to convince not to carry out the vaccine.

Therefore, the media pressing on the side effects of vaccines did not contribute to the vaccination campaign (6) (8). An online study of the population of Poland indicated, through a questionnaire, the side effects of vaccines against COVID-19. In particular, side effects have been highlighted in the administration of the Vaxzevria and Pfizer vaccines. The study reports that part of those interviewed in the survey declared at least one side effect after the AstraZeneca and Pfizer vaccine, but these reactions were less common after Pfizer's preparation, a data comparable to those recorded in the medical records of vaccinated prisoners. Side effects after the first and second doses of the vaccines were injection site pain, arm pain, muscle pain, headache, fever, chills, and fatigue (10).

A period of incarceration appears to be a health possibility, not only in the COVID era, to reach an otherwise disadvantaged population who would have no way of accessing health facilities. In this regard, and to prevent contagious infectious diseases, it would be useful to set up a vaccination center - a public health unit pertaining to penitentiary institutions, to encourage the dissemination of vaccinations and allow for greater protection of the inmate and working population within the institutions.

### **Conclusion**

The establishment of a vaccination center in the penitentiary institution has allowed for optimal vaccination coverage against COVID-19.

There are no cases in the literature of the establishment of a vaccination center in a penitentiary institution. the active vaccination method has made it possible to convince even the most skeptical people to get vaccinated.

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