

ALTERNATIVE GALLERY



Mass population vaccination for COVID-19 in Malta

Victor Grech , Jorgen Souness and Steve Agius

Mater Dei Hospital, Msida, Malta

ABSTRACT

Introduction: COVID-19 remains pandemic with countries scrambling to mass vaccinate populations, prioritising health-care workers, the elderly and the vulnerable. Malta is a small Mediterranean country with a population of circa half a million with free healthcare at point-of-care. This paper reviews the adaptations made to cope with mass vaccination.

Methods: Permission was obtained to tour hospital facilities. Photographs were taken with and edited on a mobile phone, a previously utilised methodology.

Results: Vaccination commenced on 27/12/20 with priorities as above. Malta Medical School lecture halls were initially used, followed by outpatients at the country's regional hospital, as well as other lecture halls, and National Health Service clinics. Virtually all medically vulnerable individuals have had their first doses as well as most individuals ≥ 60 years of age, with the 55–60 year age group currently targeted. Malta is well ahead of the European Union average.

Discussion: Exacting logistics and cooperation by all local authorities (such as the University of Malta) has resulted in a highly successful vaccine rollout. The eventual licencing of vaccination for children and the availability of booster dose/s will further facilitate the eventual attainment of herd immunity. This must be a global effort lest escape variants render these efforts futile.

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Introduction

At the time of writing COVID-19 remains pandemic, with second and third waves impacting countries worldwide (Li et al., 2020). The most effective dampeners to date appear to be non-pharmaceutical interventions (social distancing, masks, hand washing, etc.) (Imperial College COVID-19 Response Team, 2020) and vaccination (Thanh Le et al., 2020).

Rapid vaccination rollout is generally viewed as the best way not only to curb pandemic morbidity and mortality but also to restart economies, a vital aspect of civilisation since travel is necessarily curtailed if infection is rampant (Grech, Grech, & Fabri, 2020).

Malta is a small country in the central Mediterranean with a population of circa half a million. The National Health Service is based on the British system, tax funded and free at point of care. Malta has one large regional hospital (Mater Dei Hospital – MDH) serving the archipelago. All countries have had to adapt to the influx of extra patients (Tanne et al., 2020) and two previous papers described the adaptations of both MDH and Malta's Medical School (Grech, 2020; Grech & Attard-montalto, 2020). This paper reviews the further adaptations made to cope with mass population vaccination.

Methods

Permission was sought from MDH's CEO and from the COVID-19 vaccination team to tour the hospital facilities. Photographs were taken with and edited on a mobile phone (Samsung S9), a methodology that has been previous used effectively (Grech, 2020; Grech & Attard-montalto, 2020).

Results

Vaccination commenced in Malta on the 27 December with the Pfizer-BioNTech COVID-19 vaccine. Front line MDH employees were vaccinated first and priority was given to staff dealing with COVID positive patients and those most likely to be exposed (e.g. Accident and Emergency staff dealing with respiratory patients, etc.). The rest of staff were swiftly vaccinated starting two days later as were all doctors, nurses and staff in contact with COVID-19, as well as all community pharmacy staff. As more vaccines arrived (Moderna, AstraZeneca), teachers, the elderly and medically vulnerable groups were targeted by means of SMS messages and direct mobile phone calls.

Initial vaccine rollout was in a large lecture room (LR4/5), usurped from Medical School. On arrival, individuals appointed for vaccination face a notice

which informs them of the four stages that they must go through (Figure 1): registration, queue for vaccination, actual vaccination and a 15 min wait for potential acute adverse effects such as anaphylaxis, with a crash trolley and trained staff standing by to deal with any such eventualities. After registration, vaccinees are ushered into a hospital corridor with suitably distanced seating (Figure 2). LR4/5 initially had three lanes but is now ramped up to 12 lanes (Figure 3) which makeshift cubicles that are self-contained for vaccination purposes (Figure 4). These vaccinees now include non-MDH staff.

The incremental increase in vaccine supply led to other sites being utilised. Several MDH outpatient clinics are used as soon as clinics finish and GateWay building at University of Malta (which is adjacent to MDH), was also taken over. This contains two large lecture rooms with five vaccination booths each (Figure 5). Smaller lecture rooms are used for vaccine reconstitution (Figure 6) and another small lecture room is used for training medical and dental students who have volunteered to help with vaccination

(Figure 7). Other vaccination sites are shown Table 1 along with current daily vaccination rates and estimated maximum vaccination rates. As more vaccines became available (such as Johnson and Johnson), National Health Service clinics (of which there are 30 scattered over the Islands) also started to administer vaccines. General Practitioners in private practice who have volunteered to participate will also be supplied with vaccines to administer.

At the time of writing, virtually all medically vulnerable individuals have had their first doses as well as most individuals over 60 years of age, with the 55–60 year age group being the next targets. Malta is well ahead of the European Union average, with over 200,000 first and second doses given, and compares well with the European Union average as well (Figure 8 – updated from here <https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&pickerSort=desc&pickerMetric=population&Metric=People+vaccinated&Interval=Cumulative&Relative+to+Population=true&Align+outbreaks=false&country=DEU~ISR~GBR~USA~MLT~European+Union>).



Figure 1. On arrival for vaccination, this notice notifies vaccinees of the four steps for an orderly process.



Figure 2. After registration, vaccinees are ushered into a hospital corridor with suitably distanced seating.

Discussion

The EU has adopted a centralised system to order COVID-19 vaccines and support the development of further vaccines in the 27 member union. The European Commission collectively negotiates advance purchase agreements and these are approved by the European Medical Agency (EMA). This should lead to lower prices and prevents wealthier states with higher purchasing powers from hogging supplies (Hyde, 2021). However, vaccine rollout in the EU has been disappointingly slower than expected, and EU Commission President Ursula von der Leyen has succinctly admitted: 'We were late in granting authorisation. We were too

optimistic about mass production. And maybe we also took for granted that the doses ordered would actually arrive on time' (Hyde, 2021).

Malta has done well by ordering all possible supplies of approved and available vaccines via the joint purchasing agreement and this, combined with meticulous planning, exacting logistics and cooperation by all local authorities (such as the University) has resulted in a very successful vaccine rollout. However, a significant portion of the population constitutes a potential reservoir for resurgence: the paediatric population (Dattner et al., 2021). It is hoped that an effective childhood COVID vaccine will further facilitate the attainment of herd immunity (Mahase, 2021). It is also hoped that a rapid



Figure 3. Malta Medical School Lecture Room (LR4/5) with 12 vaccination lanes.



Figure 4. Makeshift vaccination cubicles inside the lecture hall in the previous figure.



Figure 5. University of Malta Gateway Building lecture halls converted to vaccination hubs.



Figure 6. Smaller lecture rooms in the building in the previous figure used for vaccine reconstitution.



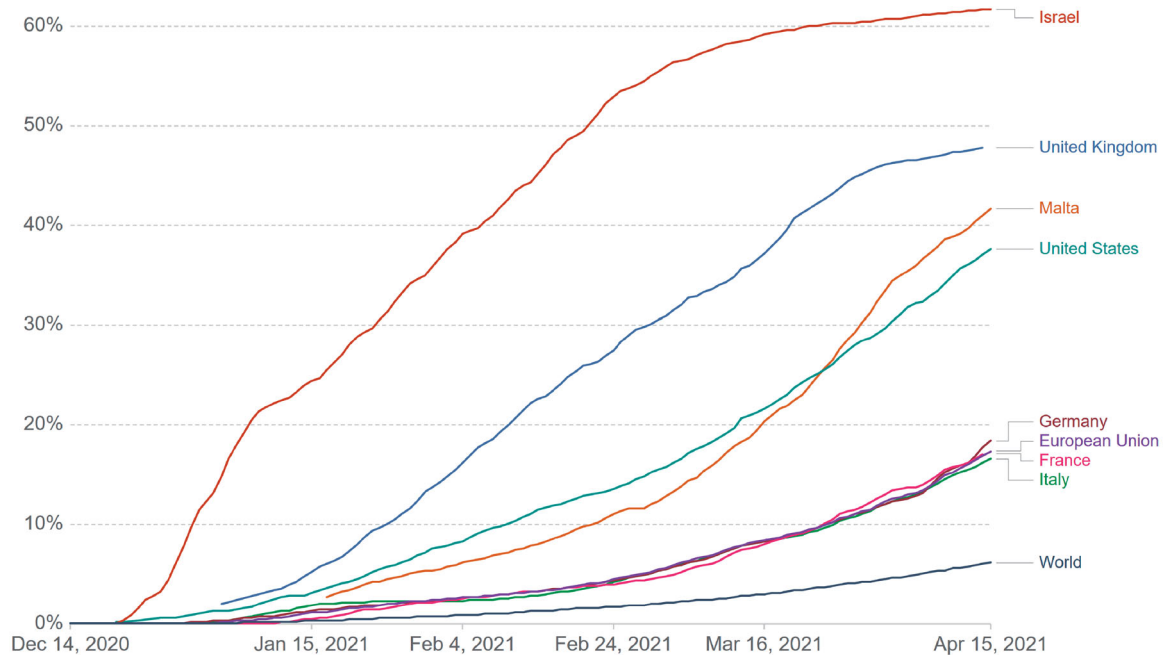
Figure 7. A small lecture room in the building in the previous figure used for vaccinator training.

Table 1. Current COVID-19 vaccination sites and average daily vaccination rates and maximum potential vaccination rates.

	Current	Potential
Department of Health		
Lecture room 4/5	800	1200
Orthopaedic	150	180
Ophthalmic	150	180
Dermatology	125	125
Dental	150	180
Pre-Operative Assessment Clinic	125	150
Boffa (ex-dermatology) Hospital	200	500
Blood Bank	200	500
Department of Education		
Gateway Building	1800	>2000
Malta College of Arts, Science & Technology (Paola)	300	>600
Maria Regina College (Naxxar)	250	500
GOZO hub (sister island of Malta)	400	1000

Share of people who received at least one dose of COVID-19 vaccine

Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.



Source: Official data collated by Our World in Data

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Figure 8. Share of people who received at least one dose of COVID-19 vaccine. From Our World in Data, 16/04/2021 (<https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&pickerSort=desc&pickerMetric=population&Metric=People+vaccinated&Interval=Cumulative&Relative+to+Population=true&Align+outbreaks=false&country=DEU~ISR~GBR~USA~MLT~European+Union>).

global vaccination drive will help global Public Health reach this objective (The Lancet, 2021) lest escape variants, viral mutations that completely or partially escape host immune response (post-infection vaccine induced) and render these efforts futile (Contreras and Priesemann, 2021).

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Victor Grech  <http://orcid.org/0000-0002-3373-0478>

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