

## Intermediate literature screening report

# Anti-Covid-19 vaccination in Israel: what can Switzerland learn?

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## Preamble

A large number of scientific publications become available on a daily basis, reflecting the rapid development of knowledge and progress of science on COVID-19 related issues. Leading authorities should base decisions or policies on this knowledge; hence they need to master the actual state of this knowledge. Due to the large number of publications shared daily, decision makers heavily depend on accurate summaries of these publications, in the different public health domains. Therefore, the authors of this report were mandated by the Swiss School of Public Health plus (SSPH+), upon request of the Federal Office of Public Health (FOPH), to inform the FOPH on recent findings from the literature.

**This intermediate update shares important studies that have been published since the previous report or intermediate update with a particular emphasis on the vaccination strategies in Israel. A more thorough analysis of these and other studies will be provided in the next full report.**

## Background

Israel has been launching a rapid Covid-19 vaccination campaign where it surpassed any other country in terms of per capita doses administered, at least to the date of writing this report.<sup>1</sup> Many factors contributed to this claimed success include, but not limited to, well-organized universal health coverage with advanced electronic medical record and primary care system, national emergency preparedness involving the defence forces and internal security agencies, generous vaccine purchase compared to the population, and motivated political leaders [1-4]. While Switzerland shares some of the components of Israel's successful story, more differences than similarities exist between the two countries. Yet, Switzerland can learn from Israel's experience to apply in its relatively slow rollout efforts.

Therefore, this report focused on the elements that Switzerland can use to improve and accelerate its current Covid-19 vaccination strategy.

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<sup>1</sup> Our World in Data coronavirus pandemic data explorer: <https://ourworldindata.org/coronavirus>. (accessed on 17 March 2021).

## Current vaccine rollout in Switzerland & Israel

Vaccination rollout started in Israel and in Switzerland on December 20<sup>th</sup>, 2020, and on January 4<sup>th</sup>, 2021 respectively<sup>2,3</sup>.

While the Israeli health authorities started the vaccination campaign quickly - 9 days difference from the emergency approval of the United States Food and Drug administration (FDA)<sup>4</sup>-, the vaccination in Switzerland took place two weeks later despite the relatively rapid Swissmedic market authorization approval on December 19<sup>th</sup>, 2020.

Whereas Israel is at least maintaining its vaccination at great speed, Switzerland had to further slow down its pace due to supply issues<sup>5</sup>.

## Methodology

Please refer to the previous reports if needed. The current report screened published data as of March 18<sup>th</sup>, 2021.

## Synthesis of information

We analysed the data based on the specific questions related to the vaccination rollout in Israel as per agreed protocol on March 11<sup>th</sup>, 2021.

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<sup>2</sup> <https://www.timesofisrael.com/israel-has-spent-788m-on-vaccines-could-double-that-in-future-health-ministry/> (accessed on 18 March 2021)

<sup>3</sup> <https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/impfen.html#-1397465140> (accessed on 17 March 2021)

<sup>4</sup> <https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/pfizer-biontech-covid-19-vaccine> (accessed on 17 March 2021).

<sup>5</sup> <https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/impfen.html#1210867030> (accessed on 17 March 2021).

## Elements or factors to potentially adopt from Israel's experience

One key element that contributed to the success of vaccine rollout in Israel is the fact that the Israeli government ensured the supply of vaccines and nation-wide delivery mechanisms to its residents. Unlike Switzerland, the Israel's government is responsible for vaccine procurement or purchase, storage, supply, and distribution to the target population. In Switzerland, the federal government shouldered the responsibility of cantons to inject the vaccine into the arms of people while keeping the burden of purchase and supply. The delivery strategies, hence, become the main task of the 26 Swiss cantons, which may even vary from canton to canton depending on their capacity and available resources. Like Israel, although Switzerland has used a single unified strategy based on well-defined criteria, the delivery mechanisms still rely on tertiary care hospitals that have naturally limited capacity. Moreover, Israel has involved the primary care practitioners and well-trained community nurses to inoculate the target population via four national healthcare services/plans<sup>6</sup>. The vaccination of residents living in long-term care homes (in German: Pflege- und Altersheimen) was allocated to a national emergency medical, disaster, ambulance, and blood bank service organization<sup>7</sup>. According to our knowledge, there is no similar institution in Switzerland but we believe that homecare institutions such as AVASAD ([http://www.avasad.ch/jcms/m\\_7371/fr/accueil](http://www.avasad.ch/jcms/m_7371/fr/accueil)) in the canton of Vaud and IMAD (<https://www.imad-ge.ch/>) in the canton of Geneva might be mobilized for such tasks, at least to be prepared in case of future outbreaks. In Switzerland, most health-insured people have a 'community' physician or general practitioner (GP) who could be involved in the vaccination efforts while, of course, planning for supply and costs arrangements. The identification of chronic care patients was relatively easy for Israel's residents who belong to any healthcare plan; such identification in Switzerland is less practical and patients – those under 75 years old- are asked to visit their GPs for a

<sup>6</sup> [https://en.wikipedia.org/wiki/Healthcare\\_in\\_Israel](https://en.wikipedia.org/wiki/Healthcare_in_Israel) (accessed on 17 March 2021)

<sup>7</sup> <https://www.mdais.org/en> (accessed on 17 March 2021).

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medical certificate to get vaccinated<sup>8</sup>. Such request may be seen as an obstacle and a potential reason for vaccine reluctance. Notably, the insurance companies possess what we call claims data that might be helpful to tailor the vaccination strategy to this subpopulation, even though diagnoses are not routinely collected by insurers but given the fact that medications are usually used as proxy to identify those patients [5, 6]. Like many countries, there exist disadvantaged communities and particular groups that might be more reluctant to Covid-19 vaccines.

Israel has addressed and monitored vaccine uptake in such communities (e.g., ultra-orthodox Haredi Jews or Arab Israelis)<sup>9</sup> where a stagnation<sup>10</sup> was observed. For this purpose, several strategies have been adopted to combat vaccine hesitancy:

- Strong media coverage (videos of people queuing to get vaccinated).
- Recruitment of religious leaders of particular groups.
- Vaccination of family doctors of those who care often of minority groups- for giving a role model - and asking them to call their patients to get vaccinated.
- Vaccination of influential figures in the community and use of culturally appropriate messages.
- Vaccination sites visits by government leaders including the prime minister.
- Availability of various ways to book an appointment (websites of healthcare providers, mobile phone apps, and call centers).
- Combatting the rumors and anti-Vax sentiments in the social media, knowing that the internal security agencies are actively involved in the campaign.
- Use of mockery [and potentially stigmatization] against anti-vaxxers and vaccine-reluctant groups<sup>11</sup>.
- Support to effectiveness studies as people doubted the efficacy of vaccines due to a surge in infections which coincided with the vaccination campaign<sup>12</sup>.

<sup>8</sup> <https://www.maccabi4u.co.il/1835-he/Maccabi.aspx> (Accessed on 17 March 2021)

<sup>9</sup> Boxerman A. Officials concerned by low vaccination rate among Arab Israelis: Times of Israel; 2020 [Available from: <https://www.timesofisrael.com/officials-concerned-by-low-vaccination-rate-among-arab-israelis/>] (accessed on 17 March 2021).

<sup>10</sup> <https://www.timesofisrael.com/israels-vaccination-stagnation-why-weve-caught-it-how-to-cure-it/> (accessed on 17 March 2021).

<sup>11</sup> <https://www.timesofisrael.com/israels-vaccination-stagnation-why-weve-caught-it-how-to-cure-it/> (accessed on 18 March 2021).

<sup>12</sup> <https://www.nature.com/articles/d41586-021-00316-4> (accessed on 18 March 2021).

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Of note, vaccine acceptance rate (78.1%) among doctors and nurses was relatively high in Israel, compared to some other countries.

Switzerland has been using a modest but effective Covid-19 testing and screening centres. If such facilities are used in the vaccination rollout, we can improve and accelerate the vaccine uptake very quickly.

Switzerland (at least some cantons such as Neuchâtel<sup>13</sup>) has used the armed forced as part of the emergency repose to Covid-19 crises; their use in the vaccination rollout may perhaps help speeding the vaccination rollout efforts.

Despite the apparent success of the Israeli vaccination rollout, there are several caveats and ethical issues of which we mentioned below some of them.

First, the ensured supply of vaccines was reportedly due to overpayment and data-sharing deals<sup>14</sup>. The costs<sup>15</sup> were initially undisclosed to the public and hence it will take time to evaluate the impact on the economy or any cost-benefit analysis. The data sharing with drug manufacturing compagnies poses ethical problems and needs further investigation.

Second, the vaccination campaign, according to experts<sup>16</sup>, should be extended to the other occupied Palestinian's regions and territories (e.g., the West bank) or even Gaza strip[7, 8], given the fact that the probability to get covid-19 vaccine is 60 times more in Israel than Palestine<sup>17</sup>.

Third, despite the shortage of nurses exist beyond the Covid-19 crisis, nurses were still moved from caring to chronic patients to be involved in the vaccination rollout efforts. Such tasks shift would not be without harm but how much this influences the health system needs to be evaluated.

Fourth, while the administration of vaccines by unusual health staff after a rapid law amendment (e.g., medics and paramedics) can be viewed as a simple proof of the

<sup>13</sup> <https://www.ne.ch/medias/Pages/20200503-appui-armee-ems.aspx> (accessed on 18 March 2021).

<sup>14</sup> <https://www.bloomberg.com/opinion/articles/2021-01-25/covid-19-vaccine-inequality-is-about-data-not-just-doses> (accessed on 18 March 2021).

<sup>15</sup> <https://www.timesofisrael.com/israel-has-spent-788m-on-vaccines-could-double-that-in-future-health-ministry/> (accessed on 18 March 2021).

<sup>16</sup> <https://www.theguardian.com/world/2021/mar/03/denmark-under-pressure-to-drop-plans-to-work-with-israel-on-vaccines> (accessed on 17 March 2021).

<sup>17</sup> <https://www.msf.org/stark-inequality-covid-19-vaccination-between-israel-and-palestine> (accessed on 18.03.2021).



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urgency response, such step would be important to investigate further by interested researchers.

Fifth, the vaccination of people who do not meet the time-being criteria has probably inflated the number of doses per capita administered, however, it was part of a strategy to recruit more people who are reluctant to get vaccinated or sometimes to avoid the disposal of unused doses<sup>18</sup>.

Sixth, ineligible children (aged 12 to 15 years old) were vaccinated despite the absence of efficacy and safety data in such population<sup>19</sup>. Whether this was part of the Pfizer-Israel agreement or not is still unknown or simply pushed by the fact that 1 out of 4 is under 16 years old.

Seventh, the creation of green pass<sup>2021</sup> or 'anti-Covid-19 vaccine passport' may have contributed to the success story but this may have generated a discrimination toward still a waiting list of unvaccinated people or those unwilling or unable to get vaccinated.

<sup>18</sup> <https://www.timesofisrael.com/hundreds-of-covid-vaccines-thrown-away-as-inoculation-push-said-out-of-control/> (accessed on 18 March 2021)

<sup>19</sup> <https://www.theguardian.com/society/2021/mar/10/israel-says-600-children-given-covid-jab-had-no-serious-side-effects> (accessed on 16 March 2021).

<sup>20</sup> <https://corona.health.gov.il/en/green-pass/> (accessed on 18 March 2021).

<sup>21</sup> <https://govextra.gov.il/ministry-of-health/covid19-vaccine/en-covid19-vaccination-information> (accessed on 18 March 2021).



## Efficacy and safety studies in Israel

As some nations, Israel has rushed to vaccinate its residents at great speed<sup>22</sup> which created an opportunity to evaluate the effectiveness and safety (e.g., rare adverse events) of currently marketed vaccines in real-world settings.

Preliminary studies [9-23] showed that Pfizer-BioNTech COVID-19 vaccine (BNT162b2) was effective (cases reduction to 94%) in the Israeli population. Of those, two studies [15, 16] reported a reduction of the viral load in infected individuals that would have probably curbed the virus transmission. Interestingly, one study [9] showed no efficacy (before 3 weeks) of a single dose of BNT162b2 in disagreement to another study [10] that showed an efficacy of 51% (13-24 days follow-up). Re-analysis and modeling of the same Israeli data resulted in 90% efficacy at day 21 [12]. In addition, two-dose regimen showed up to 97% efficacy on 14 days from 2<sup>nd</sup> dose [9]. Those differences in (under-) estimations were potentially related to other factors, mainly the lockdown in early January and the reported increase in incidence of cases by roughly 35% in the general population<sup>23</sup> or probably due to the ease of protective measures (e.g., social distancing) by the vaccinee population.

Of note, as per the manufacturer instructions, the vaccination information data<sup>24</sup> in the Israeli ministry of health insist on a second dose of the Pfizer-BioNTech COVID-19 vaccine (BNT162b2/COMIRNATY®) to obtain a maximal protection.

Another study [17] in Israel reported initial trend of benefits of vaccination by comparing the timing and outcomes in vaccinated versus unvaccinated cities. Unexpectedly, no major safety Israeli data have been published so far, given the fact that there are some data from Switzerland where 597 reports of suspected adverse reactions reported by patients and doctors, including cases of 177 (29.6%) that were classified as serious

<sup>22</sup> <https://ourworldindata.org/grapher/share-people-vaccinated-covid?tab=chart&stackMode=absolute&time=earliest..latest&country=BHR~BGD~BRA~CHL~DNK~FRA~DEU~IDN~ISR~ITA~NOR~POL~RUS~SRB~SVK~ESP~TUR~GBR~USA~ARE~CHE&region=World> (accessed on 18 March 2021).

<sup>23</sup> <https://data.gov.il/dataset/covid-19> (accessed on 18 March 2021).

<sup>24</sup> <https://govextra.gov.il/ministry-of-health/covid19-vaccine/en-covid19-vaccination-information> (accessed on 18 March 2021).

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and were fever (24), shortness of breath (18), COVID-19 disease (14), vomiting (11), hypersensitivity/anaphylactic reactions (19), headache/migraine (11) and reactivation of shingles (8).

Interestingly, a study [24] of 4,081 vaccinated healthcare workers in Israel observed a laboratory-confirmed Covid-19 infection among 22 (0.54%) of them. The study authors warn doctors to test patients if they developed Covid-19 related symptoms and not to ignore or consider such signs or symptoms as vaccine-related side effects.

## Conflict of interest

The current report expressed solely the opinion of the author and, therefore, does not have any link to the affiliated employers.

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