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A strategy for SARS-CoV-2 vaccination in Yemen

Yemen has one of the most fragile health-care systems and is currently experiencing war and famine. Since 2015, the country's humanitarian crisis has resulted in the emergence and re-emergence of debilitating infectious diseases and severely weakened the country's health infrastructure.

The first COVID-19 case in Yemen was reported in April, 2020, and WHO warned of a possible catastrophic explosion of cases.¹ Early epidemiological data showed a high mortality rate in individuals younger than 60 years.² In the absence of well equipped laboratories, infrastructure, and testing tools, misdiagnoses and underestimation of new cases have resulted in inconsistencies in reported case numbers. Indeed, a recent geospatial analysis of burial activity in the Aden governorate³ during the pandemic suggested a substantial, under-ascertained impact of COVID-19, implying that reported mortality data are inaccurate.

According to the latest WHO Yemen Situation Report for March, 2021,⁴ Yemen has received 360 000 doses of AstraZeneca COVID-19 vaccines through the COVAX initiative. Yemen is expecting to receive 14 million doses of COVID-19 vaccines through the COVAX, enough to vaccinate about 23% of the population.⁵ According to OurWorldInData COVID-19 vaccinations dashboard, as of May 29, 2021, just over 104 000 people have received at least one dose of COVID-19 vaccine.

All things considered, it is important to fashion out a safe model for vaccination rollout in Yemen, a country without a system for tracking virus spread in its susceptible community.

Worthy of note is the fact that just less than 3% of the Yemeni population is older than 65 years, which is relatively small proportion of the population compared with many other

countries, and so the number of doses of vaccine supplied will be sufficient to fully vaccinate older people. A vaccination strategy based on logistical considerations should be structured for the other priority and risk groups in the Yemeni population to ensure adequate, equitable, and effective vaccination. As a medical product, vaccines should meet postmarketing surveillance requirements, which implies drug tracking and monitoring. Similar practice is applied after sale of pharmaceutical drugs, medical devices, and medical products.

Therefore, besides the meritocratic prioritisation strategy and global equity initiative adopted by different countries, the serological tracking system should be simultaneously considered. Firstly, we suggest that everyone in the target age group or eligible for the vaccine should undergo SARS-CoV-2 testing before the vaccine is administered. Secondly, the serological tracing of people who are infected should be done, whether the vaccine recipient possesses antibodies should be reported, and also the concentration of antibodies should be measured. Data from several studies suggest that one dose of vaccine is enough for an individual who was previously infected, and taking this into account could prevent vaccine shortage and ensure wider vaccination coverage.^{6,7}

Finally, the quality of the serological testing is very important and ought to be thoroughly regulated. Serological testing should be quantitative by determining optical density and the cutoff with the binding index thus ensuring measurement of numerical values for the proportion of antibodies in the blood. The serological tracking system must have been tested for cross-reactivity and interfering substances that might affect the interpretation of results. The integration and implementation (diagnostic aspect and vaccine matching) strategy should be supervised and adopted by the ministry of health and other local authorities.

We declare no competing interests.

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Alhmad Al-Basha/Getty Images

ChAdOx1 nCoV-19 vaccine: asymptomatic efficacy estimates

Merryn Voysey and colleagues¹ provide some of the first evidence of the effectiveness of ChAdOx1 nCoV-19 vaccine (AZD1222) against asymptomatic infections. However, readers might be surprised by the non-intuitive results reported in the tables, where vaccine efficacy estimates for asymptomatic infections are close to the null or even negative.

Voysey and colleagues¹ suggest that protection against asymptomatic



For the COVID-19 vaccinations dashboard see <https://ourworldindata.org/covid-vaccinations>

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