



DRC getting ready to introduce a second Ebola vaccine

The deployment of a new Ebola vaccine is imminent, but its use is not without controversy given the complications of distributing the existing vaccine. Talha Burki reports.

For more on WHO's recommendation of the J&J vaccine see https://www.who.int/immunization/policy/position_papers/interim_ebolavirus_recommendations_may_2019.pdf

On Sept 23, 2019, WHO announced that a second Ebola vaccine will be introduced to the Democratic Republic of the Congo (DRC) from mid-October. Ad26.ZEBOV/MVA-BN, an experimental vaccine manufactured by J&J, will complement the ongoing ring vaccination strategy that uses Merck's rVSV-ZEBOV-GP. The Ebola virus disease outbreak in DRC was officially declared on Aug 1, 2018. As of Oct 1, 2019, there had been 3191 cases and 2133 deaths.

The J&J vaccine will be deployed to at-risk populations in areas where there is not active Ebola transmission. It is intended as a preventive measure. In the 3 weeks to Sept 29, there were 110 confirmed cases of Ebola virus disease, 68 of which occurred in three health zones in Ituri province. North Kivu, where the outbreak started, saw new cases scattered across several health zones.

Details of the deployment of the J&J vaccine had not been released as *The Lancet Infectious Diseases* went to press, but the plan is to protect populations surrounding the areas where transmission is most active. The decision on which areas will be targeted for vaccination will be based on epidemiological data, modelling studies, and security and logistical concerns. Individuals at high risk of contracting Ebola, including front-line workers, contacts of confirmed cases, and contacts of contacts, will continue to receive the single-dose Merck vaccine as part of the ring vaccination efforts.

J&J have a stockpile of 1.5 million doses. The vaccine has been tested in clinical trials involving over 6500 participants. It was well tolerated and induced a durable immune response. But there is a one big drawback. The vaccine must be

given in two doses, 56 days apart. There are questions over how feasible such a schedule will be in a region characterised by insecurity, a highly mobile population, and widespread mistrust.

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In May 2019, the WHO Strategic Advisory Group of Experts on Immunization recommended introducing the J&J vaccine to the DRC. But the then-Minister of Health, Oly Ilunga, was strongly opposed to the idea. He told reporters in Geneva that “it would perturb the population to be faced with several different types of vaccines and that would muddle the message, and, as you know in a complex outbreak response, the message needs to be simple and clear”.

Ilunga resigned from his position on July 22, after the president of the DRC, Felix Tshisekedi, took over management of the Ebola crisis. In his letter of resignation, Ilunga wrote that it would be “fanciful to think that the new vaccine proposed by actors who have shown an obvious lack of ethics by voluntarily hiding important information from medical authorities, could have a significant impact on the control of the current outbreak”. Proponents of the second vaccine counter that the idea of introducing a complementary vaccination strategy came from Jean-Jacques Muyembe-Tamfum, a well respected Congolese expert on Ebola who is now in charge of the response to the outbreak. In a further twist, Ilunga was detained on corruption charges in September 2019.

Nonetheless, few would disagree that rolling out the new vaccine will be challenging. North Kivu and Ituri are difficult to access and beset by violence. The population is very suspicious of outsiders, given the international community's lack of interest in the region prior to the outbreak. Attacks on health-care facilities and workers are a regular occurrence. Conspiracy theories concerning Ebola abound. All of which enormously complicates vaccination efforts.

Data released by WHO earlier this year suggested that the acceptance rate for the Merck vaccine exceeded 90%. But how easy will it be to persuade the population to accept a second vaccine, with a different schedule and different rationale? “A lot of work will be needed to make people understand what the J&J vaccine is and what the potential benefits are”, said John Johnson, vaccination manager at Médecins Sans Frontières (MSF). “It is important that the message is very clear and people have a chance to voice their concerns; we have to have a dialogue about the vaccine at a local level.” Nonetheless, he believes it is well worth the effort.

“It would be really good to have another tool in the fight against Ebola”, Johnson told *The Lancet Infectious Diseases*. “Of course, there are going to be challenges, and it will require a great deal of planning and communication with people on the ground, but it is not impossible to make it work”. He pointed out that the cholera vaccine also requires two doses, but has still been successfully introduced to epidemic settings.

Other questions include how to measure the effectiveness of the J&J vaccine if it is not being used in areas of transmission, how to ensure that those who are vaccinated with the as-yet-unproven vaccine will still

take precautions against exposing themselves to the Ebola virus, and whether all this is going to take place in a trial setting.

Meanwhile, differences between WHO and MSF over the vaccination drives with the Merck vaccine have been made public. “Despite the availability of a highly effective Ebola vaccine in northeast DRC, only a fraction of the eligible population is receiving it. One reason for this is WHO’s strict limits on the number of doses used in the field”, stated MSF, on Sept 23, 2019. “MSF’s efforts to expand access to the vaccination ... have been frustrated by the tight controls on supply and eligibility criteria imposed by the WHO.”

230 055 people have thus far received the Merck vaccine. WHO’s Ibrahim Soce Fall believes that MSF’s criticisms are unfair. “We are using the vaccine under very strict protocols”, he explained. “MSF just wants to go out and vaccinate everybody but that is not

what ring vaccination is about—you have to investigate deeply to identify contacts and contacts of contacts, before you can start vaccinating.” Johnson responds that the listing of contacts is incomplete. “We are reaching only about half of people who need to be vaccinated, and the evidence that the ring vaccination strategy is not working is plain to see—we have been vaccinating for over a year now without stopping the epidemic”, he said.

“If you do not have access to an area, because of insecurity or mistrust, of course ring vaccination will suffer”, said Soce Fall. “But where we do have access, most of the time we are starting to vaccinate within 24 hours.” He points out that the vaccine has to be maintained at a temperature well below zero. “We cannot send all the vaccine to DRC; we have a very clear approach to deploying it”. Merck has a stockpile of 190 000 doses, and aims to release a further 650 000 doses within the next 18 months. “We have



Johnson & Johnson

enough vaccine for the ring vaccination strategy”, stresses Soce Fall.

For the past 3 months or so, there has been a steady decline in the weekly number of reported cases of Ebola virus disease. But new cases are still springing up in areas which were previously unaffected or where transmission was thought to have been interrupted. It looks as if it will be some time before the epidemic runs its course.

Talha Burki

Infectious disease surveillance update

Polio in Philippines

On Sept 19, 2019, the Philippines reported an outbreak of polio following the reports of two cases of circulating vaccine-derived polio virus type 2 (VDPV2). Additionally, environmental samples from Manila (Aug 13) and Davao (Aug 22) also tested positive for VDPV2. The first case was confirmed on Sept 14, following confirmation from three laboratories: the Philippines National Polio laboratory, Japan Institute of Infectious Diseases, and the US Centers for Disease Control and Prevention. The first case was a 3-year-old girl from Lanao del Sur and was genetically linked to previously tested environmental samples in Manila and Davao, indicating that the virus is circulating. The second case was a 5-year-old boy from Laguna province. Polio was declared eradicated in the Philippines when the last case was reported 19 years ago. Currently, a

single case of polio is the threshold for declaring an outbreak.

Tularaemia in Sweden

As of Sept 30, Swedish health authorities have reported 960 cases of tularaemia since the outbreak began in July 2019. This is the highest number of cases reported in Sweden since the 1960s, surpassing the previous highest annual number of 859 in 2015.

Dengue in Brazil

As of Sept 14, 1 993 271 cases of dengue have been reported in Brazil in 2019, of which 1 064 011 have been laboratory confirmed, with all four serotypes being reported. Among the cases, 1208 have had severe dengue and during this period 634 deaths were reported.

Plague in DR Congo

Following the news of the death of a rodent and a guinea pig

reported to the health authorities on Sept 25, a family cluster of four cases with symptoms consistent with bubonic plague were identified in Aru health zone, Ituri province in the Democratic Republic of the Congo. The family were admitted on the same day and received treatment with doxycycline. However, one of the patients, a 15-year-old boy who also had symptoms of an inguinal swollen lymph node alongside the high fever that all patients had presented with, died from his illness on Sept 26. The health zone team began control and prevention activities on Sept 27, by spraying houses, identifying at-risk patients to be given preventive doxycycline, and raising awareness in the community. As of Sept 27, 12 suspected plague cases have been recorded including three deaths.

Ruth Zwizwai



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For more on the **Philippines polio outbreak** see <https://www.aljazeera.com/news/2019/10/red-cross-alarms-polio-outbreak-philippines-19-years-191002055300864.html>

For the **WHO account of the polio outbreak** see <https://www.who.int/csr/don/24-september-2019-polio-outbreak-the-philippines/en/>

For more on **tularaemia in Sweden** see <http://outbreaknewstoday.com/sweden-tularaemia-cases-decrease-significantly-after-recording-most-cases-in-decades-67598/>

For more on **dengue in Brazil** see <http://www.paho.org/data/index.php/en/mnu-topics/indicadores-dengue-en/dengue-nacional-en/252-dengue-pais-ano-en.html?start=1>

For more on **plague in DR Congo** see <https://www.promedmail.org/post/6710185>