INTERNATIONAL OUTBREAKS OF IMPORTANCE

Efficacy data emerging from COVID-19 vaccine trials

Preliminary results from three COVID-19 vaccine efficacy trials have recently been announced in the media. The mRNA vaccines developed by Pfizer/BioNTech Pharmaceuticals and Moderna were both shown to be safe with 95% efficacy in over 80 000 participants. This included people over the age of 65 years who are at higher risk of severe COVID-19 disease. It is envisaged that sufficient vaccine will be available for 35 million individuals in 2020 and up to 1 billion in 2021. While mRNA vaccines are easier to produce, they need to be kept at low temperatures, which makes their distribution difficult especially in developing countries.

The ChAdOx1 nCoV-19 vaccine developed by AstraZeneca and Oxford University is a vector-based vaccine that can be handled under normal cold chain conditions and is much more affordable. This vaccine showed 70% protection; however, comparisons are complicated as the mRNA trials tested only symptomatic individuals, whereas AstraZeneca set a higher bar, testing for all infections. The high level of vaccine efficacy for all three vaccines is encouraging as even 60% efficacy could significantly impact public health. Details on the immune correlates of protection, and their longevity are eagerly awaited.

Overall, these preliminary results suggest that multiple vaccines will be effective against COVID-19. South Africa is currently testing the AstraZeneca vaccine and a similar vectored vaccine developed by Johnson and Johnson. The protein-based Novavax vaccine is also being tested, but efficacy results are not yet available. Much needs to be done to ensure that vaccines are available to South Africans in the next 9-12 months, including negotiating access, securing funding to purchase vaccines and developing the capacity to manufacture vaccines locally.

Source: Centre for HIV and STIs, NICD-NHLS; nonom@nicd.ac.za and pennym@nicd.ac.za

An update on Ebola virus disease outbreak, Democratic Republic of Congo

On 18 November 2020, the 11th Ebola Virus Disease (EVD) outbreak in the Democratic Republic of Congo (DRC), 42 days after the last known confirmed case tested negative twice, was declared over.

The outbreak was first declared on 1 June 2020, following the report of seven EVD cases in Mbandaka city and neighbouring Health Zone Bikoro in Équateur Province, in the north-west part of the country.

During this outbreak, a total of 130 cases was reported (119 confirmed and 11 probable) across 13 health zones, 55 of whom demised and 75 recovered. Three healthcare workers were also reported to be among those affected.

This latest outbreak arose in the Équateur Province, on the north-west side of the DRC, as the 10th EVD outbreak was approaching its close towards the eastern parts of the country. These two outbreaks were geographically far apart and were proven, using genetic sequencing, to be unrelated.

The outbreak response carried out by the Ministry of Health in the DRC included more than 100 World Health Organization (WHO) staff, as well as others from a range of different organisations, with help from several partners through donations. The outbreak posed many challenges, amid the paralleled COVID-19 response, with obstacles such as access and logistical difficulties (with communities affected both in overcrowded urban areas, and remote rural areas), on top of resistance from some communities. These challenges were surmounted due to government leadership, community engagement and support from the WHO and partners.

During their efforts, the outbreak response was responsible for the successful vaccination of more than 40 000 people at high risk of disease. With support from partners, challenges such as the vaccination cold chain, requiring temperatures as low as -80 degrees Celsius, were overcome, allowing vaccinations to reach even the most rural of communities, without dependence on electricity supply. Vaccination strategies were rolled out as early as four days after the start of the outbreak, with up to 90% of the vaccinators from local communities, highlighting the critical role and strength in community engagement.

WHO Regional Director for Africa, Dr Matshidiso Moeti noted that "Overcoming one of the world's most dangerous pathogens in remote and hard to access communities demonstrates what is possible when science and solidarity come together. The technology used to keep the Ebola vaccine at super-cold temperatures will be helpful when bringing a COVID-19 vaccine to Africa. Tackling Ebola in parallel with COVID-19 hasn't been easy, but much of the expertise we've built in one disease is transferrable to another and underlines the importance of investing in emergency preparedness and building local capacity."

The risk of resurgence of cases in the DRC remains, as undetected viral transmission cannot be excluded as the virus is known to persist in the bodily fluids of some disease survivors for some time, as well as on medical apparatus used to treat those infected. As a result, for a period of six months following the declaration of the end of an outbreak, a combination of passive and active surveillance must be maintained. In addition, the survivor programme and the biological follow up of those who have recovered must continue for a minimum of 18 months. Ebola virus remains endemic in the region due to its presence in animal reservoirs in many parts of the DRC.

The end of this outbreak serves as a reminder to all governments and partners to continue to focus their attention and efforts on other emergencies, as the fight against COVID-19 continues. There is an ongoing need for increased investment in improving the core capacities of countries in implementation of International Health Regulations. Enhanced preparedness will improve responses to future threats arising from epidemic-prone diseases and result in a lessened social and economic impact.

Source: WHO: www.who.int; WHO-AFRO, Division of Public Health Surveillance and Response, NICD-NHLS; (outbreak@nicd.ac.za)