One of the largest emergency vaccination campaigns ever attempted in Africa will start in Angola and the Democratic Republic of Congo this week as WHO and partners work to curb a yellow fever outbreak that has killed more than 400 people and sickened thousands more. Working with Ministries of Health in the 2 countries, WHO is coordinating 56 global partners to vaccinate more than 14 million people against yellow fever in more than 8000 locations. The yellow fever outbreak has found its way to dense, urban areas and hard-to-reach border regions, making planning for the vaccination campaign especially complex.

Emergency yellow fever vaccination campaigns have already reached more than 13 million people in Angola and more than 3 million in Democratic Republic of the Congo. These campaigns have been crucial to stopping the spread of the outbreak. Some areas are still considered at high risk and so preventive vaccination campaigns are planned for the capital city of Kinshasa in Democratic Republic of the Congo and along the country's border with Angola, which spans 2646 km. The preventive vaccination campaign aims to build protection in the population perceived to be at high risk of getting infected and prevent potential spread and expansion of the current outbreak.

Kinshasa has more than 10 million people, with only 2 million already vaccinated against yellow fever. With local transmission of the virus and low immunity in the population, there is a potential risk that the deadly outbreak could spread to other urban areas.

Protecting as many people as possible

With limited supplies of the vaccine, and a 6-month minimum manufacturing process, WHO has been working with the Ministries of Health to plan the mass vaccination campaign that uses one-fifth of the standard vaccine dose as a short-term emergency measure to reach as many people as possible.

This method, known as fractional dosing, was recommended by WHO's Strategic Advisory Group of Experts on Immunization (SAGE), after it reviewed existing evidence that demonstrated lower doses would protect people safely and effectively against the disease for at least 12 months, and likely much longer. The fractional dose will not entitle people to travel internationally, but it will protect them from yellow fever during this outbreak and will help stop it from spreading further.

"Protecting as many people as possible is at the heart of this strategy. With a limited supply we need to use these vaccines very carefully," says William Perea, Coordinator for the Control of Epidemic Diseases Unit at WHO.

Nuts and bolts of the mass vaccination campaigns

WHO and partners including Médecins sans Frontières (MSF), International Federation of the Red Cross (IFRC) and UNICEF have been working closely together through the complex planning and logistics needed for the campaign.

Gavi, the Vaccine Alliance, has already enabled these countries to access almost 19 million

doses of the vaccine since January and is providing strong support to the upcoming campaigns as well. Other partners providing expertise and support include Save the Children and the United States Centers for Disease Control (CDC).

Usually, planning a mass vaccination campaign can take anywhere between 3 to 6 months. This emergency campaign, however, must take place as soon as possible to end transmission before the rainy season starts in September.
"In order to vaccinate roughly 8 million people in Kinshasa within a short period, each team will need to vaccinate hundreds of people per day," says Perea.

Approximately 17.3 million syringes and 41 000 health workers and volunteers are needed for the campaign. More than 500 vehicles will be used to transport the teams and supplies, which will be dispersed across more than 8000 vaccination sites in Kinshasa and along the Angola-Democratic Republic of the Congo border.

Essential supplies by the numbers
The fractional dose campaign in Kinshasa hinged on the availability of vaccines donated by the Brazilian government and manufactured by The Immunobiological Technology Institute (Bio-Manguinhos).
The campaign also required the purchase and shipment of 10 million specialized 0.1ml syringes, to ensure the right amount is used for every vaccination.

"The quantity of the syringes needed was not available on the open market, so we made a special order to manufacture these syringes," says Guillaume Queyras, responsible for Operations Support and Logistics at WHO. "Supply of the syringes usually takes more than 2 months. Given this emergency situation, manufacturers worked with us to speed up production and deliver the syringes on time in the country".

The 17.3 million vaccine syringes – equivalent to 700 cubic metres or 17 40-foot shipping containers – were air freighted to Democratic Republic of the Congo. After the vaccines and syringes arrived in the country, the freight had to be cleared through customs, a procedure that normally takes weeks. WHO worked closely with the Government of Democratic Republic of the Congo to fast-track this process.

Cool vaccines
From the manufacturer to the person being immunized, the vaccine must be stored and transported at the right temperature – between 2 to 8 degrees Celsius – to maintain their potency. With lack of reliable electricity supply and fuel to run generators in large parts of the country, refrigeration is a big challenge. For this campaign alone, 115 000 ice packs are needed to keep vaccines cold and usable.

Training
WHO has developed guidance and materials that is being used to train thousands of health workers and volunteers before the campaign starts. Health workers in Kinshasa need specific training on how to vaccinate people using the fractional dose.

Engaging communities

In the weeks leading up to the campaign, communities have been informed about the importance of getting vaccinated. WHO, UNICEF and partners have developed guidance and resources to help country teams, community health workers and volunteers engage communities to participate in the campaigns.

Teams on the ground are using local languages and trusted communication channels to reach and engage people. They have been meeting with religious and political leaders, delivering presentations and flyers at markets, health centres, churches and schools to ensure that people understand the campaign and how to protect themselves. Media announcements have also been made in local languages across print, radio and television channels to ensure maximum participation in this important campaign that aims to end this yellow fever outbreak.

http://www.who.int/features/2016/yellow-fever-mass-vaccination-campaign/en/