

# \$460-mn vaccine push to 'outsmart' viruses

January 19 2017

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Credit: National Cancer Institute

With the world still reeling from outbreaks of deadly Ebola and baby-deforming Zika, governments and charities launched a \$460-million (431 million-euro) initiative Thursday to "outsmart" infectious epidemics.

The goal is to develop vaccines with which to contain outbreaks before they become global health emergencies, the creators of the Coalition for Epidemic Preparedness Innovations (CEPI) announced at the World

Economic Forum in Davos.

And they should be available free of charge.

"We know that epidemics are among the significant threats we face to life, health and prosperity," said Jeremy Farrar, director of the Wellcome Trust, a health research charity which backs the project.

"Vaccines can protect us, but we've done too little to develop them... CEPI is our chance to learn the lessons of recent tragedies and outsmart epidemics with new vaccine defences."

The priority will be vaccines against the highly-contagious and fatal Middle Eastern Respiratory Syndrome (MERS) as well as the Lassa and Nipah viruses, which can cause serious epidemics.

The coalition will aim to create two trial vaccines for each of these viruses "so that these are available without delay if and when an outbreak begins".

"Ebola and Zika showed that the world is tragically unprepared to detect local outbreaks and respond quickly enough to prevent them from becoming global pandemics," said billionaire CEPI backer Bill Gates.

About 11,300 people died in a 2013-16 Ebola epidemic in Guinea, Liberia and Sierra Leone—the worst outbreak by far in the disease's 40-year history.

## **Finish the job on Ebola**

Since 2015, more than 2,200 babies in Brazil have been born with microcephaly, a crippling deformation of the head and brain, in an unprecedented outbreak of the mosquito-borne Zika virus.

The race is on to develop vaccines against both diseases, but none has been registered yet.

So far, CEPI has received money from Germany, Japan and Norway, the Bill & Melinda Gates Foundation, and the Wellcome Trust—raising almost half the \$1 billion needed for its first five years of operation.

The economic damage caused by epidemics is matched only by wars and environmental disaster, Norway's Prime Minister Erna Solberg said in Davos.

"Guinea, Sierra Leone and Liberia suffered an economic loss of at least \$3 billion as a result of Ebola, and we know that SARS cost \$40 billion."

Andrew Witty, chief executive of CEPI participant GlaxoSmithKline, said the initiative would seek to develop vaccines through Phase I safety and Phase II efficacy trials.

This way, when an outbreak happens, the drug can be quickly put through Phase III testing in a larger group of people—the final stage before licensing.

"Ideally we do five or six" vaccines, said Gates, though "at our current funding level it is more likely that we will be able to do two or three."

For Farrar, this should include "finishing the job on Ebola"—for which several vaccine candidates have proven effective in trials.

"We have to be able to have a licenced vaccine that can be used tomorrow when the inevitable epidemic of Ebola comes back," he said.

The greatest mistake, added Farrar, would be "to do what we did after SARS, and that is to forget it and move on."

A 2003 outbreak of the deadly respiratory disease infected people in nearly 40 countries within weeks and caused global panic. It claimed 800 lives, mainly in Asia.

The coalition said it would need "significant additional investment", and urged more governments and charities to join the initiative.

Other participants include the World Health Organization, several NGOs and pharmaceutical companies.

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Citation: \$460-mn vaccine push to 'outsmart' viruses (2017, January 19) retrieved 2 May 2024 from <https://medicalxpress.com/news/2017-01-mn-vaccine-tackle-viruses.html>

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