# CEPI | New vaccines for a safer world

Launched at Davos in 2017 and now with funding totalling $620m from sovereign investors and philanthropic institutions.

# A global insurance policy to defend against future epidemics

## Vision:

**Vaccines can prevent outbreaks of emerging infectious diseases from becoming humanitarian crises.**

## Mission:

**To stimulate, finance and co-ordinate vaccine development against diseases with epidemic potential in cases where market incentives fail.**

## Scope:

**CEPI takes a comprehensive approach to vaccine development, focusing on two initial priorities.**

1. CEPI will bring priority vaccine candidates through the end of phase II clinical trials.
2. CEPI will support vaccine platforms that can be rapidly deployed against known and unknown pathogens.

Over ten years, the global costs of epidemics could amount to **$600bn.**

They arise anywhere, anytime and they **pay no respect to borders.**

## 1 History teaches us
SPANISH INFLUENZA

Known as the "Great Influenza" or "Flu of 1918" 1/3 of the world's population is thought to have been infected, killing more people than WWI.

**500 million**
INFECTED

**50 million**
LIVES LOST

**5%** GLOBAL GROSS DOMESTIC PRODUCT
Estimated cost of similar pandemic today

## 2 A wake-up call
EBOLA

The world's failure to control Ebola quickly in the 2014 and 2015 West Africa outbreak resulted in

**28,616**
INFECTIONS

**11,310**
LIVES LOST

**$2,8 bn**
LOSS in worst-affected countries in 2015

## 3 New threats emerge constantly
ZIKA

Zika was first discovered in East Africa in 1947. In 2007 it reached the Pacific island of Yap – nearly **75% of the population** is estimated to have been infected indicating its epidemic potential.

**99**
COUNTRIES AFFECTED so far

**5%**
RATE OF BIRTH DEFECTS in US Zika-infected mothers

## 4 The 21st century's future outbreak...

A virulent respiratory virus spreading as fast as flu could spread to all major global capitals within **60 days.**

**33 million**
LIVES LOST

WITHIN **250 days**



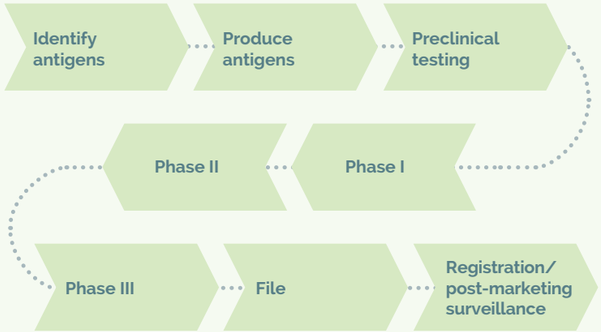
**Forewarned is forearmed.**
**But what happens when there is no warning?**

# The world isn't ready.

In the modern world with urbanisation and global travel, 21st Century epidemics could start in a big city and then take off the way Ebola did in West Africa.

Pathogens are not only spreading faster, they are emerging more quickly than ever before: since the 1970s, newly emerging diseases have been identified at the unprecedented rate of one or more per year.

# Building on lessons learnt through recent tragedies to outsmart epidemics




## Vaccine development is complex and expensive

It starts with small scale studies for safety and immune responses in hundreds of people who are not at risk for the disease.

Vaccines that pass those tests move on to trials to establish effectiveness in thousands of volunteers.

## The Challenge

**Outbreaks come and go | Poor countries are hit hardest putting strain on already fragile health systems | Market potential is often limited | Governments' efforts to fund R&D preparedness can be inefficient and unsustainable**

## But the momentum and opportunities for transformative progress are there...



## The Ebola paradox and the CEPI solution:

The coalition was created not because of the failure to deliver an Ebola vaccine in time for it to be useful, but because of how close that project could have come to success.

**For the first time in history, a vaccine was tested in the middle of an epidemic** with unprecedented speed and collaboration.


The closing days of 2016 brought great news: The world now had an Ebola vaccine that was 100% effective.

But that vaccine, known as rVSV-ZEBOV, was actually created in 2003, and first tested in monkeys in 2005.

Then it stalled because testing a vaccine is complicated when outbreaks are sporadic.

It can cost up to $1 billion to test them in large clinical trials, and to build the manufacturing facilities needed to make them.

In the Ebola crisis, despite huge international efforts, it took 9-12 months to gather safety data.

## The delay in deployment cost thousands of lives.

Similarly, Zika was recognized as a global problem early in 2016 and over 30 candidate Zika vaccines were in development by the end of the year, some using 14 different technologies.

Today, at least 6 of these candidates are in clinical trials, but none will be ready even for emergency use before 2018.

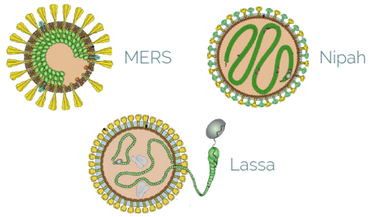
# Delivering on CEPI's **mandate for change**

## 1 Preparedness: "just-in-case"

CEPI will carry vaccines vaccines through late preclinical studies to proof of concept and safety in humans before epidemics begin, ensuring:

- Large effectiveness **trials can begin swiftly in an outbreak**
- **Small stockpiles** are ready for emergency use

It will support development of vaccines against MERS, Lassa fever and Nipah virus, which WHO defines as urgently in need of countermeasures. CEPI will also support development of vaccine platform technologies that enable rapid vaccine development.




## 2. Response speed: "just in time"

CEPI will capitalise on exciting developments in adaptable vaccine technology to build infrastructure and institutional capacities that can be rapidly deployed against new and unknown pathogens.

- Target a **16-week timeframe** from identification of antigen to product release for clinical trials.
- Target a **6-week timeframe** from administration of first dose to achievement of clinical benefit (i.e. immune response likely to result in clinical benefit).
- Produce 100,000 vaccine doses **within 8 weeks** to impact an emerging outbreak (i.e. from Go-decision to scale-up to production, fill, finish, and release).

## 3. Risk-sharing

**CEPI will secure industry participation** in the coalition through partnerships that share the risks and benefits of vaccine development increasing global capabilities for EID vaccine development and manufacturing worldwide.

## 4. Equity

CEPI will support **equitable access, affordable pricing** and will work to ensure **availability of vaccines for people who need them.**



Too often, global panic about epidemics has been followed by complacency and inaction. The world is living on borrowed time before we see the kind of global pandemic we have all been warned to expect.

CEPI is testament to an emerging consensus that for new vaccines to be game changers, **we must put an end to today's fragmented approach** and **adopt a systematic, concrete plan for collective action.**

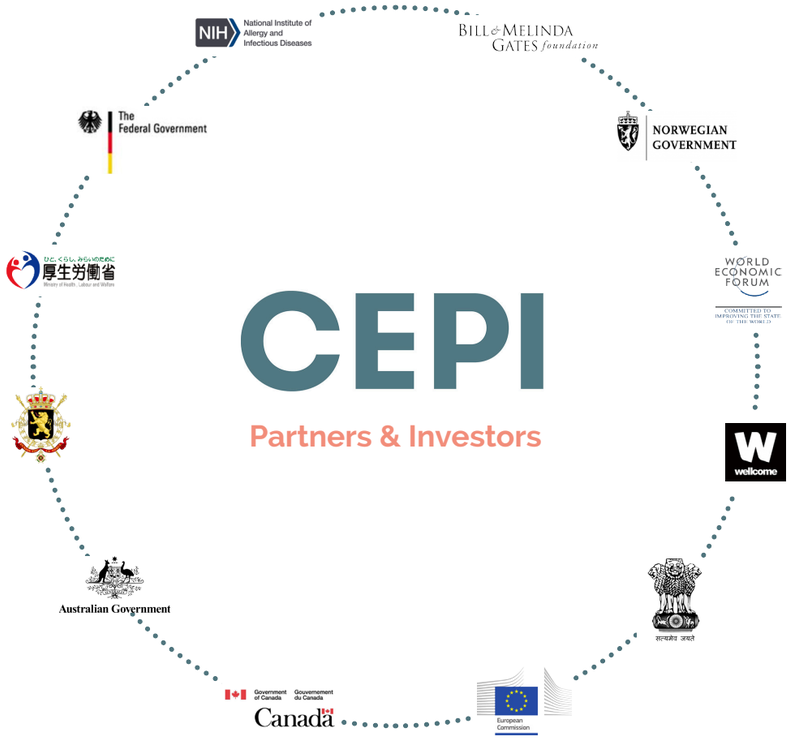
# CEPI is in a unique position to deliver a **major advance in global health security**

**Built on a strong global mandate**

**Unprecedented in its inclusive approach spanning academia, public-health agencies, large and small companies, and a range of philanthropic and government funders**

**Experienced leadership delivering against clear and transparent milestones**

**Strong internal experts and capabilities**




CEPI is actively seeking partnerships with governments, potential funders, industry partners, regulators, and civil society organisations with an interest in building a proactive and accelerated approach to vaccine development.

For further information, please contact the Secretariat via **info@cepi.net**



# We have an urgent choice to make between best- and worst-case scenarios.

@CEPIvaccines

For references and
sources please see

**cepi.net**

CEPI

Coalition for Epidemic Preparedness Innovations