

	Coalition Epidemic Preparedness Innovations (CEPI)	Bill & Melinda Gates Foundation Strategic Investment Fund (BMGF SIF)	Adjuvant The Global Health Investment Fund
<b>Profile</b>	Primarily a Grant Funder to Support R&D for Interventions Against Epidemic Threats. Has the flexibility to develop other investment tools going forward.	BMGF SIF uses a variety of financing tools to stimulate private-sector innovation, encourage market-driven efficiencies and attract external capital to initiatives that support BMGF's charitable mission	Adjuvant is an impact investment fund that uses venture capital and private equity strategies to support global health R&D projects with commercial financial return prospects
<b>Interventions they Fund</b>	Primarily Vaccines	Vaccines, Therapeutics, Diagnostics, and Other Technologies	Vaccines, Therapeutics, Diagnostics, and Other Technologies
<b>Areas of Focus</b>	WHO R&D Blueprint Priority Pathogens; e.g. Ebola, Lassa, MERS, Nipah, "Disease X"	HIV, TB, Malaria, and Other Neglected Infectious Diseases, Maternal and Child Health Challenges	HIV, TB, Malaria, and Other Neglected Infectious Diseases, Maternal and Child Health Challenges
<b>Typical R&amp;D Funding Amounts per Project</b>	\$10-50 Million	\$5-100 Million	\$5-50 Million
<b>Funding Structure(s) Available</b>	Milestone-Based Grants. Flexibility to develop other investment tools. Also entering into "Development partnerships" with aligned non-profit organizations. Also putting in place tools for surge funding to expedite R&D during outbreaks.	Loans, Equity Investments, Project Financing, Volume Guarantees, and Other Innovative Finance Mechanisms (note that BMGF's Global Health Program makes traditional grants as well; SIF capital is used when an investment structure is more suitable)	Loans, Equity Investments, Project Financing
<b>Phases of Development Funded</b>	Early Stage (Preclinical, Phase I, and Phase II)	Early Stage, Late Stage, Commercialization/Scale-Up	Late Stage (Validating Phase II Data or Later Required), Commercialization/Scale-Up

## The Coalition for Epidemic Preparedness and Innovations: a global partnership

Frederik Kristensen MD, MBA, MPH  
Deputy CEO, CEPI  
October 30, 2018



DEPARTMENT OF BIOTECHNOLOGY  
Ministry of Science & Technology

# Overview

- About CEPI
- Our priorities and investments
- Further areas of collaboration



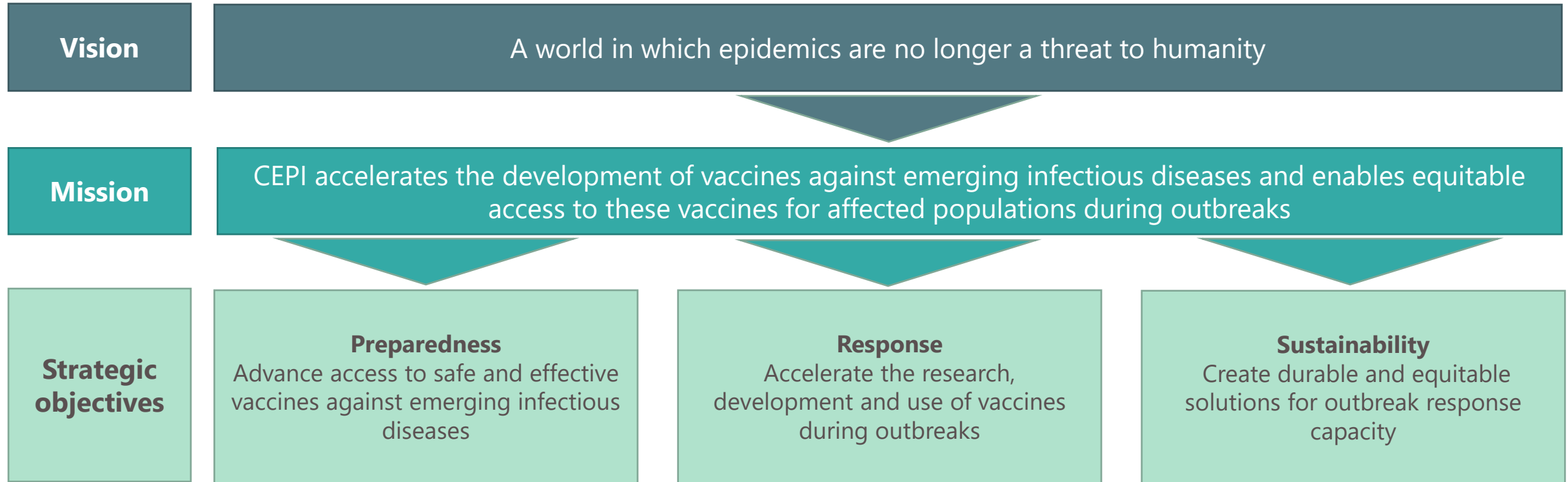
# What is CEPI?

- Launch: Davos World Economic Forum 2017
- Global coalition of public, private, philanthropic and civil society organisations
- To stimulate, finance and coordinate vaccine development for emerging infectious diseases



- Identify priority threats and act when market forces fail to drive needed development
- Move vaccine candidates through late preclinical studies to proof of concept and safety in humans
- Build capabilities for rapid response to unknown threats

# CEPI: vision, mission, strategic objectives



# CEPI's first investors



200  
EUR



125M  
USD



1.6B  
NOK

BILL & MELINDA  
GATES foundation



100M  
USD



90M  
EUR



4M  
CAD



2M  
AUD



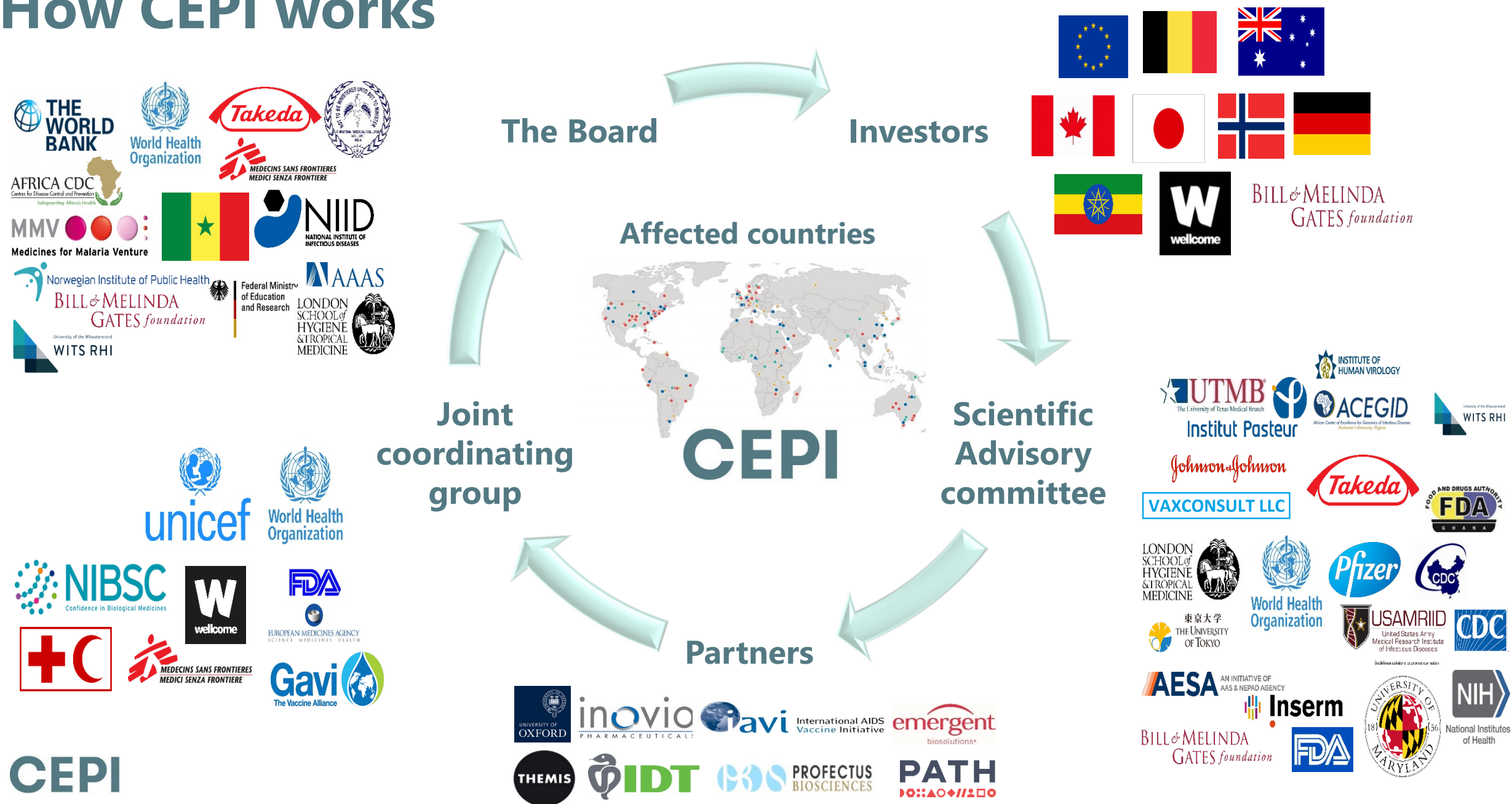
0.5M  
EUR

● Multiyear commitments

● One-year commitments

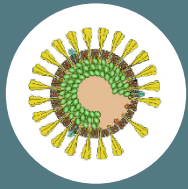


# How CEPI works

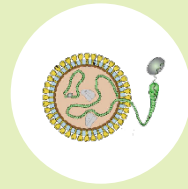


# CEPI's initial priority pathogens

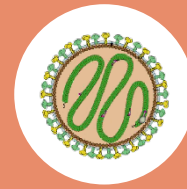
# MERS



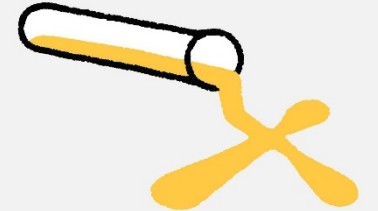
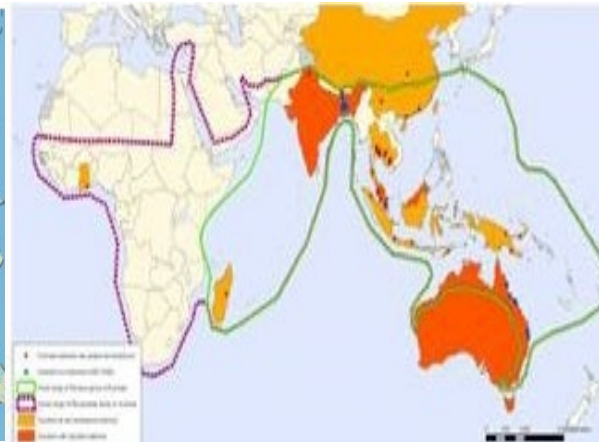
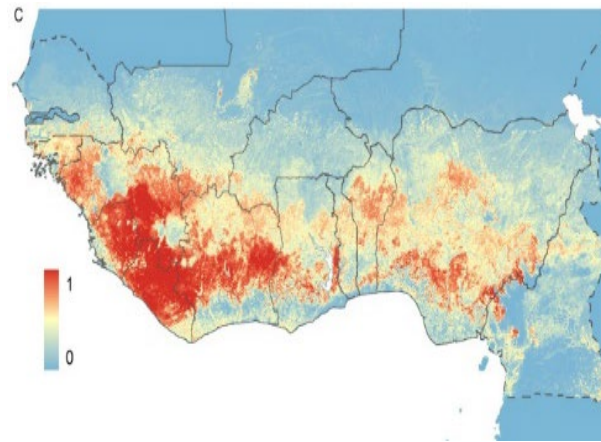
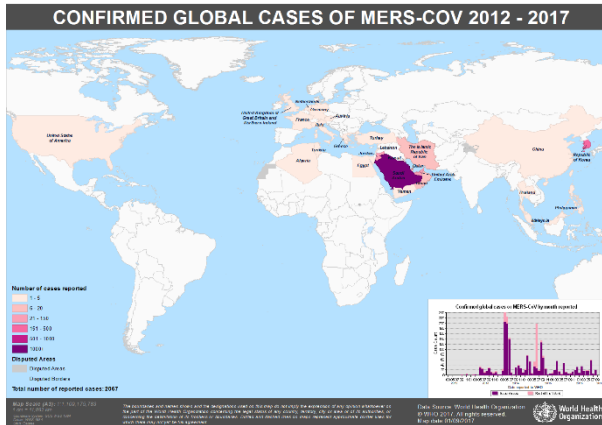
## Lassa



# Nipah



# Disease X





# Just in case vaccine: MERS, Lassa, Nipah

- More than 30 proposals received in first call for proposals
- Applications from:
  - Academic institutions, biotechs, large pharmaceutical companies, and Product Development Partnerships
  - Broad diversity in vaccine platform technologies
  - Proposals from North America, Europe, Africa, Middle East, South East Asia and Australia
- Rigorous process of selection, involving:
  - An objective review of proposals by experts and our Scientific Advisory Committee
  - Rigorous budget challenge and negotiation of the agreements to meet CEPI's budget, governance, and equitable access requirement

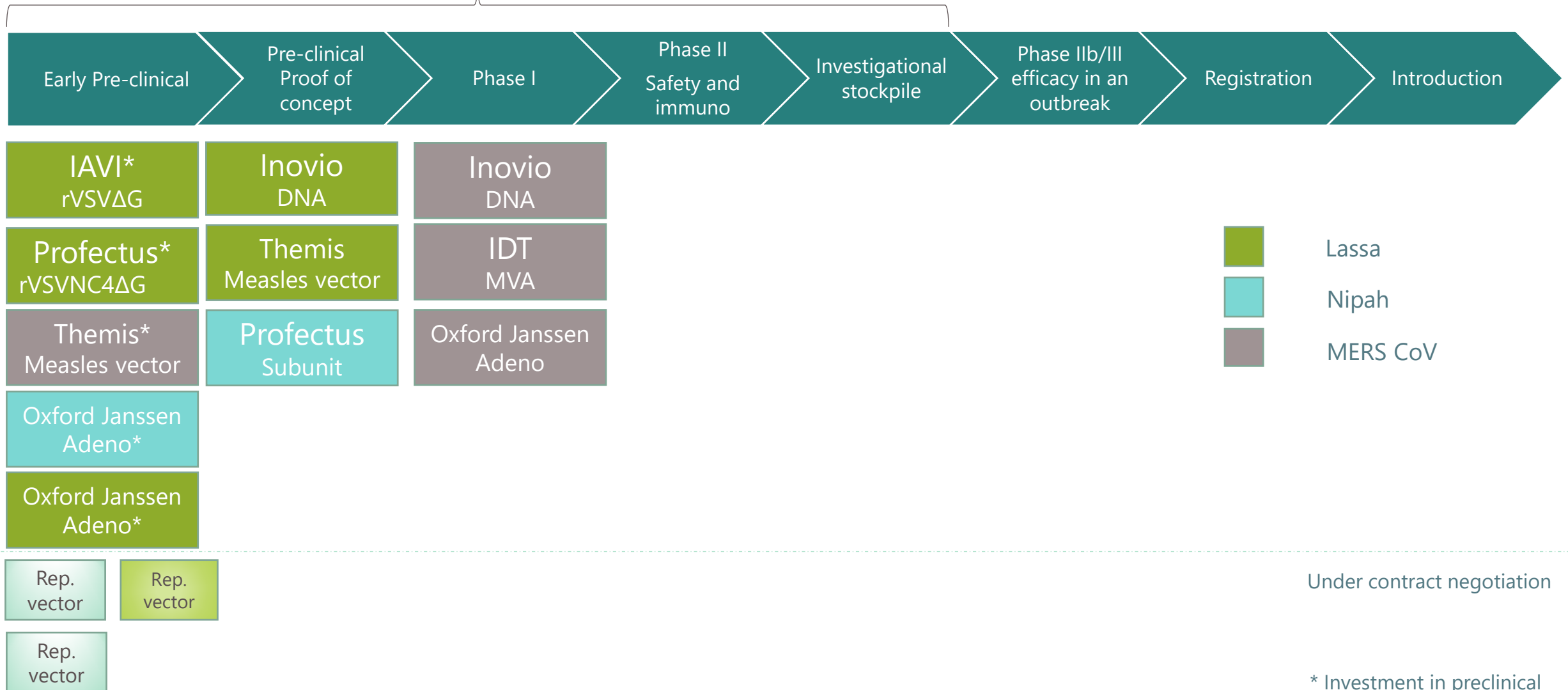
# Seven partnership agreements signed



Disease	Lassa and MERS	Lassa and MERS	Lassa	Nipah	Lassa	MERS	Lassa, MERS, and Nipah
Investment (up to)	\$37.5 M	\$56.0	\$54.9 M	\$25.0 M	\$36.0 M	\$36.0 M	\$19.0M

# CEPI priority pathogen portfolio

CEPI funds late preclinical through phase II S&I and investigational stockpile generation



# Just in time vaccines: platform technologies

CEPI supports development of vaccine platform technologies that can be rapidly deployed against known and newly emerging pathogens, to limit or prevent future outbreaks.

Projects must demonstrate:

- Safety and immunogenicity
- Validation of the platform using 3 pathogens
  - 2 with known correlates of protection & validated animal model;
  - 1 from the WHO priority pathogen list
- Manufacturing performance
  - 16 weeks for development of vaccine candidate for a new pathogen
  - 6 weeks to clinical benefit after 1st dose
  - 8 weeks to produce 100,000 doses after go-decision
- Funding decisions to be announced Q4, 2018

# Sustainable manufacturing

- Task force to analyse and propose solutions for sustainable manufacturing of EID vaccines
- The solution will be fully integrated and address the end-to-end supply chain to make vaccines available to affected populations, at an affordable price, when needed
- Look at both manufacturing technologies and economic and structural attributes to sustain the solution over time
- DCVMN will have a role to play — Atin Tomar is DCVMN representative in the working group





[www.cepi.net](http://www.cepi.net)



# ALL LIVES HAVE EQUAL VALUE

An introduction to the Bill & Melinda Gates Foundation

WE ARE IMPATIENT  
OPTIMISTS WORKING  
**TO REDUCE  
INEQUITY**  
AROUND THE WORLD





MAKING MARKETS  
**WORK FOR  
THE POOR**



# HOW WE DO WHAT WE DO



**Grantees and partners are at the center of our work**



**Together, we take risks, push for new solutions and harness the power of science and technology**



**This work requires support from governments, the private sector, communities, nonprofits and individuals**



# HOW WE WORK WITH OUR INDUSTRY PARTNERS

- Funding and expertise to reduced risks for new product R&D
- Access to existing and shaping of new markets
- Connections to our global health partner network
  - Academia
  - Government
  - NGOs
  - Regulatory & Policy
- Advocacy
- A pivotal role in improving global health



# WHAT KINDS OF INVESTMENTS DO WE MAKE?

## Grants

Funding for projects, products, and infrastructure

## Contracts

Support for activities that benefit the public or charitable sector

## Guarantees

Backstops on loans or loan portfolios, volume guarantees, and other guarantees

## Fund Investments

Investments in funds managed by external fund managers

## Direct Equity Investments

Investments to purchase shares of companies

## Loans

Low-interest loans to NGOs, financial institutions, or companies

# WHAT KINDS OF INVESTMENTS DO WE MAKE?

## Grants

Funding for projects, products, and infrastructure

## Contracts

Support for activities that benefit the public or charitable sector

## Guarantees

Backstops on loans or loan portfolios, volume guarantees, and other guarantees

## Direct Equity Investments

Investments to purchase shares of companies

## Fund Investments

Investments in funds managed by external fund managers

## Loans

Low-interest loans to NGOs, financial institutions, or companies

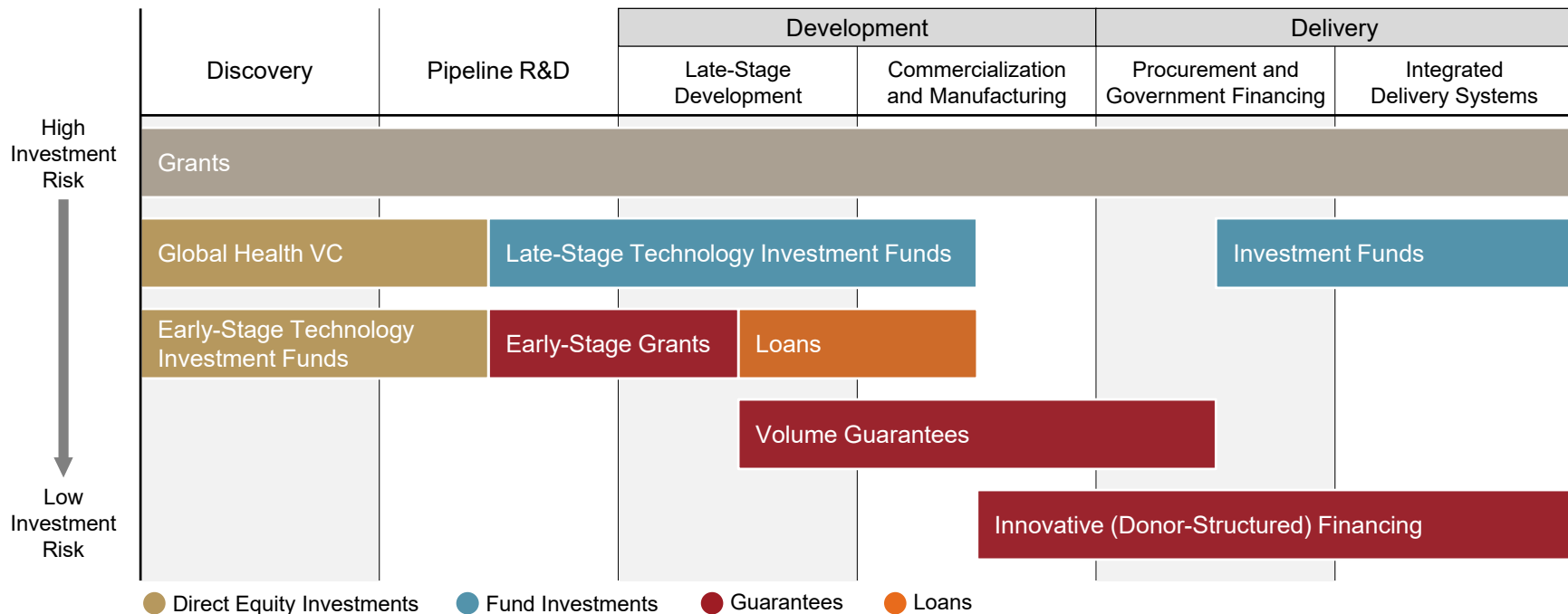
# GATES FOUNDATION STRATEGIC INVESTMENT FUND

**Alongside our Foundation Colleagues, we have invested \$1.9bn in 70+ companies since 2009 across a wide range of strategic priorities**

- We look for great technologies and great management teams who can apply their skills and resources to **combating infectious disease**
- We look for win-win partnerships, where increasing access to a global health product or service to **disadvantaged populations** is also **good for your business**
- We believe in the power of markets and invest across, directly and indirectly, across asset classes out of our current **\$2bn fund**
- We can invest along the innovation and delivery spectrum but our primary strategic focus is on **our priority diseases.**

# STRATEGIC INVESTMENTS IN GLOBAL HEALTH

We make different types of investments at each stage of the product development cycle for vaccines, therapeutics, and diagnostics.







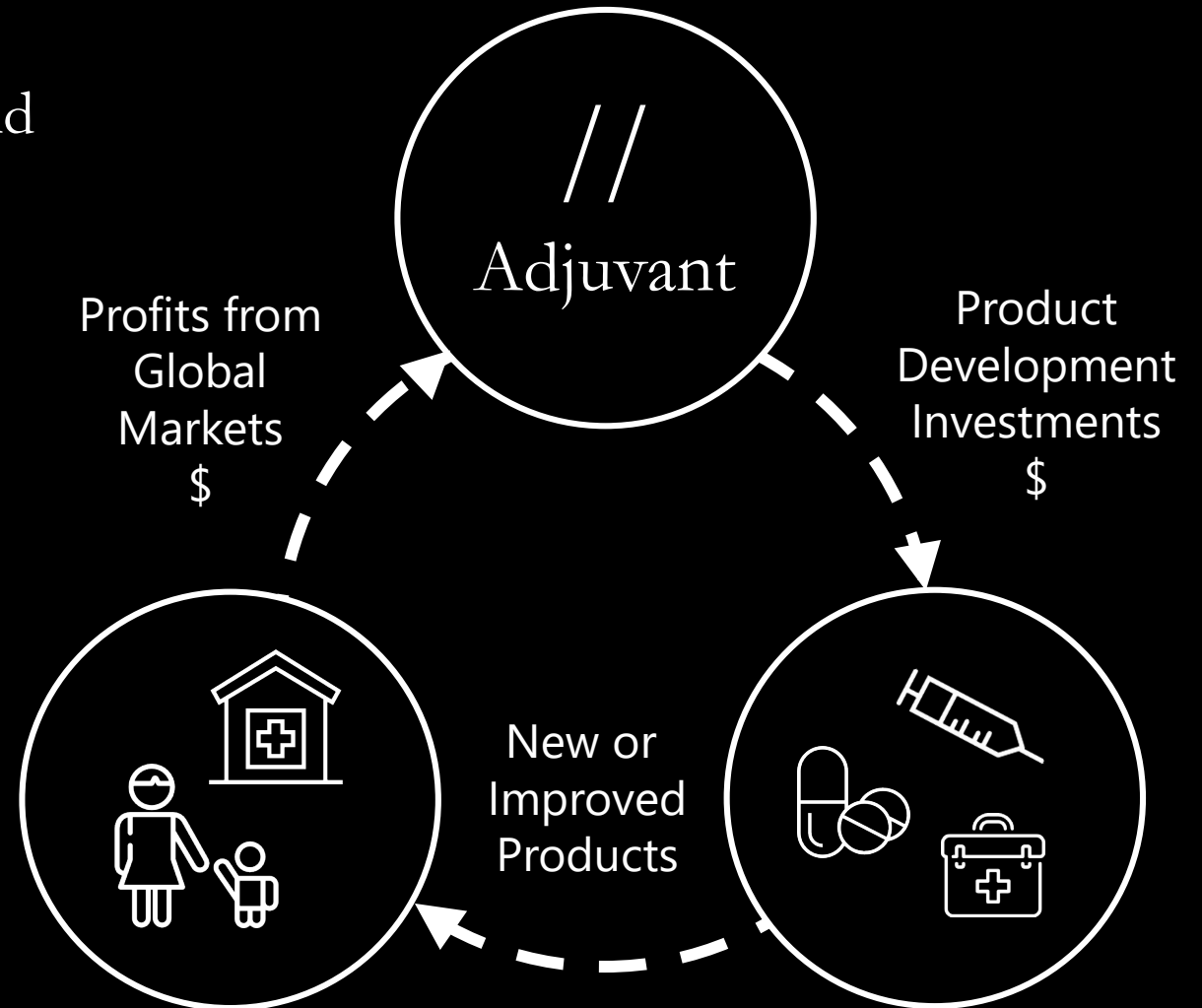
# // Adjuvant

The Global Health Investment Fund

# Adjuvant

The Global Health Investment Fund

Adjuvant is an ambitious life sciences investment fund established to support the development of drugs, vaccines, medical devices, and other technologies for public health challenges that disproportionately burden low-income countries



# Our Two Objectives

- / Earn a Fair, Risk-Adjusted Financial Return for our Investors
- / Improve Global Health



# What do we invest in?



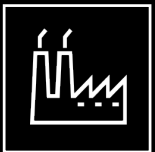
Adjuvant's mandate is to focus on  
**upstream innovations**



Novel Products



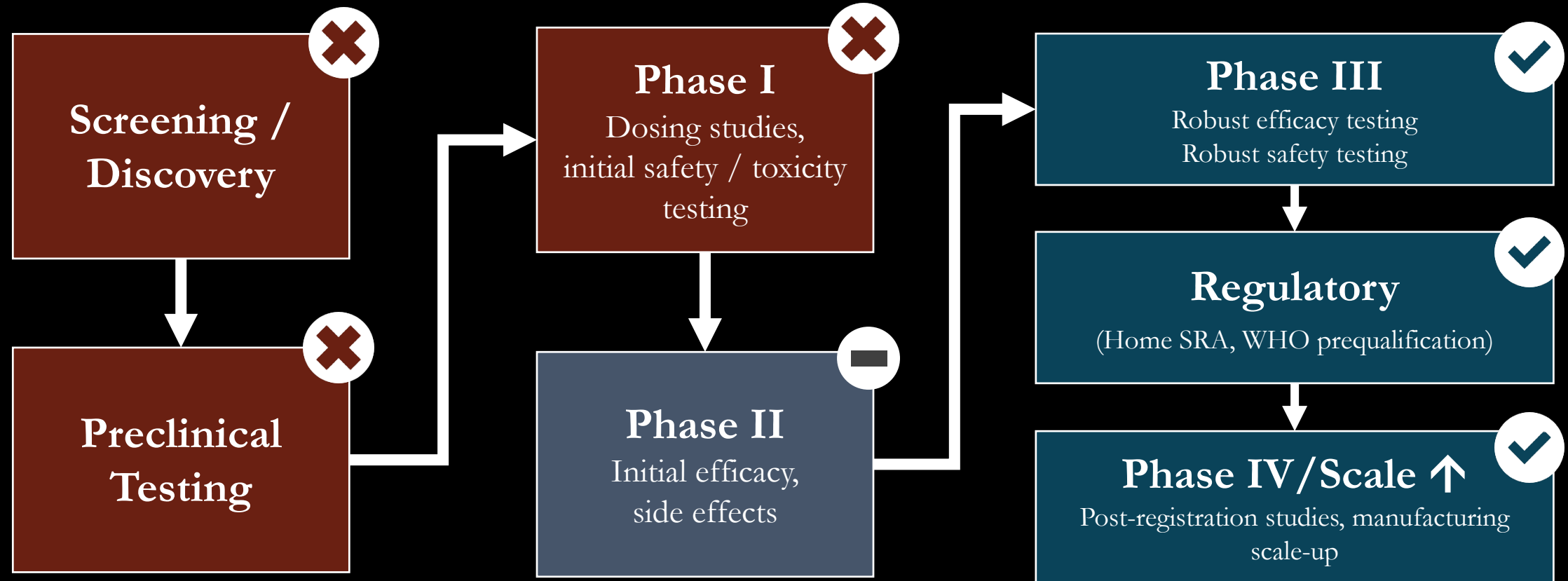
Reformulation of Existing  
Products



Manufacturing Scale-Up

- New Vaccines (Zika? HIV?)
- Reformulation for Pediatric Use
- New Presentations (Glass vs. Plastic?)
- Single Dose vs. Multi-Dose
- Label Improvements (Thermo-stability, Shelf-Life)
- Manufacturing Process Improvements
- New Market Registrations, WHO PQ

# Product Development Risk Tolerance



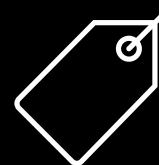
# | Case Study: Oral Cholera Vaccine



Adjuvant led a \$7.5 million investment in EuBiologics, a start-up biotech firm in South Korea.

/ A \$2.5 million loan to procure a plastic tube fill-finish machine

/ \$5 million to support the development of the company's oral cholera vaccine (Euvichol™)



Lower Price



More Supply



Improved Presentation

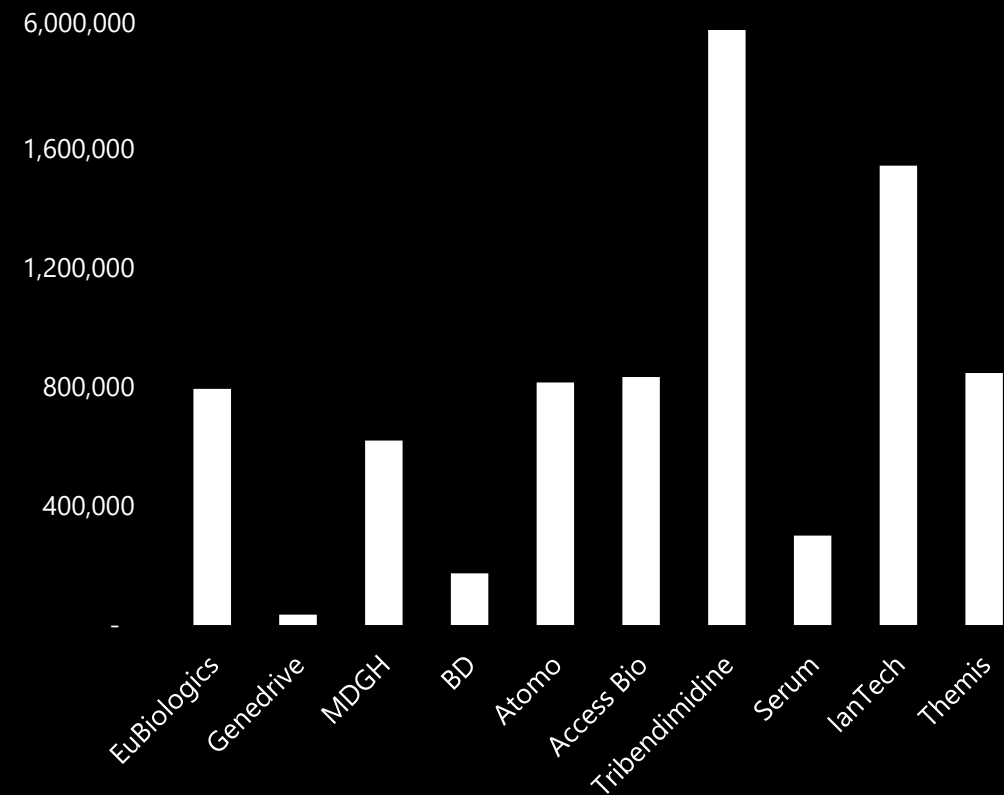
# Impact Measurement



All Adjuvant investees make **Global Access Commitments**, which typically include:

- / Registration in key markets
- / Tiered-pricing formulas or caps
- / Volume commitments

Annual Lives Improved at Scale





# | Team and Process

- / Based in New York City, invests globally
- / Investment structuring and diligence process is similar to traditional private equity funds
- / Investments subject to approval by dedicated social impact and investment committees
- / Approval process can take 3-6 months



# R&D Funding Outlook



The New York Times

## *Vaccines Against H.I. V., Malaria and Tuberculosis Unlikely, Study Says*

Unless the \$3 billion spent annually on research triples, the world may not be able to invent vaccines or rapid cures for many ills of the poor.

September 7, 2018



## *This fund seeks a traditional return and grantlike impact for global health R&D*

If GHIF proves it can work as a new type of sustainable financing structure, the fund could open the flood gates to bring in new sources of capital into public health development, experts told Devex.

May 25, 2017

A black and white photograph of a mountain range. In the foreground, a steep, rocky slope leads up towards a series of jagged mountain peaks. A cable car is visible, suspended from a cable that runs across the frame. The sky is filled with large, dramatic clouds. The overall tone is somber and majestic.

# // Adjuvant

The Global Health Investment Fund

Ideas? Questions? Please reach out to:  
Charlie Petty ([cpetty@adjuvantcapital.com](mailto:cpetty@adjuvantcapital.com))