

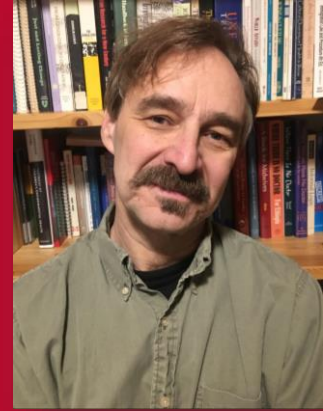
USAID's Support to Global Health Research and Development  
Webinar Series:  
**USAID's Approach to Global Health R&D**



**Dr. Matt Barnhart**  
Senior Medical and Scientific Officer  
USAID Bureau for Global Health



**Dr. Mark Feinberg**  
President and CEO  
International AIDS Vaccine Initiative  
(IAVI)



**Dr. Troy A. Jacobs**  
Senior Medical Advisor  
USAID's Office of Maternal Child  
Health and Nutrition



# Global Health Research and Development at USAID

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March 7, 2018

Matthew Barnhart MD, MPH

Senior Medical and Scientific Officer

USAID Bureau for Global Health

MOE-2013

# USAID Has A Long History Supporting Global Health Research and Innovation

## Oral Rehydration Solution/ Zinc

- Low cost, life-saving treatment
- USAID supported pivotal R&D
- Engaged manuf. for supply+global introd.
- Saved lives of over 1.5 million children (introd. in 10 of 15 highest burden countries)



## Vitamin A

- USAID had key role in dissem/ adoption
- Distribution costs 2-3 cents per capsule
- Reduced child mortality 23-34%
- More than 60 nations have vitamin A supplementation programs



## Insecticide Treated Nets

- USAID large-scale efficacy trials across Africa
- Reduced under 5 mortality by 20%
- Reduced clinical malaria by 40-50%
- Scaled up throughout Africa



## Contraceptive Implants

- USAID funded Phase III clinical trials for FDA approval and supported introd.
- Implants widely used; one of the fastest growing contraceptive methods

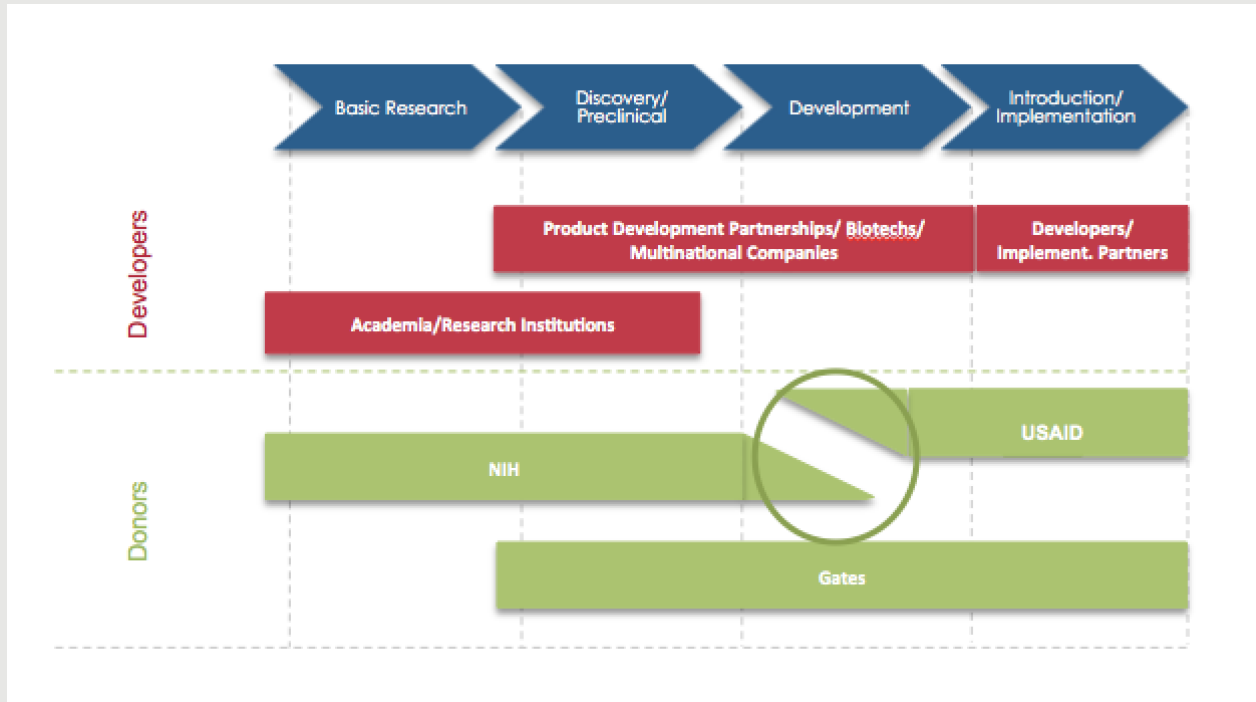


## AMTSL

- High impact practice to prevent post partum hemorrhage
- USAID leadership role assessing utilization of AMTSL and influencing WHO policy adoption
- Scaled up around the world



# Coordinating R&D Investments Across Different Stages



# Stakeholder Consultations to Inform GH Research Strategy Development

## Non-USG Stakeholders

Consortium of Universities in Global Health

DFID

Bill & Melinda Gates Foundation

Health Systems Global, John Hopkins  
University

LMIC Partnerships (Asia, Bangladesh)

PATH

Policy Cures Research

Treatment Action Group

WHO

Respondents listed here were interviewed  
Additional feedback came via online survey

## USG Stakeholders

CDC

Fogarty International Center, NIH

NIAID, NIH

Office of Population and Reproductive Health,  
USAID

PEPFAR

## Group Consultations

R&D Council, USAID

Former USAID Employees

Center for Accelerating Innovation and Impact  
(CII)

Internal USAID Staff Discussion

Field Advisory Council

# Key Themes From Stakeholder Consultations

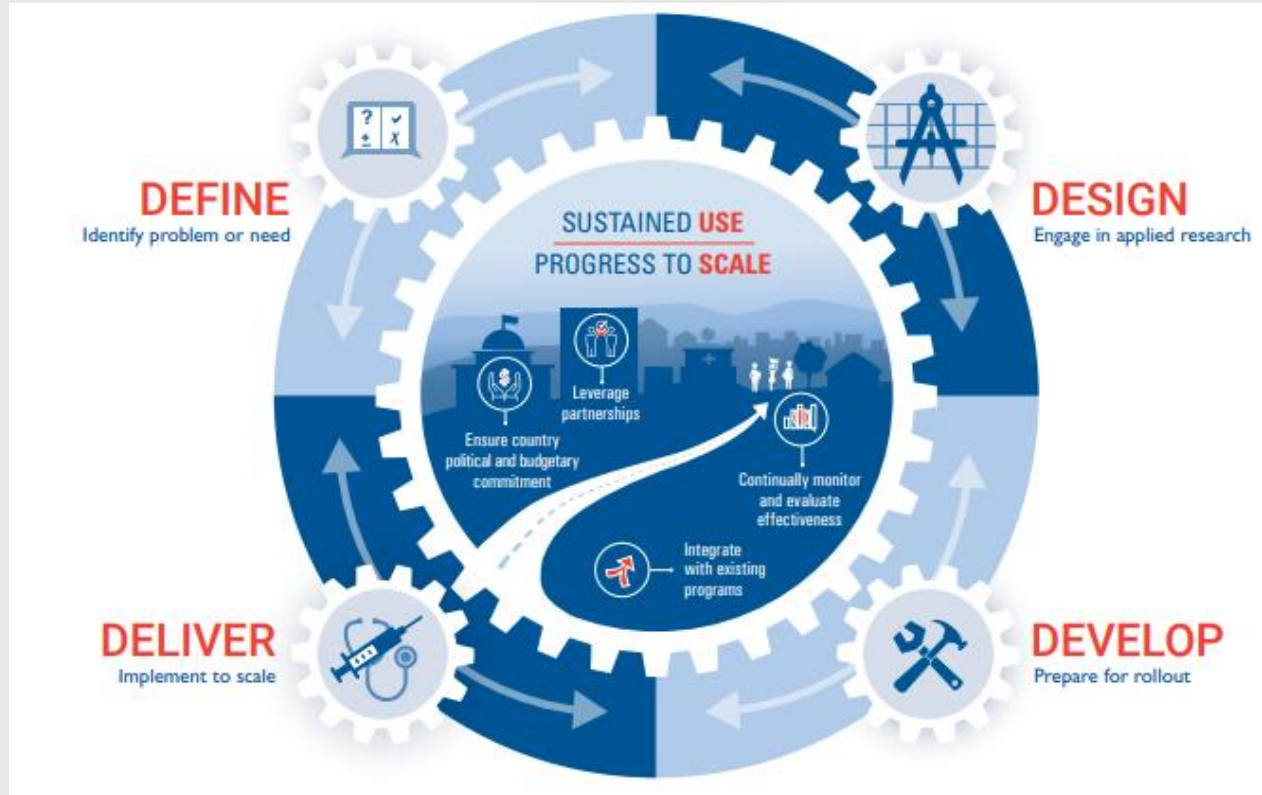
Three key themes emerged from respondents on USAID's unique role in GH research:

1. Implementation science is a critical niche for USAID.
2. USAID's comparative advantage is the strong in-country presence and connection with local communities.
3. There is a critical need for investments in local research systems. Research should start locally and investments should be made in local institutions in order to be sustainable.





# USAID's "Research to Use" Approach



# Vision, Mission, and Goals of USAID Global Health R&D Strategy

## Vision

Research and innovation are translated into action to improve health, well-being, and resilience of people around the world.

## Mission

To support collaborative research from the local to the global level, generating evidence on interventions, policies, approaches, and technologies that increase the impact of health programs globally.

**To achieve its global health research and development mission, USAID will focus on three interrelated goals:**



### 1. HEALTH TECHNOLOGIES, TOOLS, AND APPROACHES

To accelerate the development, introduction, scale-up, and sustained use of health technologies, tools, and approaches to address critical unmet needs and emerging challenges.



### 2. IMPLEMENTATION SCIENCE

To identify, generate, and apply evidence to influence the adoption, implementation, and health impact at scale of priority life-saving health and development interventions.



### 3. RESEARCH AND DEVELOPMENT SYSTEMS

To strengthen the capability and resilience of people, systems, and partnerships to conduct research and utilize results to improve health outcomes.



# For More Information on USAID-Supported GH R&D

To download a copy of USAID's latest Global Health-Related Research and Development Report to Congress and 5-year strategy please visit:

<https://www.usaid.gov/what-we-do/global-health/cross-cutting-areas/research>





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Thank you for joining!

Matt's email address:  
[mbarnhart@usaid.gov](mailto:mbarnhart@usaid.gov)



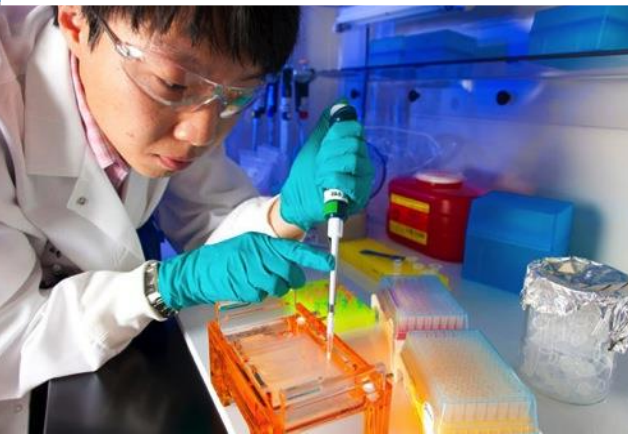
**USAID**  
FROM THE AMERICAN PEOPLE



# IAVI and USAID

## Advancing HIV Vaccine Development and Africa-Centered Science

Mark Feinberg MD, PhD | March 7, 2018  
CEO, International AIDS Vaccine Initiative (IAVI)



# Getting to the End of AIDS



- Number of new infections continues apace (**1.8 million in 2016**).
  - Approximately two thirds of the world's new infections occur in Africa.
  - One-third of new infections occur in people aged 15-24.
- Still the leading cause of death among women of reproductive age.

***Demographic trends, major challenges to reaching those who are still not in treatment, and potential difficulties in maintaining large scale treatment programs over decades threaten tremendous progress made to date.***



# A Vaccine is Our Best Hope to End AIDS

**Treatment alone has never ended an epidemic. Only vaccines have. We need a vaccine to end AIDS.**

- Without a vaccine, we may actually see increases in infection rates.
- Vaccines are far less expensive to administer than daily, lifelong drug treatments.
- Rising resistance to life-saving HIV drugs threatens to compromise progress.
- A vaccine will bolster U.S. national security by restoring stable economies and social structures in countries hardest hit by AIDS.



# USAID Support of HIV Vaccine Development and African Scientific Leadership

For the last 15 years, USAID has fostered innovative HIV vaccine development and leadership among African scientists.

- Current agreement between USAID and IAVI is called **ADVANCE: Accelerating Development of Vaccines against AIDS and New technologies to Combat the AIDS Epidemic.**
- Vision for **ADVANCE**: An African-centered model of global partnership, to accelerate the design and development of effective, accessible HIV vaccines for use throughout the world.





# The ADVANCE vision for expediting HIV vaccine development

The work needs to begin and end with the individuals and communities at risk, and engage and build African scientific capacity at every stage



# IAVI's Role: Linking Global Partners to Build Local Capacity and Accelerate Scientific Progress

## Discovery Laboratories

- Neutralizing Antibody Center (Scripps, La Jolla)
- Design and Development Lab (IAVI Brooklyn)
- Human Immunology Lab (Imperial College, London)
- Translational Health Science and Technology Institute (Delhi)

## VxPDC

- Translational development



## Clinical Research Network and Reference Labs

- 8 clinical facilities in 5 countries; U.S. and EU partners
- Community engagement
- Human Immunology Lab (Imperial College, London)

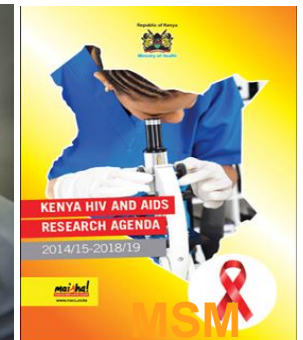
## Advocacy

- Evidence-based advocacy to help maintain HIV/AIDS funding as a global priority

# The Impact of Sustained USAID Support in Africa

## A highly valued network for HIV vaccine and related research

- Strengthened research and capacity for HIV vaccines and other health technologies
- Uncovered hidden epidemics
- Engaged policy makers and political leaders
- Strengthened health services and access and improved policies
- Positively impacted communities most at risk
- Built new generation of scientists and research institutions



# Out of Africa: How Insights Emerging from Scientific and Community Engagement in Africa Have Transformed the HIV Vaccine Field

- The solution of the three-dimensional structure of the HIV Envelope glycoprotein overcame perhaps the most vexing and important scientific challenge to HIV vaccine development
- Moving from empiricism to testable hypotheses
- USAID-supported efforts to build scientific capacity in Africa generated insights, specimens, and reagents that have had tremendous benefit across the broader HIV field
- These insights continue to be greatly amplified by major investments and scientific contributions of other key research organizations – including the NIH, with the cutting-edge research at the intramural NIH Vaccine Research Center (VRC) and the extramural Centers for HIV/AIDS Vaccine Immunology (CHAVI) and the European Union (Horizon 2020 programs)

# The Impact of Sustained USAID Support in Africa

## HIV infection research providing information to inform vaccine design and prevention research

Samples from over 2,738 HIV-infected volunteers from 12 countries around the globe



Charlotte Raymond Photography

IMPACT

261

Identification of 261 new HIV-neutralizing antibodies\*



40,000+

Samples shared



100+

Peer reviewed publications



30

Active research projects addressing key HIV challenges

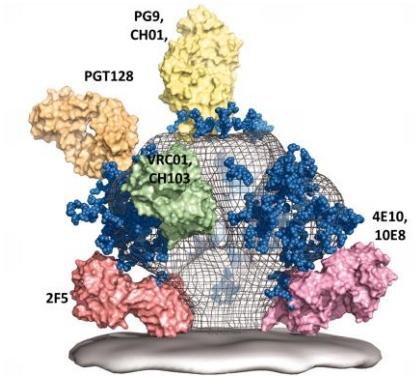
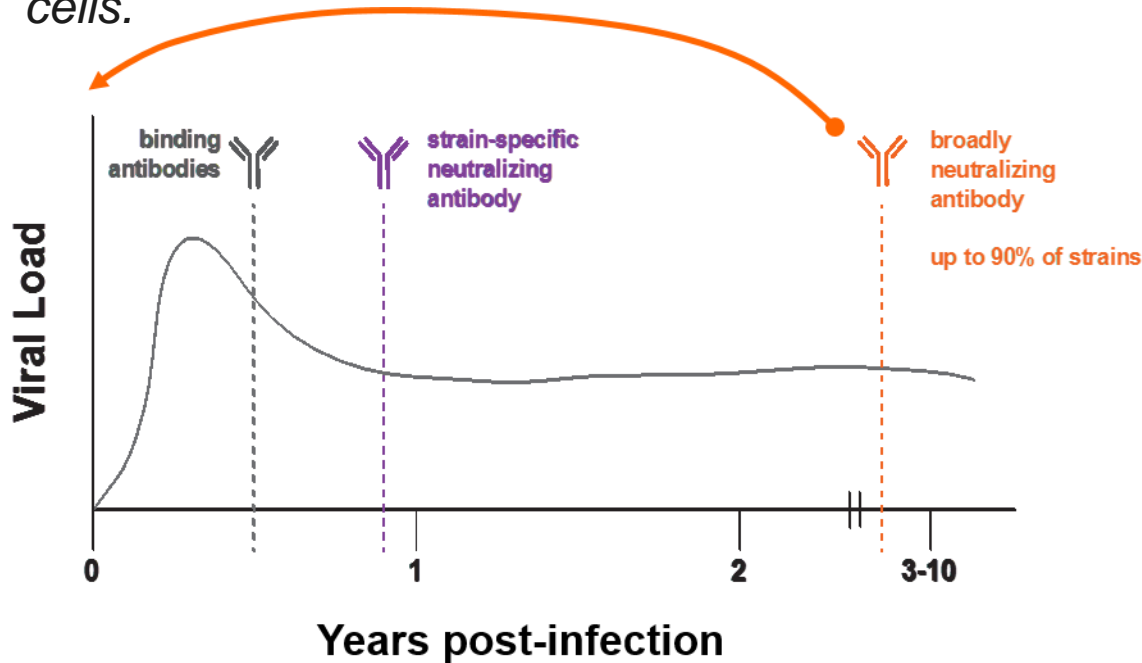


***\*including 3 of the 5 most promising antibodies now in clinical trials***

# The Impact of Sustained USAID Support in Africa

## Broadly Neutralizing Antibodies (bNAbs) Case Study

*These antibodies disable multiple HIV viral strains by binding to sites on the virus, which prevent HIV from infecting target cells.*



### bNAbs are important:

- They inform *immunogen design*
- They are *prevention tools* in their own right



# The Impact of Sustained USAID Support in Africa

Scientific leadership and laboratory infrastructure in Africa to accelerate R&D for HIV vaccine and respond to other emerging infectious diseases



Promotion  
of gender  
equality



Increased  
scientific  
local  
leadership



Build  
capacity to  
respond to  
epidemics



Improved  
health and  
economies



Sustainable  
local  
research  
infrastructure



Accelerated  
in-country  
research

# The Impact of Sustained USAID Support in Africa

Engagement of local communities to support clinical trials, national policies, and the country ownership and leadership goals of PEPFAR



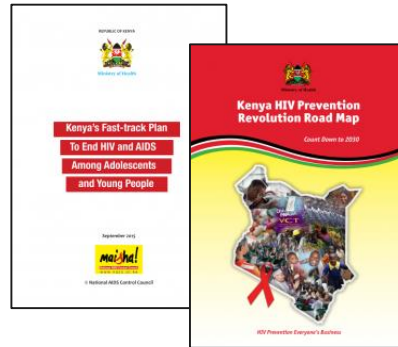
Strengthening support of current and future vaccine trials

**85-90%**

retention in epidemiological and vaccine trials



Informing national policies



Facilitating national investment in HIV research and health infrastructure

**500,000**

people received VCT and health care referrals

# The Impact of Sustained USAID Support in Africa

Complement U.S. government investments in HIV/AIDS and support key principles of transparency, accountability, and partnerships

- IAVI and its partners are helping PEPFAR reach its goal of ending the epidemic through the discovery and testing of vaccines and other prevention tools.
- ADVANCE complements investments in HIV R&D by NIH and the Department of Defense by bringing African institutions and scientists closer to the center of the larger search for an AIDS vaccine.



# Broad Benefit of Sustained USAID HIV R&D Support in Africa

Opportunity to sustain investment in Africa scientific research excellence and ensure local capacity to respond to new emerging infectious disease threats

**Vision:** Epidemic outbreaks of infectious diseases will be managed at an early stage to prevent them from becoming public health emergencies that result in loss of life, undermine social and economic development, and emerge into humanitarian crises.



BILL & MELINDA  
GATES foundation



WORLD  
ECONOMIC  
FORUM



## Status:

- CEPI has now transformed from a concept into a functioning global non-profit with over \$620 million in funding and offices in Norway, the U.K., India, and now the U.S.
- They have launched two calls for proposals for three priority disease areas, MERS, Lassa, and Nipah, which include: 1) candidate vaccine development against these priority diseases; 2) development of platforms that can be used for rapid vaccine development against unknown pathogens. They also intend to continue to make investments to help “finish the job” on Ebola.

## What's at Stake?

**~5,000**

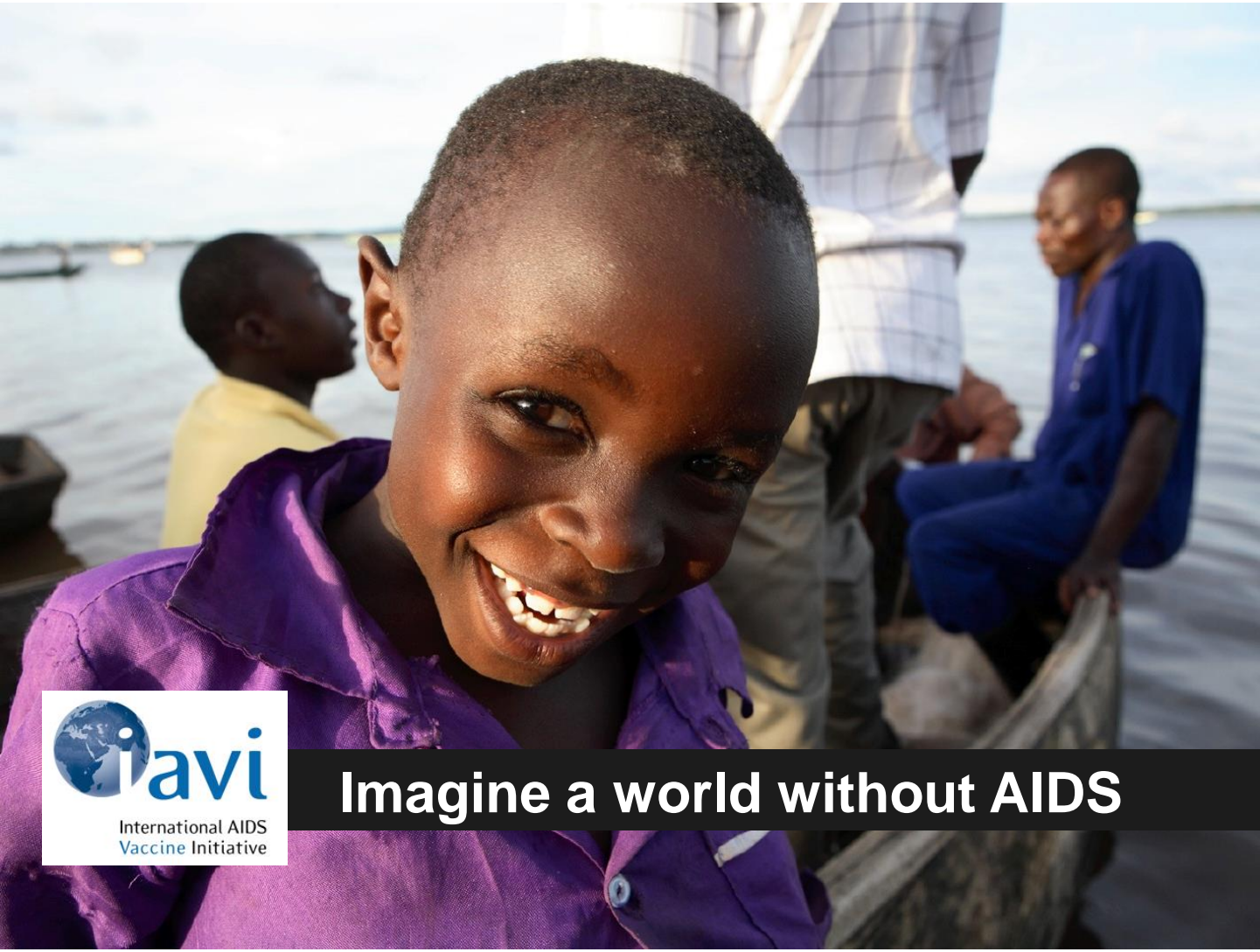
**people infected with HIV every day**

# The Opportunities, Obligations and Challenges Ahead



**We need to develop effective models to ensure broad, sustainable, and affordable access to efficacious HIV vaccines and prevention technologies**





International AIDS  
Vaccine Initiative

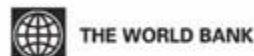
**Imagine a world without AIDS**



*IAVI gratefully acknowledges the generous support provided by the following major donors*



BILL & MELINDA  
GATES foundation



MINISTRY OF FOREIGN AFFAIRS OF DENMARK  
DANIDA | INTERNATIONAL DEVELOPMENT COOPERATION



सत्यमेव जयते  
Ministry of Science & Technology  
Government of India

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*And many other generous individuals from around the world*

*As of January 2018*



# Why Implementation Research & Delivery Science Matters

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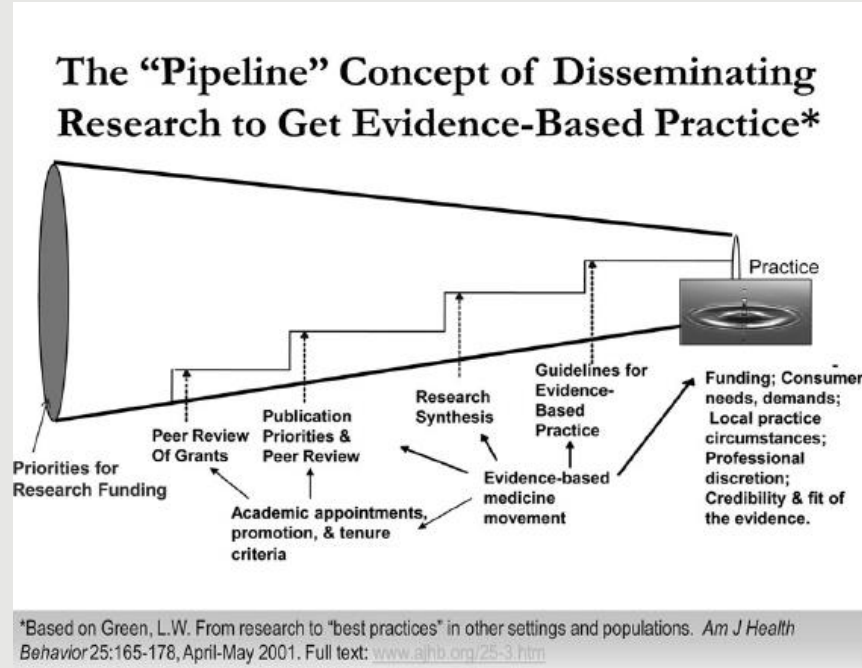
Troy A. Jacobs, MD, MPH, FAAP

Research & Policy Division

Office of Maternal Child Health & Nutrition

March 7 2018

# 17 year lag from research to practice is unacceptable



- “Many interventions found to be effective in health service research studies fail to translate into meaningful patient care outcomes across multiple contexts. In fact, some estimates indicate that two-thirds of organizations' efforts to implement change fail.”
- Damschroder LJ et al. *Implement Sci* 2009; 4:50

# Implementation challenges we're trying to solve

- Policy makers define strategies, but often have limited influence on how they are implemented
- Strategies often can achieve their objectives but may produce unintended & unpredictable consequences
- Many health policies aim to serve the poor & vulnerable but rarely show HOW they have improved services for disadvantaged
- Equity in implementation continues to be elusive
- External validity limitations of “best practice” unknown





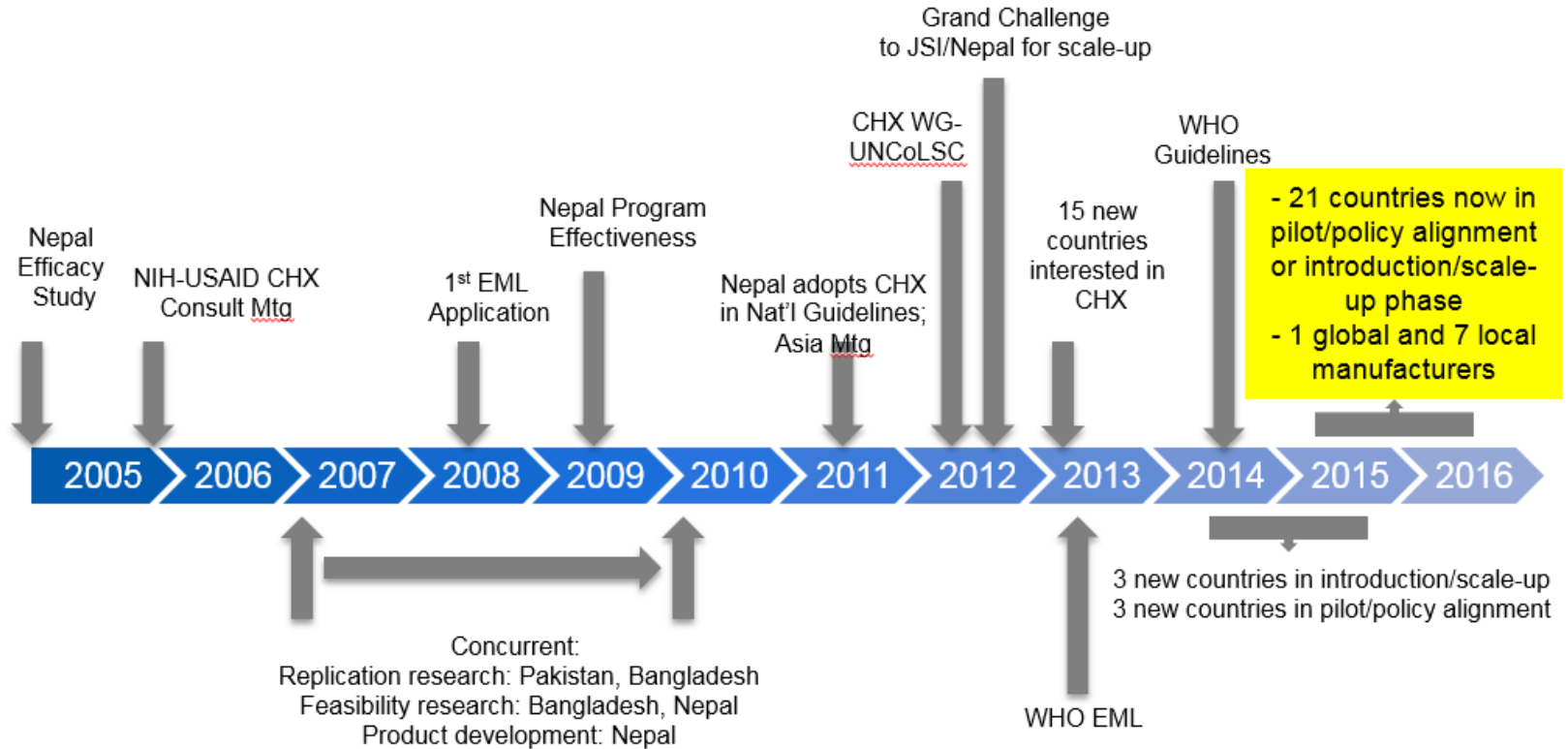
# How Strategies Are Implemented Matters



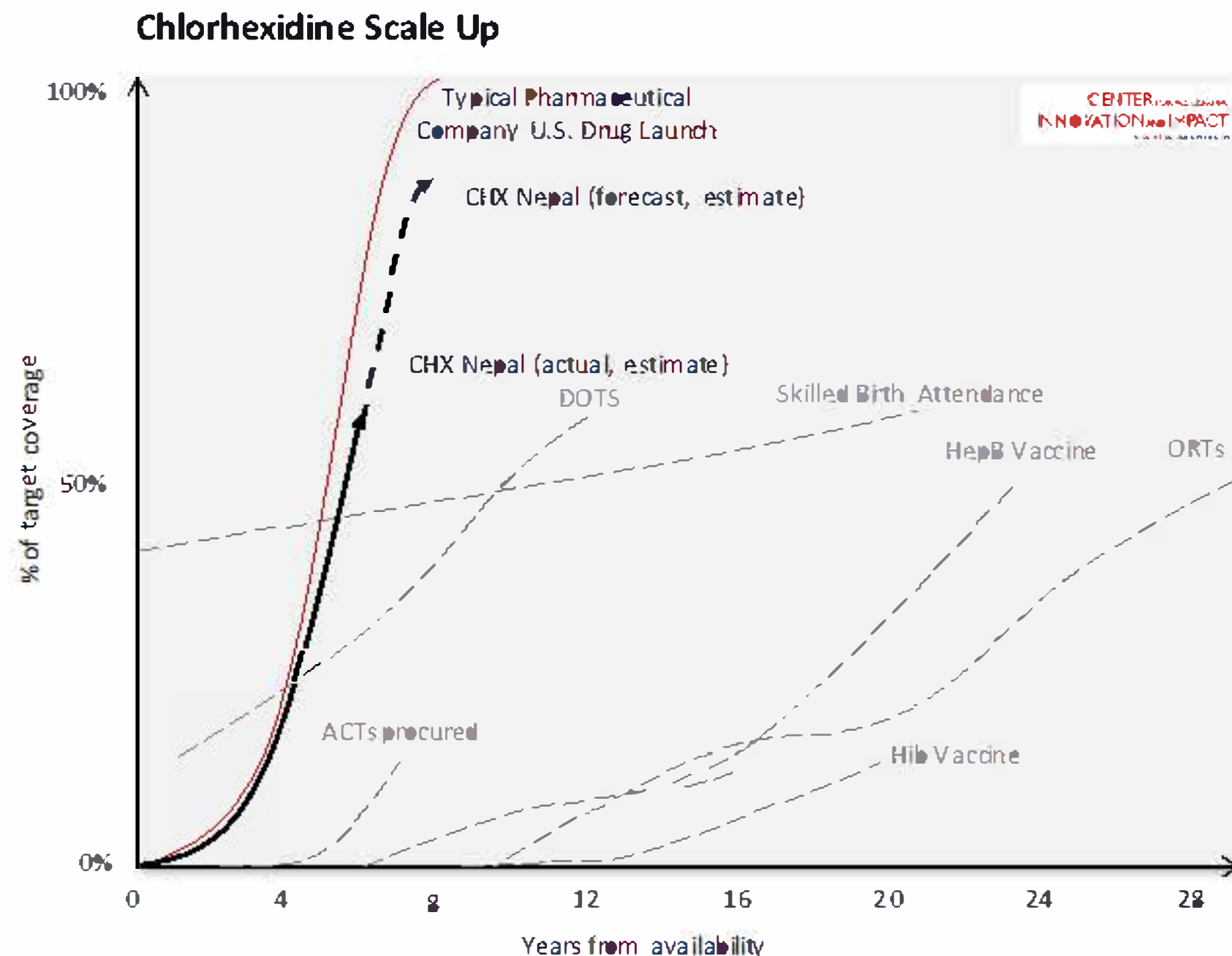
	Randomized Controlled Trials Odds ratio	All “Adequate” Studies Odds ratio
Community coordination and organization	..	4.6**
Local adaptation of the intervention	9.3	4.3 *
Broad-based support of various stakeholders	..	3.9 *
Consultation and engagement of powerful interest groups	2.8	3.8**
Flexibility and modification through stakeholder feedback	..	3.4 *
Representation from powerful interest groups	2.4	3.0 *
Constraints reduction plans	6.7	2.7 *

\* Pvalue<0.05; \*\* Pvalue<0.01

# Timeline for Chlorhexidine



# Scaling chlorhexidine in Nepal provides early exemplar and lessons learned...



### Scale-up Implications

Support from Saving Lives at Birth and strong partnership with MOH provided needed focus and funding in Nepal



- ~8,000 lives saved to date

USAID and the Chlorhexidine Working Group have paved the way for global introduction and scale

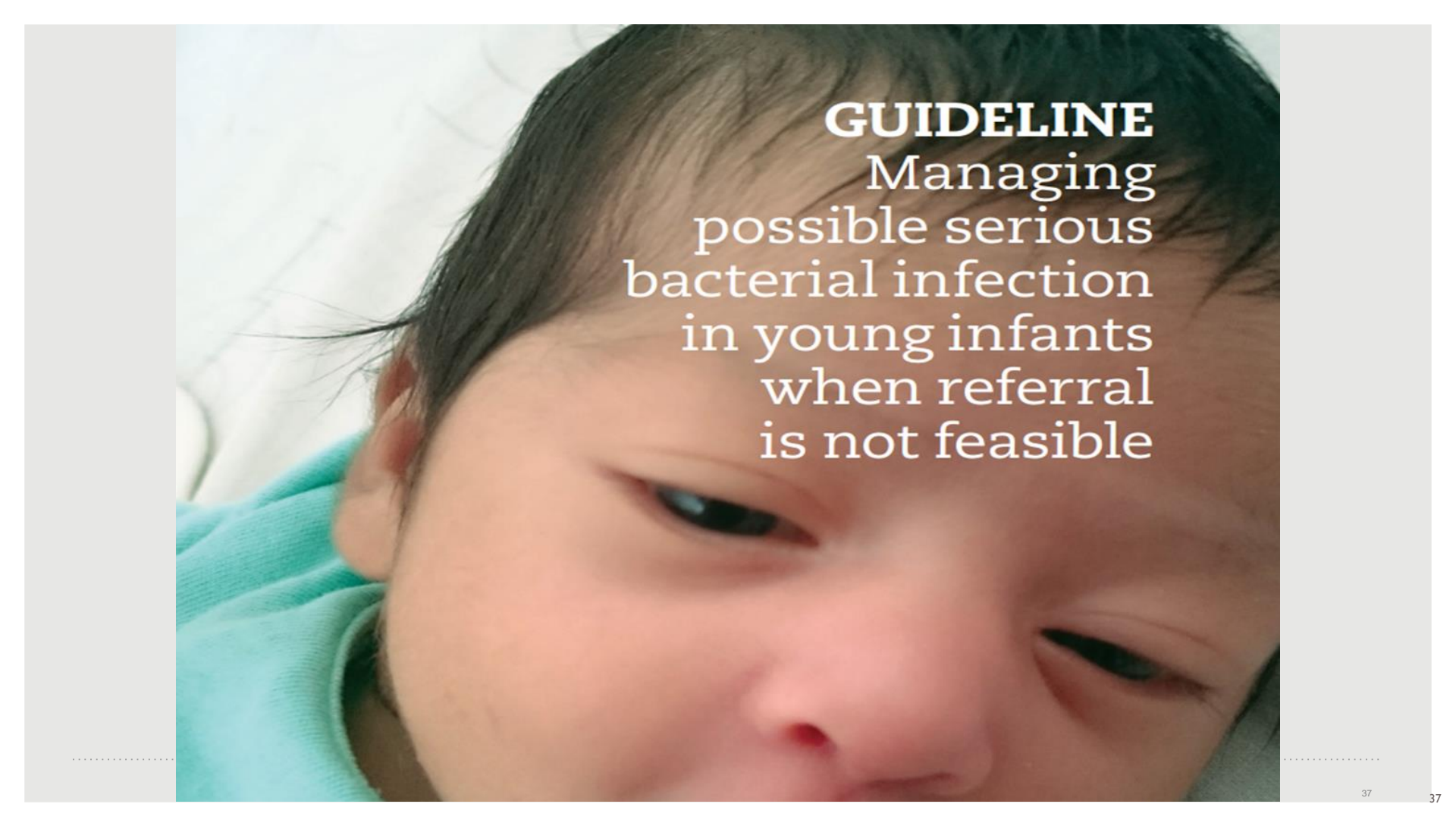
- Replicating rapid scale-up in other countries can have significant impact: (~65M live births in 24 priority MCH countries)
- ~300,000 lives saved per year from use of CHX in India and Sub-Saharan Africa

**Nepal scale-up tracking that of typical US drug launch... but continued funding and focus is critical to achieving and sustaining scale**

**Hospitalization may not be possible for 80-90% of newborns with Possible Serious Bacterial Infections (PSBI) or “sepsis” – a known killer of newborns**



- Hospital not available/accessible
- Other barriers to hospitalization

A close-up photograph of a newborn baby's face, showing the eyes, nose, and mouth. The baby has dark hair and is wearing a light blue garment. The background is a light-colored, textured surface. The text is overlaid on the right side of the image.

## **GUIDELINE**

Managing  
possible serious  
bacterial infection  
in young infants  
when referral  
is not feasible

# Policy Adoption in Bangladesh - Process



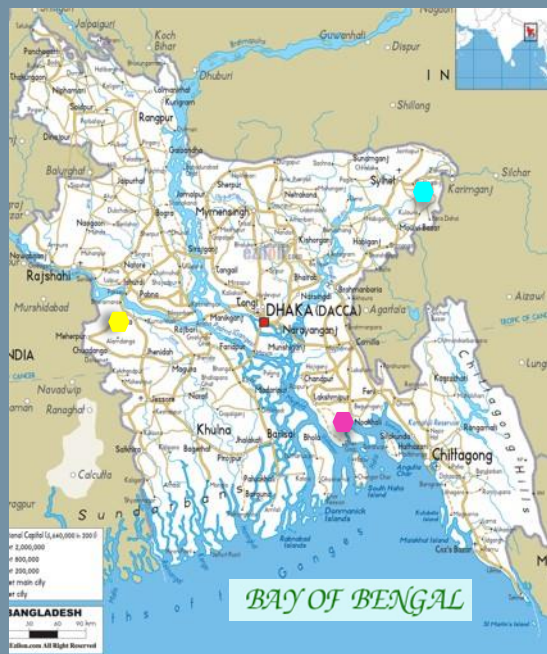
PSBI: Possible serious bacterial infection

## Implementation research for operationalization of national guidelines: - In three different settings -

**Kushtia-**  
Implementation  
support by SNL  
Evaluation by  
icddr,b

**Laxipur-**  
Implementation  
support by MaMoni  
HSS  
Evaluation by JHU

**Sylhet-**  
Implementation  
support by and  
Evaluation by JHU



- Somewhat variable implementation
- Different demand generation approaches
- Different evaluation partners
- Using largely common evaluation framework



## Research Question and Objectives

What are the **Coverage, Quality and Operational challenges** of managing young infants at first level facilities as per the National Sepsis Management Guideline of Bangladesh?

### Coverage

- Knowledge and awareness
- Care seeking practice

### Quality of care:

- Provision: availability and readiness
- Process: adherence
- Outcome: treatment failure

### Operational challenges:

- Care seeking
  - Adherence
  - Develop and test overcoming strategies
- 
- **Process documentation:**
    - Capacity development,
    - Health systems strengthening,
    - Community follow up and community mobilization
    - Data-driven decision making process



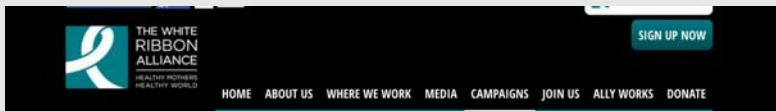
# Respectful Maternity Care

- Physical Abuse
- Undignified Care
- Lack of informed consent
- Lack of confidentiality
- Discrimination
- Abandonment of Care
- Detention in Facilities



Source: Bowser and Hill, Traction Project 2010

# Respectful Maternity Care



## RESPECTFUL MATERNITY CARE

Respectful maternity care (RMC) is a universal human right that is due to every childbearing woman in every health system. Women's experiences with maternity caregivers can empower and comfort them, or inflict lasting damage and emotional trauma. While many interventions aim to improve access to skilled birth care, the quality of relationships with caregivers during maternity care has received less attention. Evidence suggests that in countries with high maternal mortality, the fear of disrespect and abuse that women often encounter in facility-based maternity care is a more powerful deterrent to use of skilled care than commonly recognized barriers such as cost or distance.



In 2011, WRA launched a global campaign to promote a clear standard for RMC that is rooted in international human rights. Working with other global organizations, WRA produced a ground breaking consensus document, the *Respectful Maternity Care Charter: the Universal Rights of Childbearing Women*, which demonstrates the legitimate place of maternal health rights in the broader context of human rights. In 2015, White Ribbon Alliance continues to build visibility and coverage of this issue, and envisions a world in which a woman's right to RMC is embedded at all levels of maternal health systems.



Since its development, the RMC Charter has been translated into eight languages and is being used globally to talk about the problem of disrespect and abuse during maternity care. It is also being used as a tool to educate health workers about maternity care and human rights, and to raise awareness of the problem in a way that avoids blaming and shaming. To support this effort, WRA produced a range of materials that include guidebooks, infographics, films, and presentations to help increase visibility of this issue. Once the Charter gained momentum, it was endorsed by the World Health Organization, the International Federation of Gynecology and Obstetrics, and the International Confederation of Midwives.

## WHO Quality of Care Initiative



THE WHITE  
RIBBON  
ALLIANCE  
HEALTHY MOTHERS  
HEALTHY WORLD

## RESPECTFUL MATERNITY CARE CAMPAIGN UPDATE April 2015

White Ribbon Alliance (WRA) formed over a decade ago to give a voice to the women at risk of dying in childbirth. WRA rapidly grew, as thousands of individuals and organizations joined the network, speaking as one voice, identifying problems in their own communities and finding solutions collaboratively at a national level across Africa and Asia. Our mission is to inspire and convene advocates who campaign to uphold the right of all women to be safe and healthy before, during and after childbirth. We help citizens recognize their rights and catalyse a global movement for respectful maternity care for every woman, everywhere.

### BACKGROUND

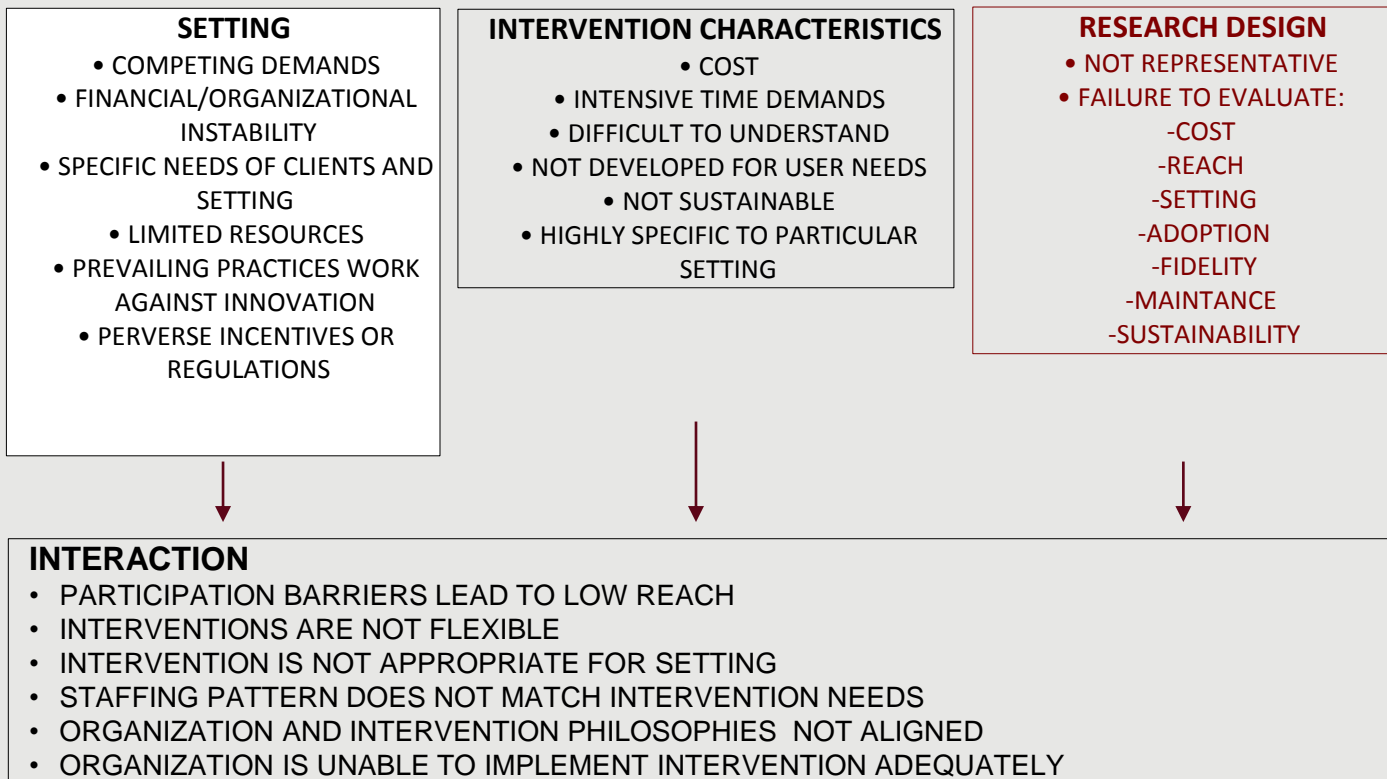
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RMC-Update.pdf



The Respectful Maternity Care Charter: The Universal Rights of Childbearing Women can be found on [www.whiteribbonalliance.org/campaigns/respectful-maternity-care/](http://www.whiteribbonalliance.org/campaigns/respectful-maternity-care/)

# Design and Structural Barriers of Research to Use



**We need to focus on the “How” of implementation as a regular business practice**

# The Promise of Implementation Research, Sept 2014

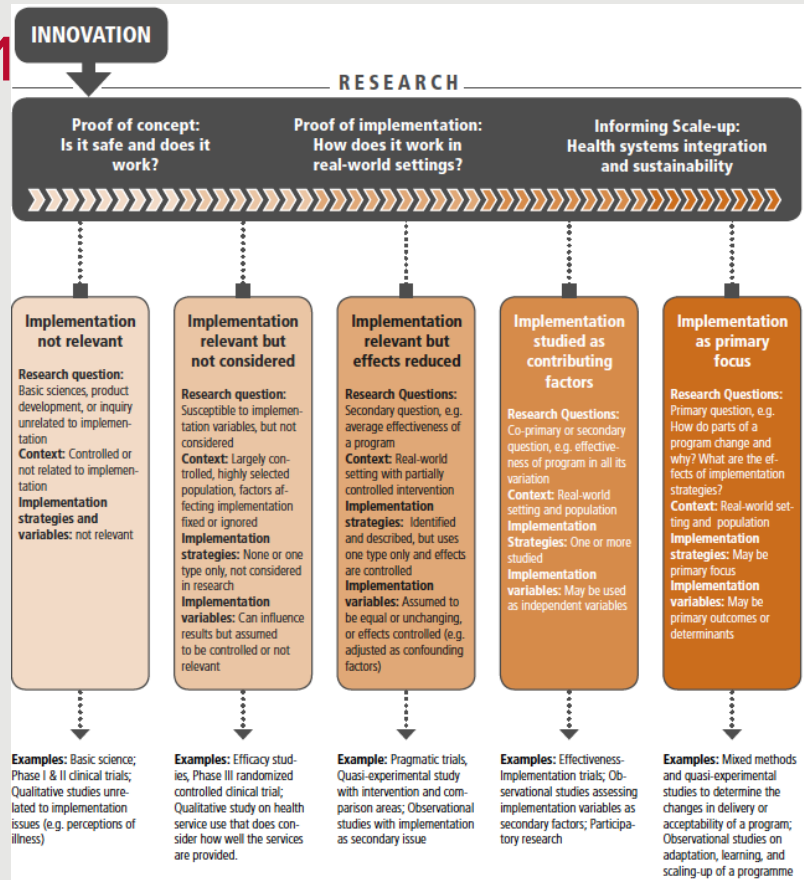


## Statement on Advancing Implementation Research and Delivery Science

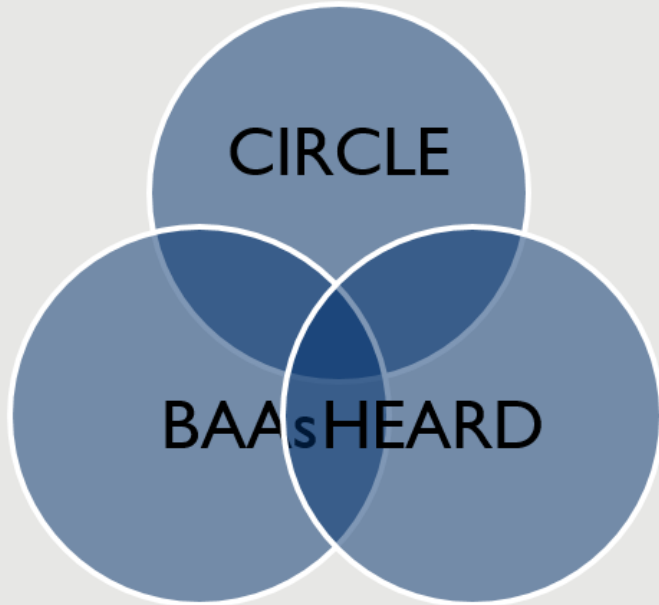
- Informs policy-makers, managers, the public, researchers, funders and other users on practical matters
- Builds capacity, ownership and accountability
- Strengthens problem-solving and learning
- Contributes to improved coverage, quality, efficiency and effectiveness of health interventions

# Implementation Research M

- Determined by Question
- Modified by Context, Stakeholders, Nature of Intervention, Timeliness



# Three Health Research Program Mechanisms



1. **Research Translation and Technical Assistance** *Coordinating Implementation Research to Communicate Learning and Evidence (CIRCLE) Contract*
2. **Applied Research Project Health Evaluation, Research and Development (HEARD) Cooperative Agreement**
3. **Implementation Research and Research/ Technology Utilization** *Broad Agency Announcement (BAA)*



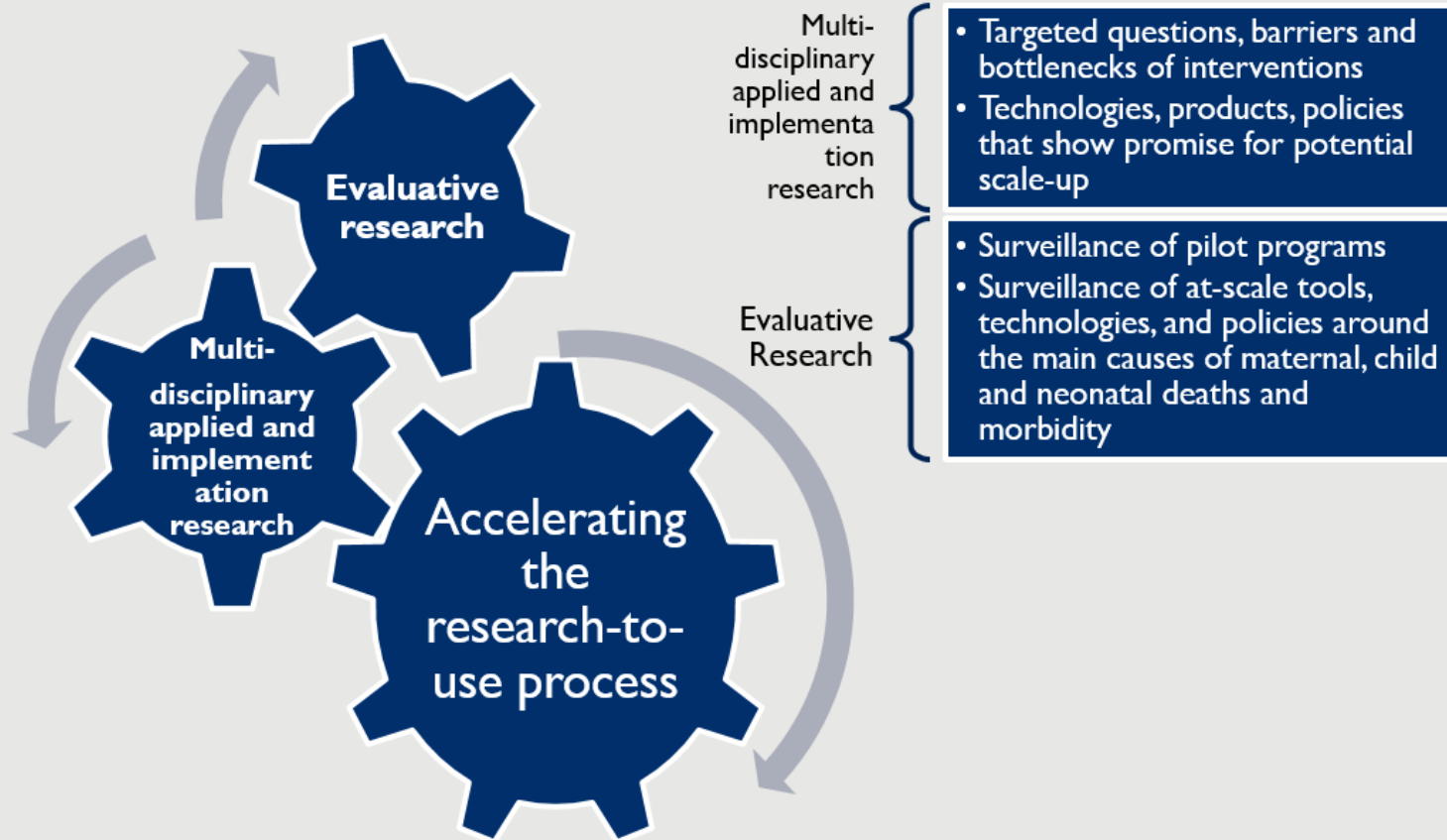
## First Mechanism: CIRCLE

- The CIRCLE project supports coordinated research-to-use activities to advance USAID global health priorities including Preventing Child and Maternal Deaths, Controlling the HIV/AIDS Epidemic, Combating Infectious Diseases, and Working with Global Partners.
- Activities under CIRCLE span programmatic, technical, logistical and administrative support, such as:
  - Convening and facilitating consultative meetings
    - Including Broad Agency Announcement(BAA) co-design process support
  - Mobilizing subject matter experts and subcontractors
  - Engaging key stakeholders from LMICs
  - Conducting or commissioning research, M&E activities
  - Facilitating research translation and utilization of findings
  - Establishing communities of practice
  - Knowledge management

## Second Mechanism: HEARD

- The HEARD Project focuses on evaluative and targeted research that accelerates research-to-use processes and two types of research activities:
  - 1) Multidisciplinary applied & implementation research
  - 2) Evaluative research
- HEARD works through a partnership known as the Implementation Science Collaborative, comprised of seven global and sub-regional anchors as well as 24 technical resource partners. The four main strategies of the collaborative are:
  - 1) Partnership and agenda development
  - 2) Research and evaluation study design and implementation
  - 3) Data liberation and evidence strengthening
  - 4) Acceleration of evidence-to-use processes

# The HEARD Approach



# SAVING LIVES THROUGH REAL-WORLD RESEARCH



The Health Research Program supports real-world research and translates findings into effective health interventions that can be adapted globally.

# Thank you for joining us today!

Please join us for our second seminar  
**Population and Reproductive Health**  
**Wednesday, March 14, 12-1PM**

[https://ghpod.adobeconnect.com/usaidthgh\\_rd/](https://ghpod.adobeconnect.com/usaidthgh_rd/)

