

Implementation Science: The Signature Science of Global Health

Introduction to an Emerging Research Paradigm
to Close the “Know-Do” Gap

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"PUBLICATION PATHWAY"

Balas & Boren, 2000

Original Research

Implementation

It takes

17 years

to turn

14 percent

of original research to the
benefit of patient care

CLOSE THE GAP

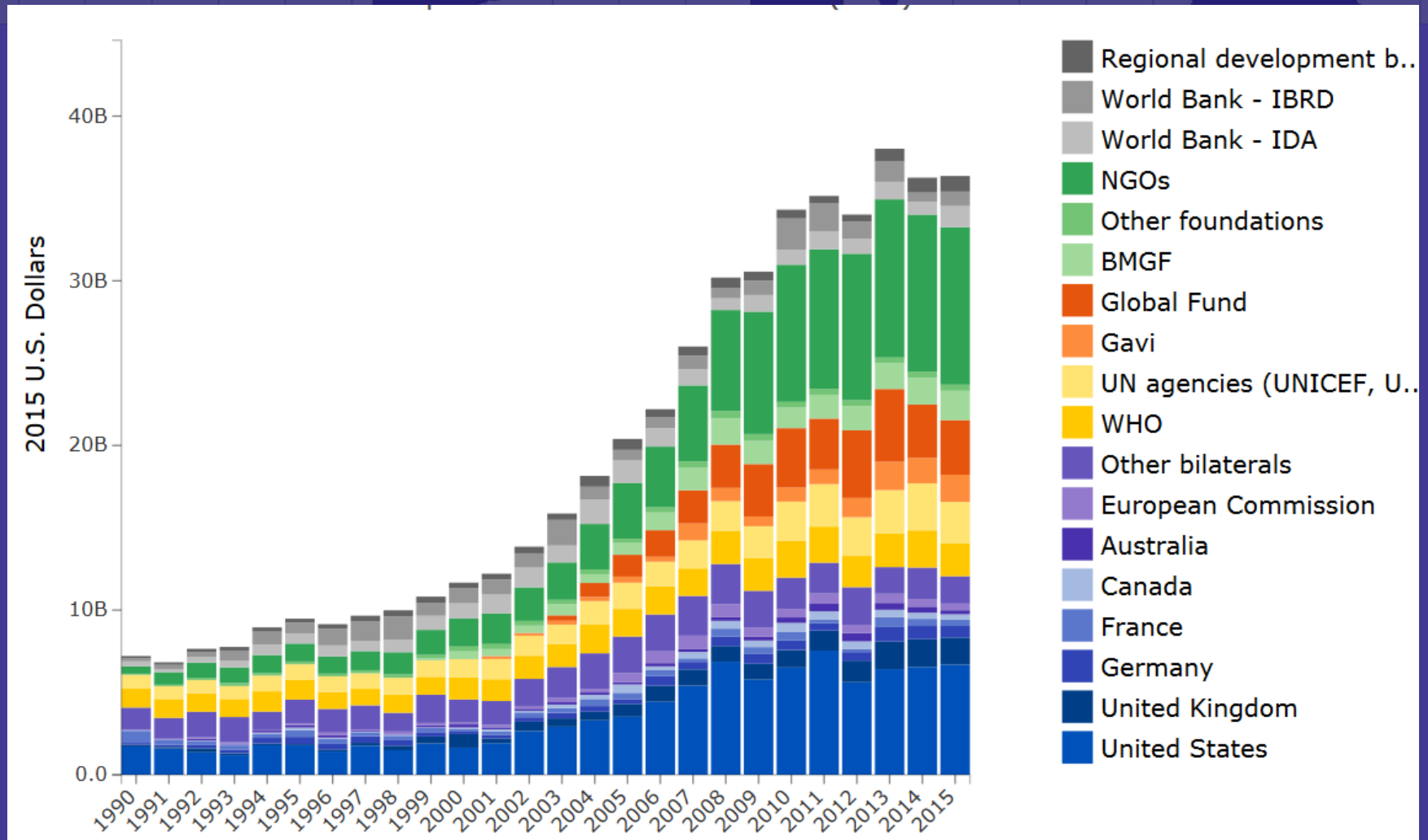
Science

The Implementation Bottleneck

- ANC, delivery & postpartum care
- Family planning
- Infant/child care
- Vaccines
- HIV/TB/malaria care
- “Primary health care”
- “Basic surgery”



Development Assistance for Health, 1990-2015



Source: IHME: <http://vizhub.healthdata.org/fgh/>

The Implementation Bottleneck

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- Primary Health Care

Introduction of new:

- HIV prevention strategies: Option B/B+, VMMC, test & treat, PrEP
- Malaria, TB tests & drugs
- New vaccines
- Drugs for NTDs
- CVD services
- Mental health services



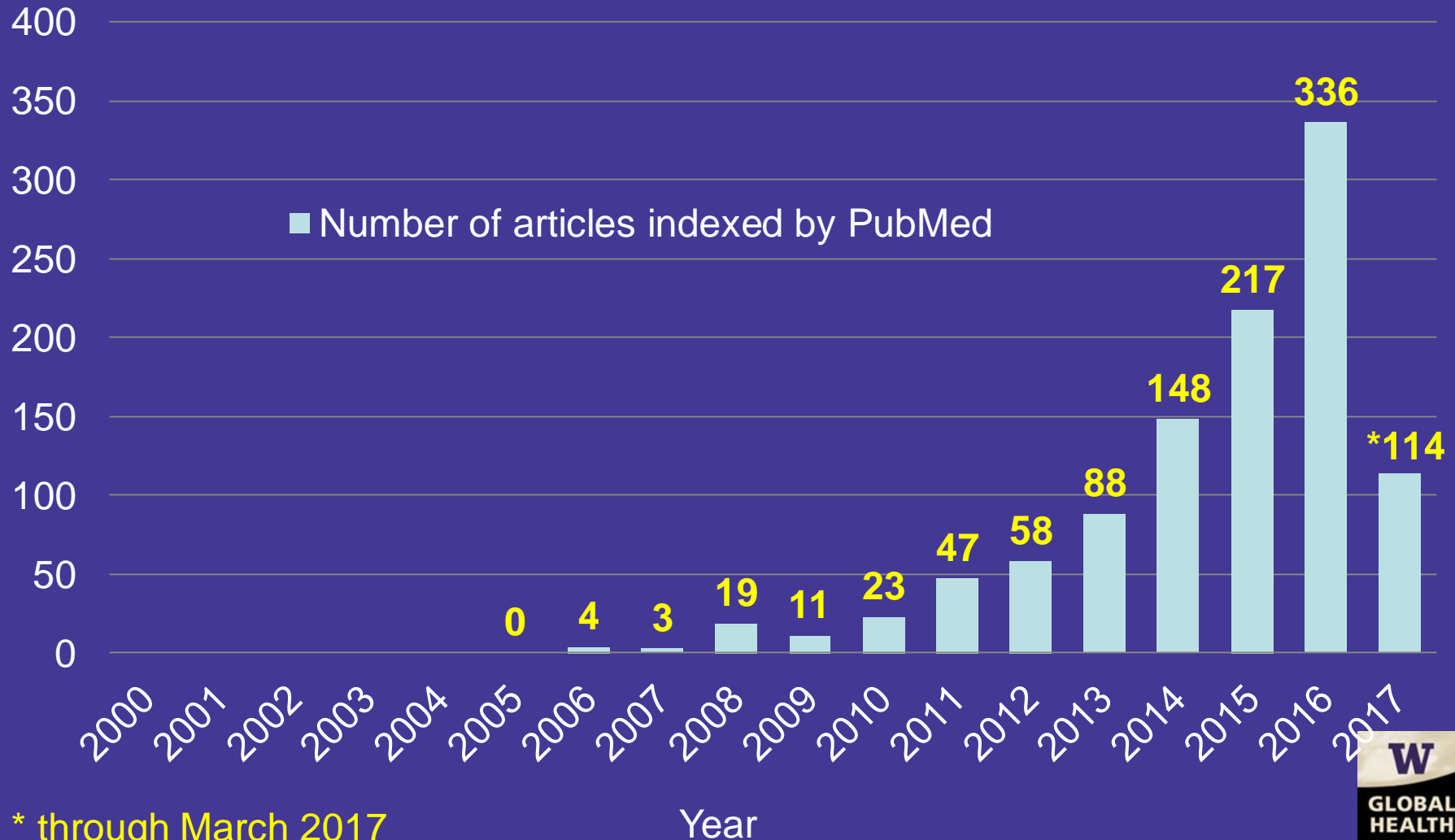
Priorities in Health Research Funding: Limited Impact on Child Mortality

- From 2000-2004, of new NIH & BMGF grants
 - 97% for developing new or improved technologies
 - 3% for implementation science (IS)
- Estimated impact of IS 2-20 X that of research to develop new/improved technologies.

Potential reduction in child (< 5y/o) mortality in 42 countries with 90% U5M worldwide

Cause of Mortality	Percentage of All Deaths ^a	Cause-Specific Deaths That Could Be Averted, %	
		Improving Utilization With Efficacy of Technology Constant ^a	Improving Efficacy of Technology With Utilization Constant ^b
Diarrhea	22	88	40
Pneumonia	21	65	29
Malaria	9	91	23
HIV/AIDS	3	48	3
Measles	1	100	10
Birth asphyxia	10	39	2
Sepsis	8	94	18
Preterm	8	59	19
Tetanus	2	81	46
Other neonatal	5	0	0
Other postneonatal	10	0	0
<i>Total</i>	100		

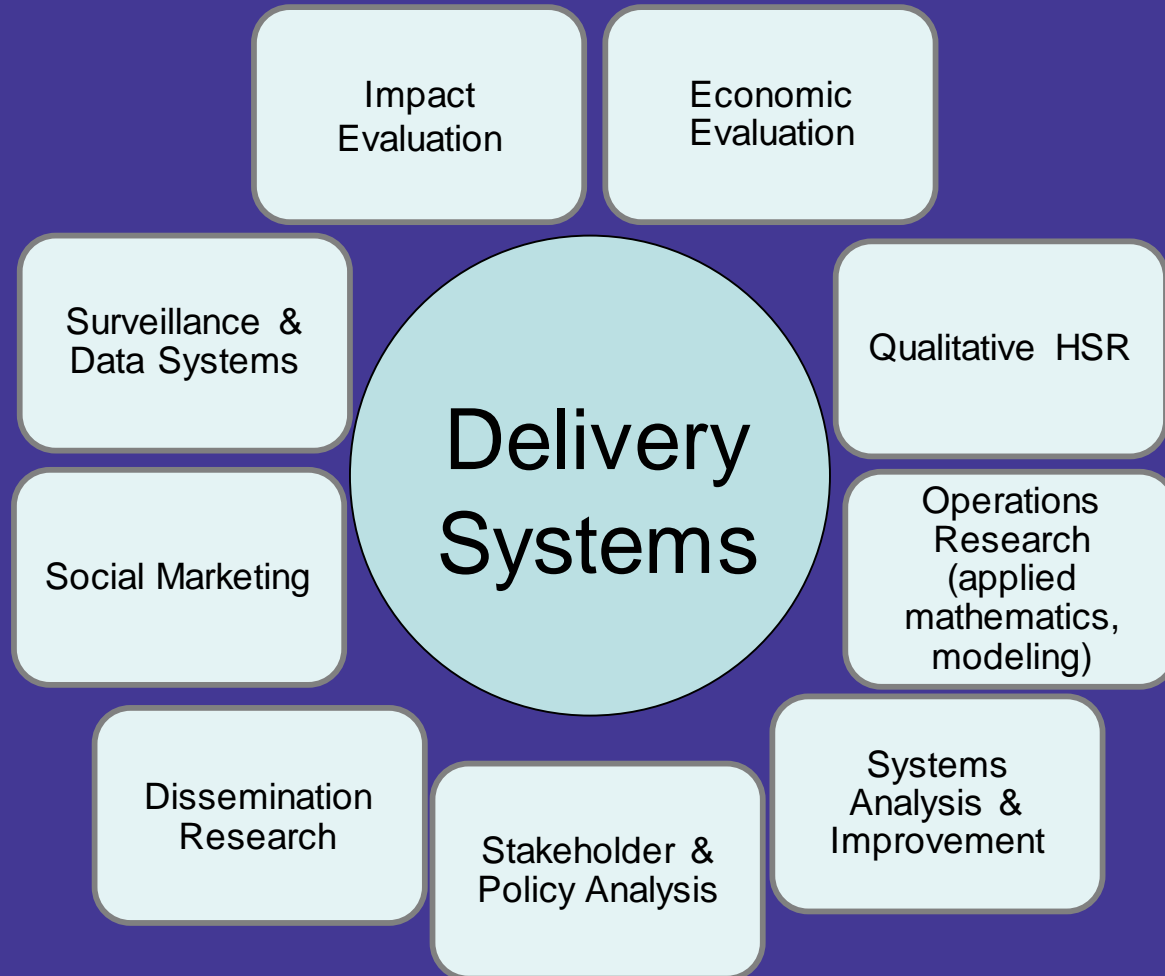
Implementation Science Publication Trends, 2000-2017



Implementation Science

- A systematic, scientific approach to ask and answer questions about how to get ‘what works’ to people who need it with greater *speed, fidelity, efficiency, quality and relevant coverage*
- Framework of state of the art methods applied to improve the process as we move from *intervention development* → *implementation* → *scale-up*

Implementation Science Framework



Implementation Science

- A (still being formed) rose by many names.....
 - Delivery science
 - Program Science
 - Scale-up science
 - Translational research
 - Knowledge translation
 - Diffusion/Dissemination research
 - Implementation research
 - Operations research
 - Quality improvement research
 - Outcomes research
 - Health systems research





The ***science*** of implementation & scale up is critical to global health

This is the scientific frontier that will define what we can achieve in eliminating health disparities

Future Directions: Implementation Science Priorities & Challenges

- Optimizing & testing (de)implementation strategies, especially in low-resource settings
- Comparing implementation, scale-up & spread strategies
- Measuring implementation context, processes & outcomes (defining utility of various outcomes)
- Integrating work at clinical/facility level & (trans)national programs & policy level
- Dissecting core components & soft periphery
- Refinements in study designs & analytic methods
- Capacity building (human & financial resources)

Thank you!

- Peter Cherutich
- Elvin Geng
- Linda Kupfer
- Kenneth Sherr
- Rachel Sturke
- Bryan Weiner
- David Wilson