

Translational Research and Kangaroo Mother Care

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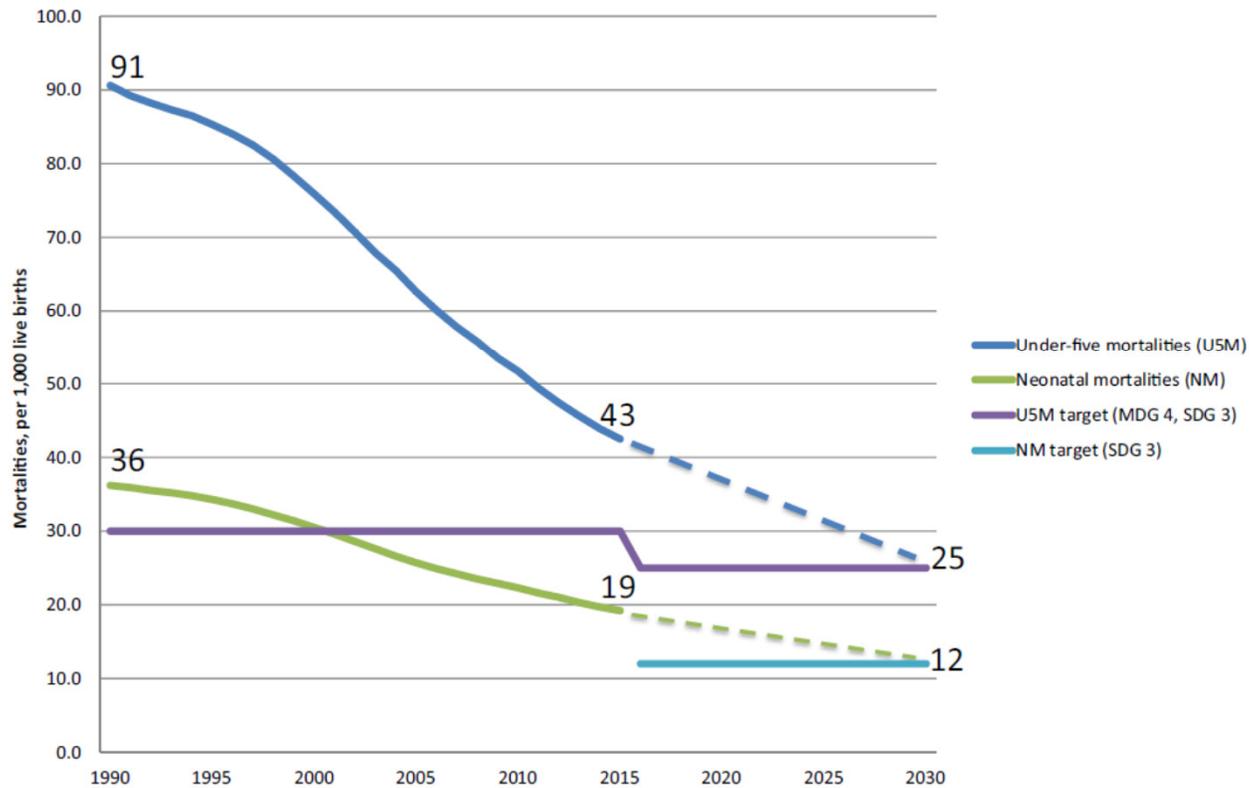
Outline

- **Neonatal mortality:**
 - Current facts and reduction goals.
 - Available interventions.
 - Gaps.
- **Translational science**
 - Definitions.
 - Components.
- **KMC and translational science**
 - Achievements.
 - Pending tasks and challenges.



Neonatal Mortality: Reduction Goals

Global Under-five and Neonatal Mortalities, 1990–2015
Projected decline in mortalities to reach 2030 targets



Ehret DY, et al. Clin Perinatol. 2017;44:567-82

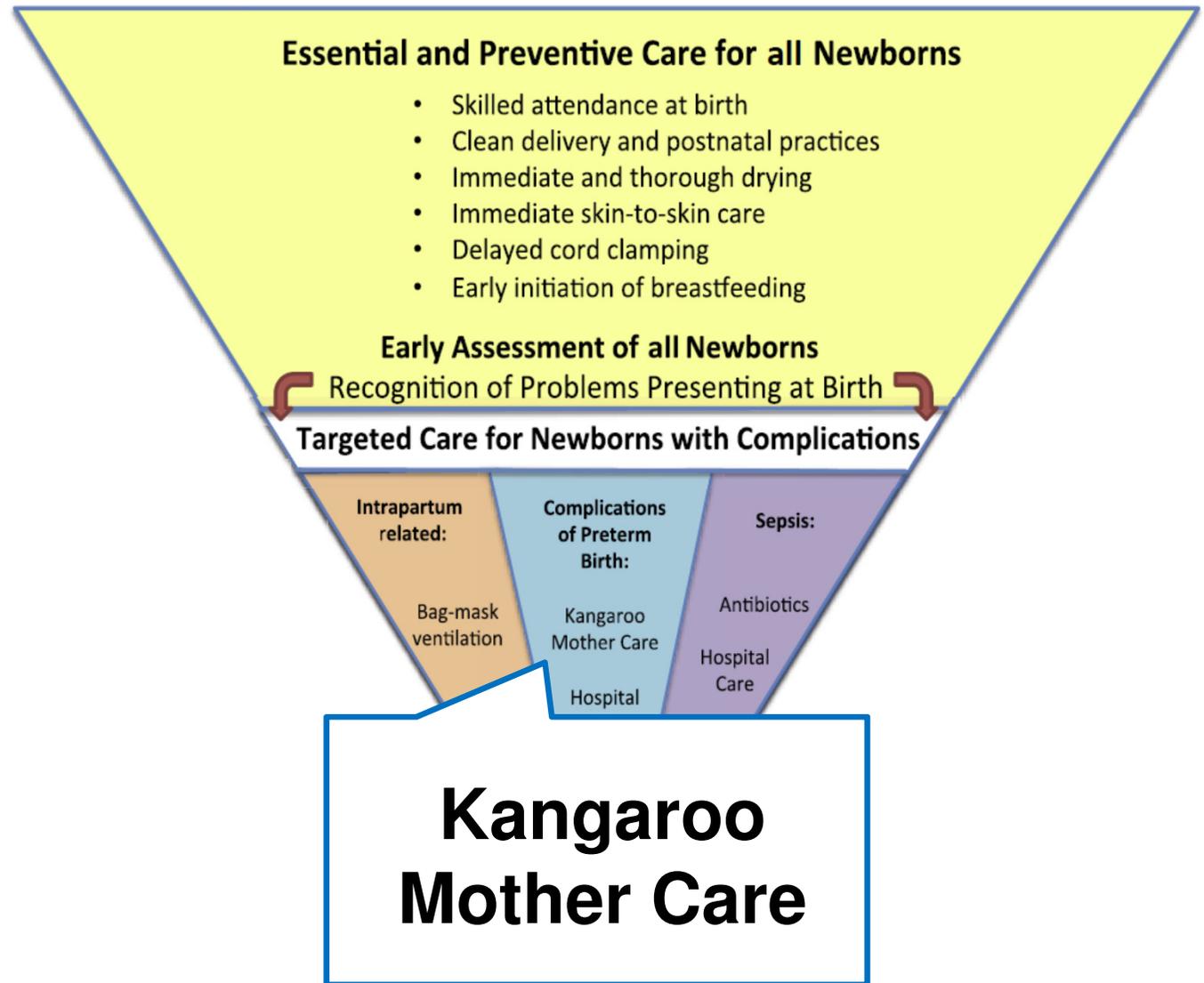
Neonatal Mortality: Main Current Facts

Indicator	World	LMIC*
Neonatal deaths / year	2.7 million	2.4 million (90%)
Main causes		
Pre-term birth	35%	40%
Intrapartum complications	24%	22%
Sepsis	15%	15%
Relative risk of death**		
Pre-term birth	--	10
Intrapartum complications	--	36
Sepsis	--	34

* LMIC: Low / middle income countries with neonatal mortality rate >30 per 1,000 LB

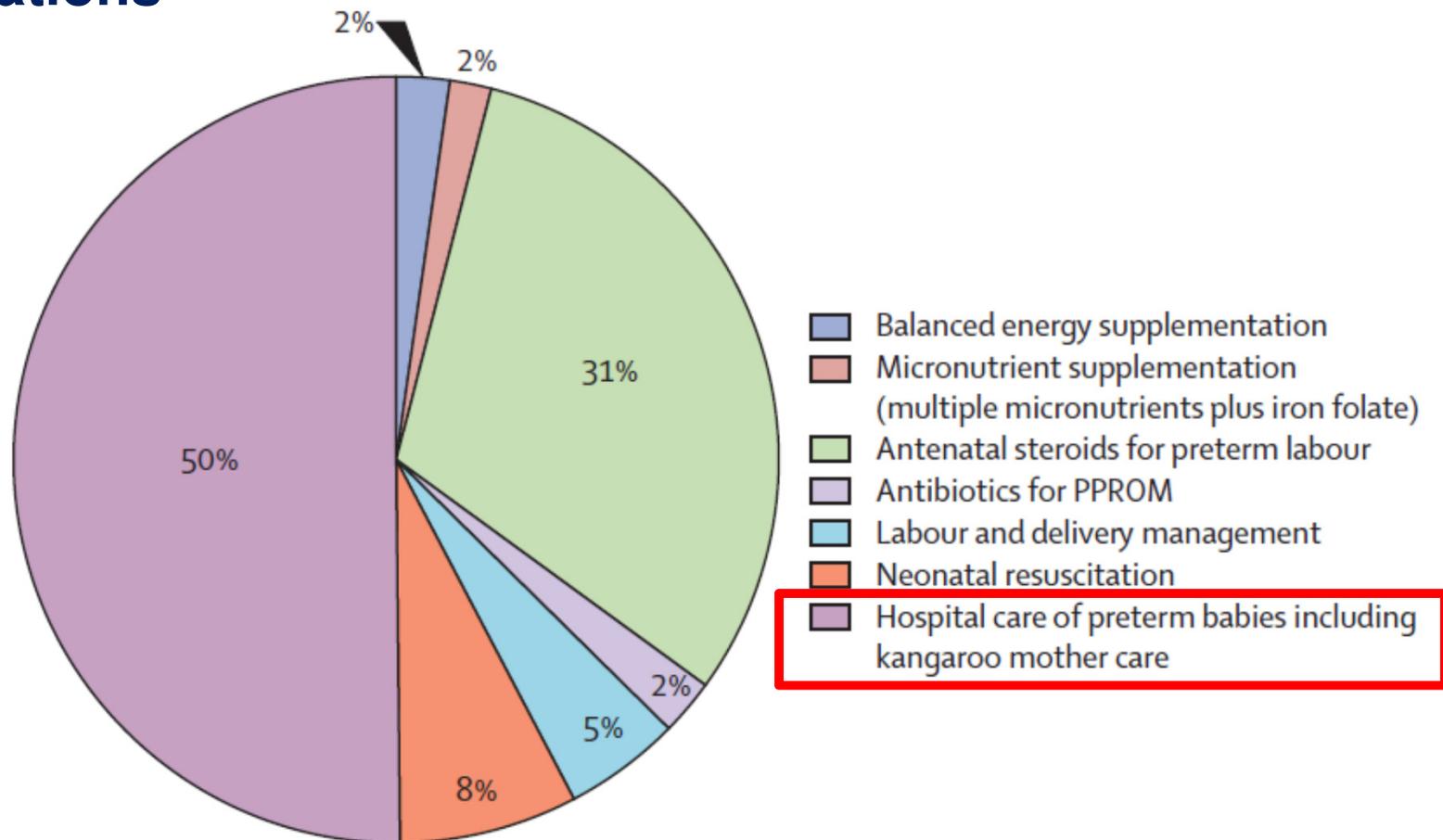
** Risk of death settings NMR >30 compared with NMR <5

**Effective,
simple, low
cost
interventions
to address 3
main causes
are available**



Ehret DY, et al. Clin Perinatol. 2017;44:567-82

Estimated effect of interventions on preterm-related direct complications



Bhutta ZA, et al. Lancet 2014;384:347–70.

Outcome	RRR* (%)	95% CI
Mortality	36	11 - 64
Neonatal sepsis	47	17 - 66
Hypothermia	78	59 - 88
Hypoglycemia	88	68 - 95
Hospital readmission	58	24 - 77
Exclusive breastfeeding increase	50	26 - 78

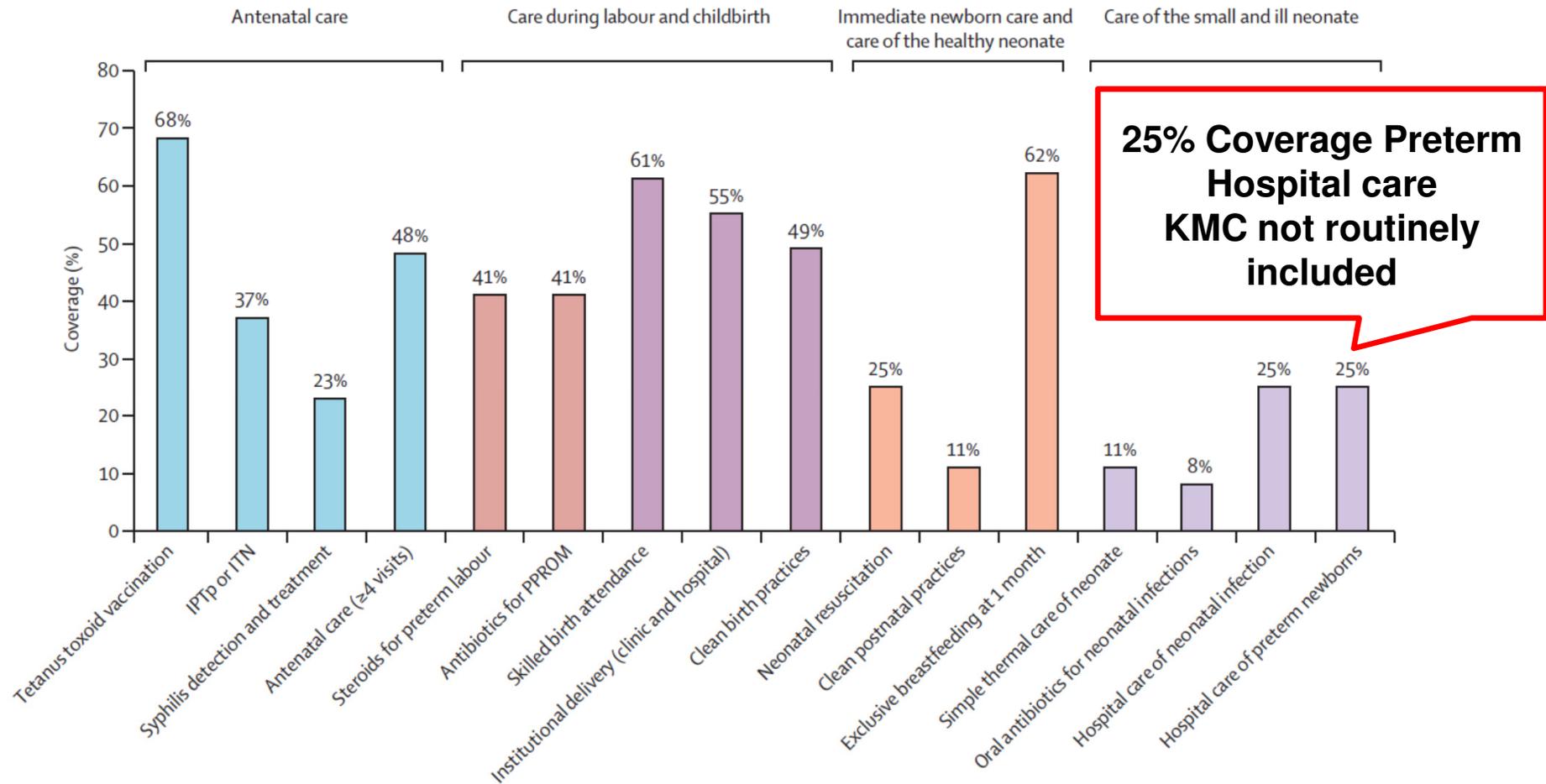
* **Relative risk reduction**

Boundy EO, et al. Kangaroo Mother Care and Neonatal Outcomes: A Meta-analysis. *Pediatrics*. 2015;137:e20152238

Why Neonatal Mortality Remains High?

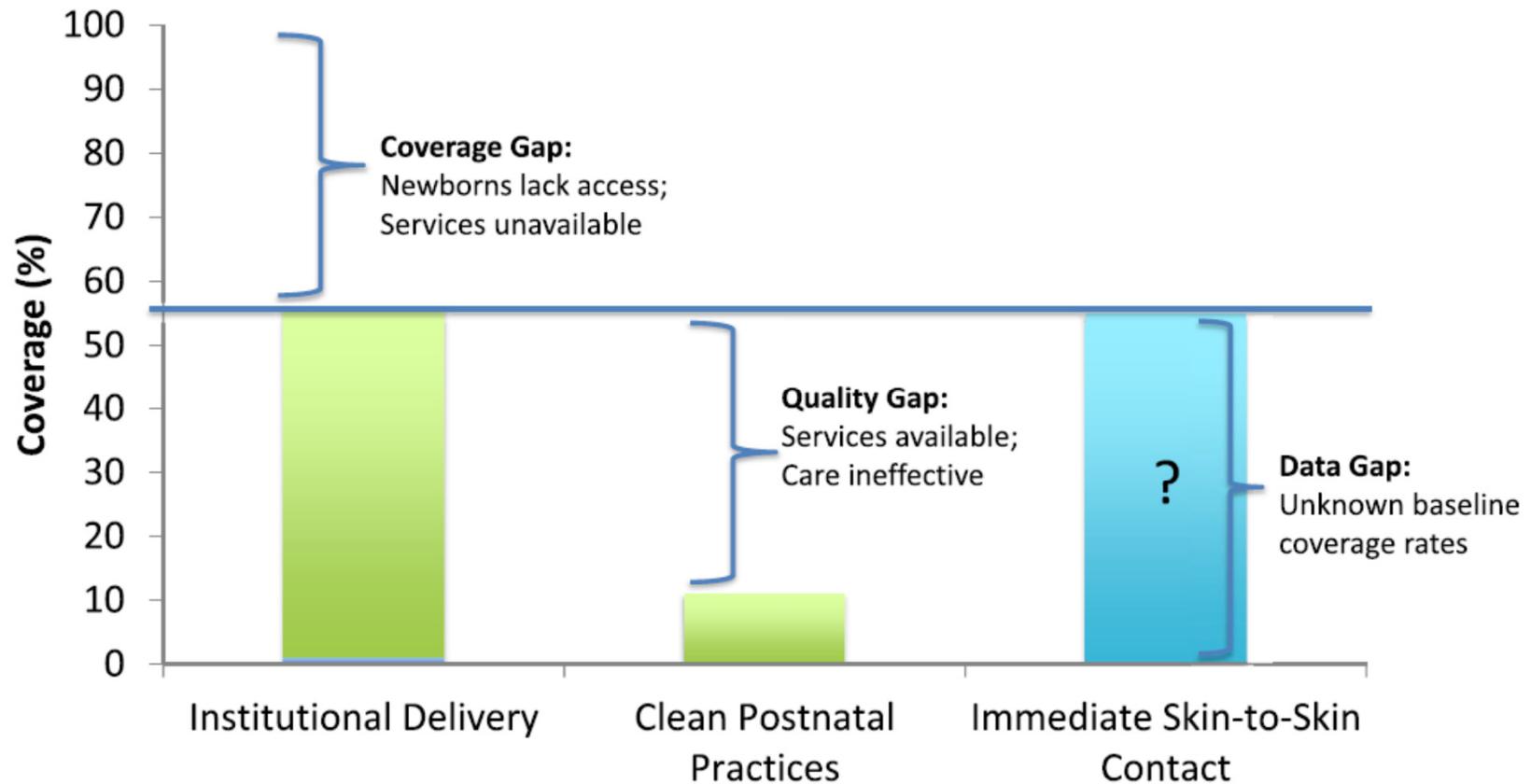
1. **Coverage Gap: Many do not receive** basic and potentially lifesaving treatments (insufficient coverage).
2. **Quality Gap:** Services are available but **care is of inadequate quality or is ineffective.**
3. **Data Gap: Unknown baseline coverage rates** for some interventions.

Coverage Gap

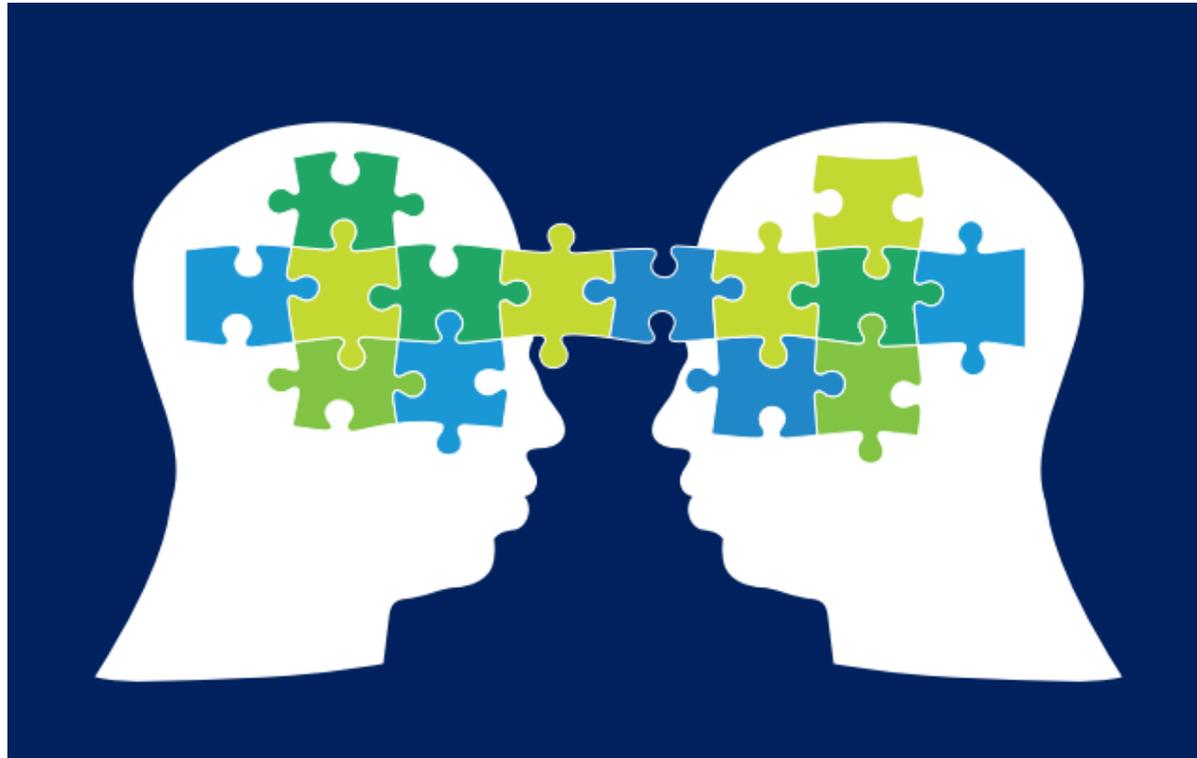


Bhutta ZA, et al. Lancet. 2014;384:347–70.

Quality and Data Gaps



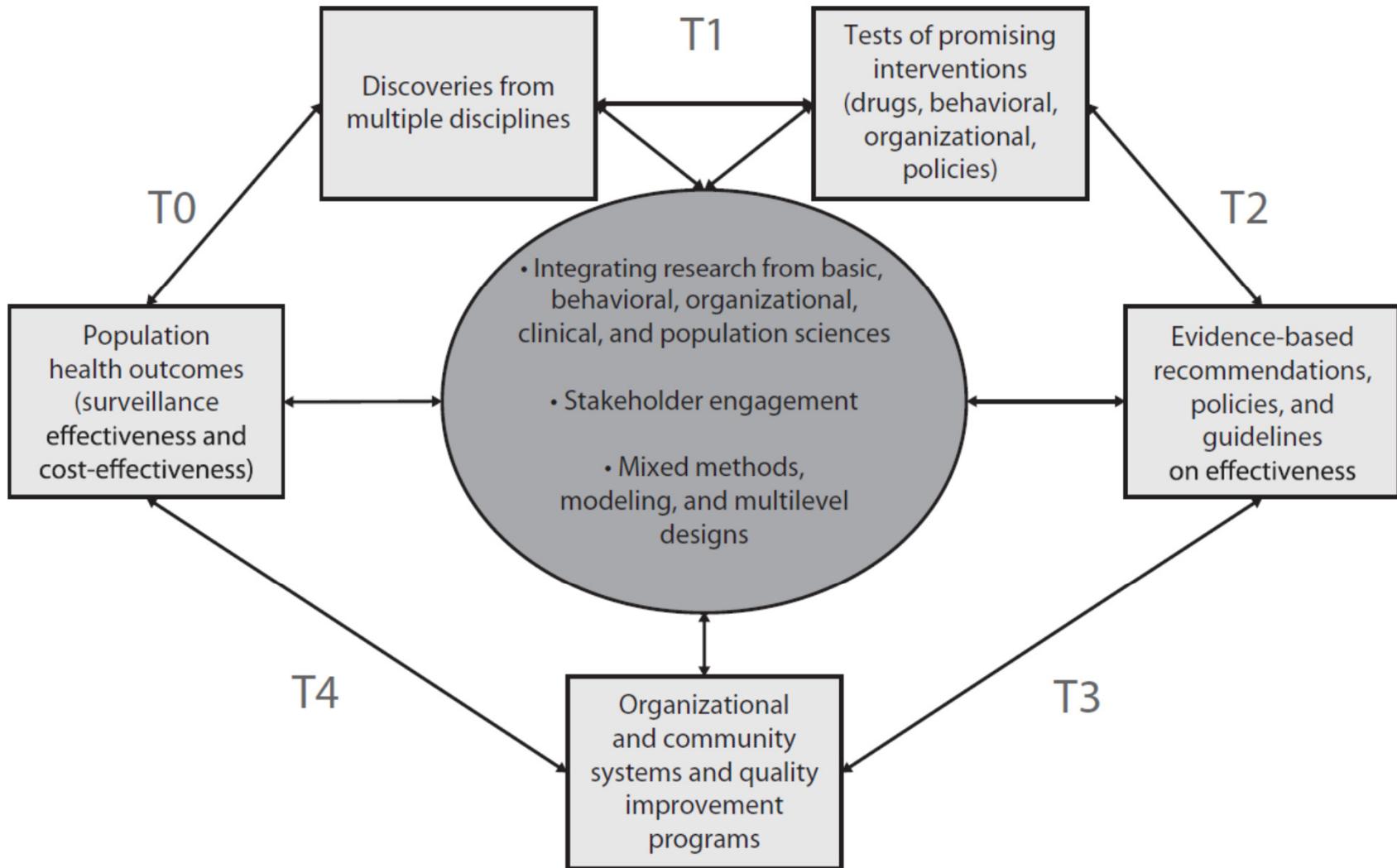
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**TRANSLATIONAL “SCIENCE”
CURRENT CONCEPTS**

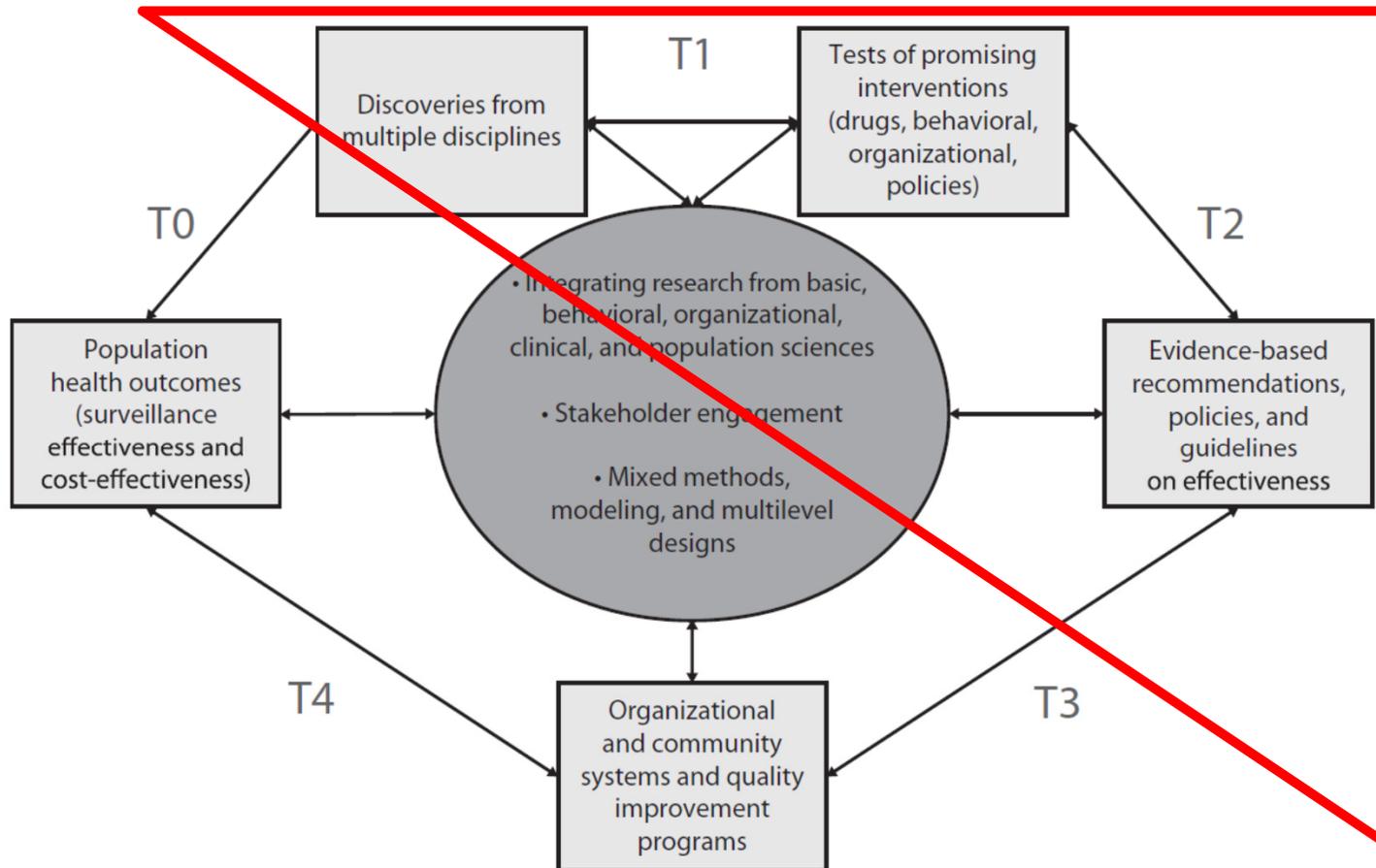
Translational Research (Acad Med 2010;85:470-5)

- **NIH and IOM: Two areas** of translation:
 - **Applying discoveries** generated in laboratory and preclinical studies **to studies in humans**.
 - Enhancing the **adoption of best practices in the community**.
- **National Cancer Institute: Transforms scientific discoveries** from laboratory, clinical, or population studies **into clinical applications**.
- **Rubio et al: Multidirectional integration of research** (basic, patient-oriented, population-based) to improve the health of the public (Acad Med, 2010).



Glasgow RE, et al. Am J Public Health. 2012;102:1274-81

The knowledge integration process



KMC and TR: T1 - T2 (studies, systematic reviews, guidelines)

- **Individual studies:**

- More than 2,000 published papers on studies.
- More than 120 reporting on efficacy-effectiveness and safety.

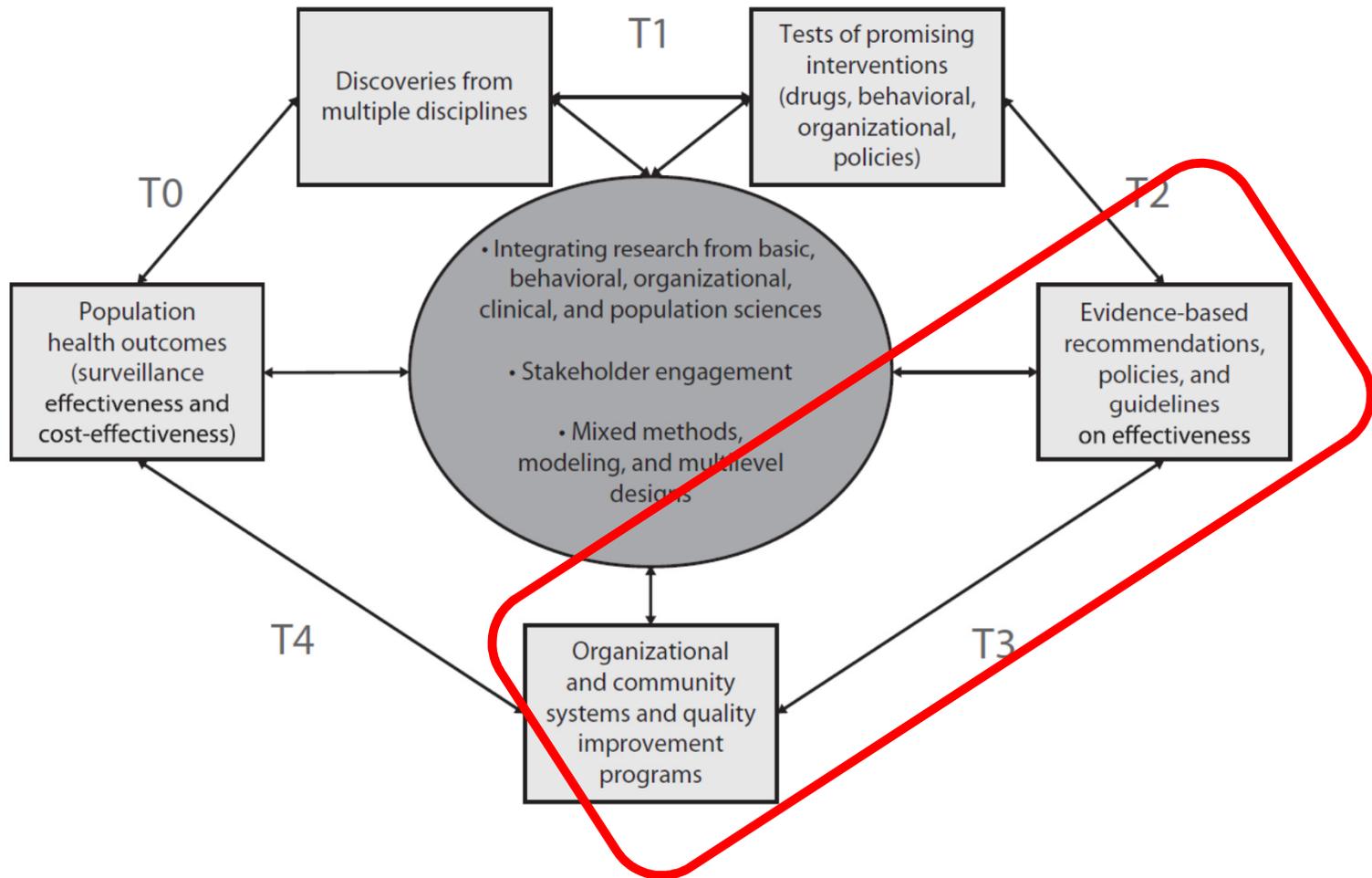
- **Synthesis / systematic reviews:**

- At least 5 good quality systematic reviews.
- Sound evidence of efficacy.
- Clinically significant risk reduction / improvement of outcomes.

- **Synopsis:**

- Several EB guidelines (Fundacion Canguro, WHO, etc.).

The Knowledge integration process

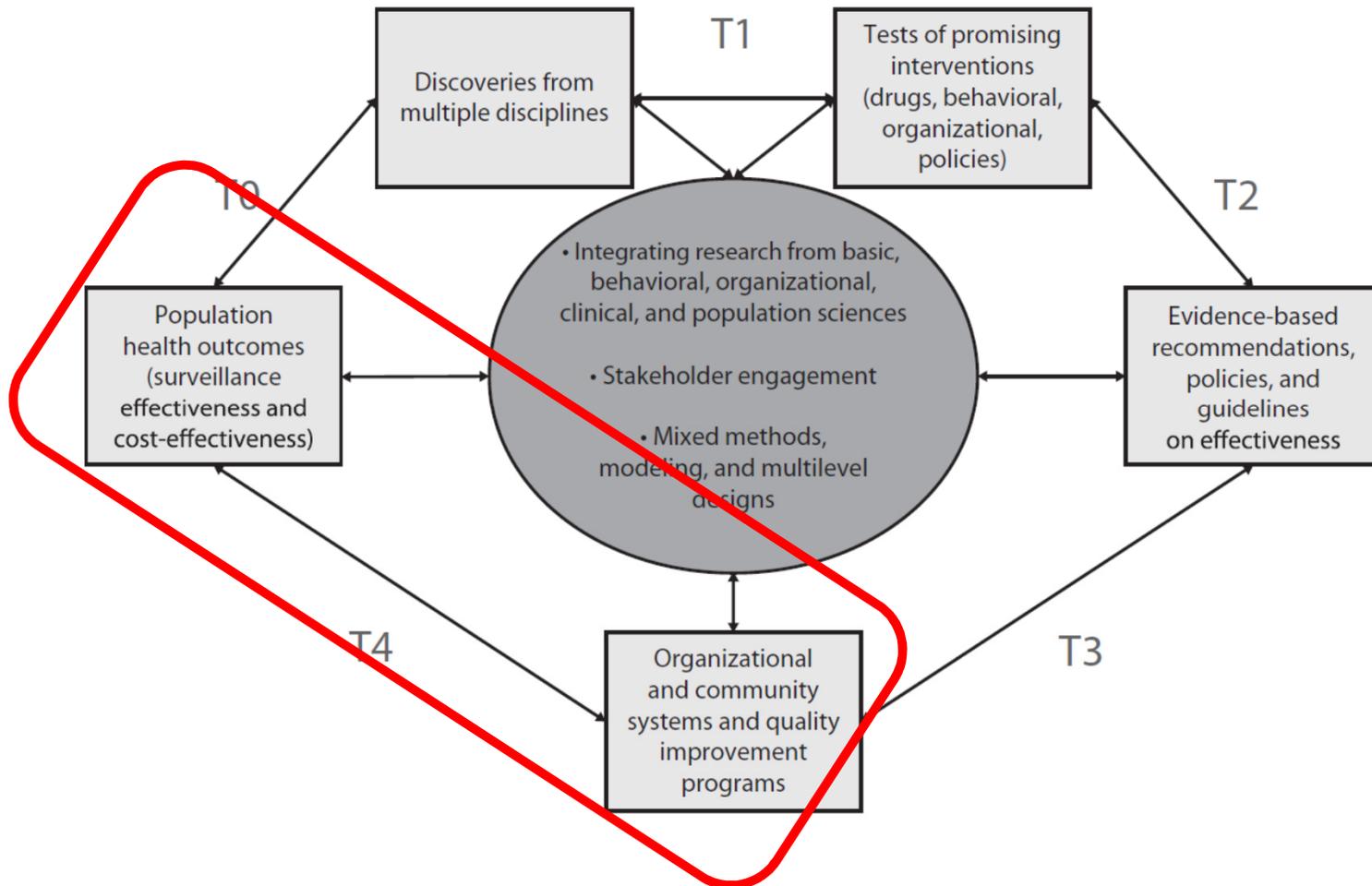


KMC and TR: T3 (systems & QI programs)

- **Country level (Colombian example)**
 - Ministry of Health and Fundacion Canguro
 - Written Health System Policy
 - Norms
 - Implementation protocols
 - Quality assurance protocols
 - Training Internet-based tools



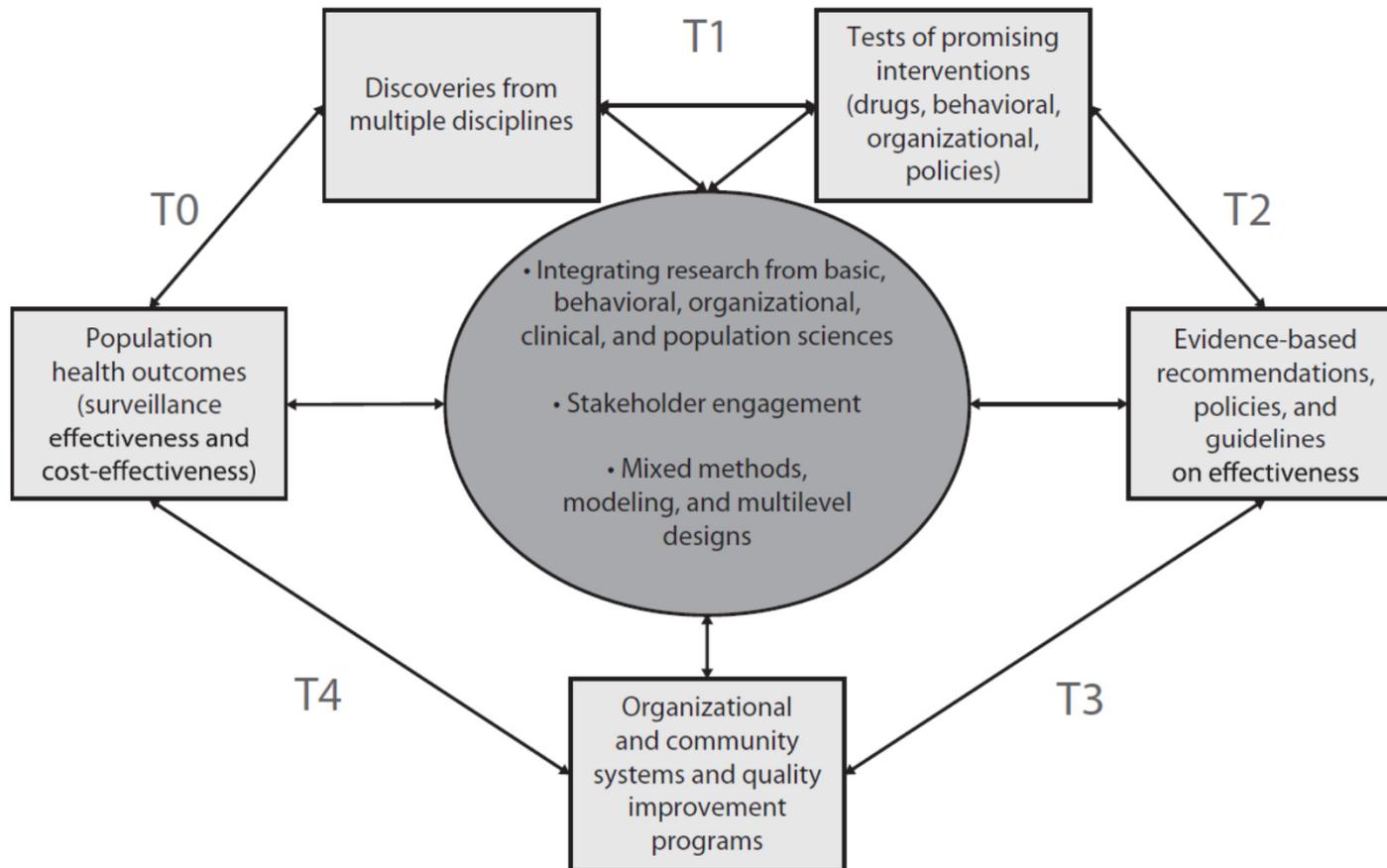
The Knowledge integration process



KMC and TR: T4 (dissemination and implementation)

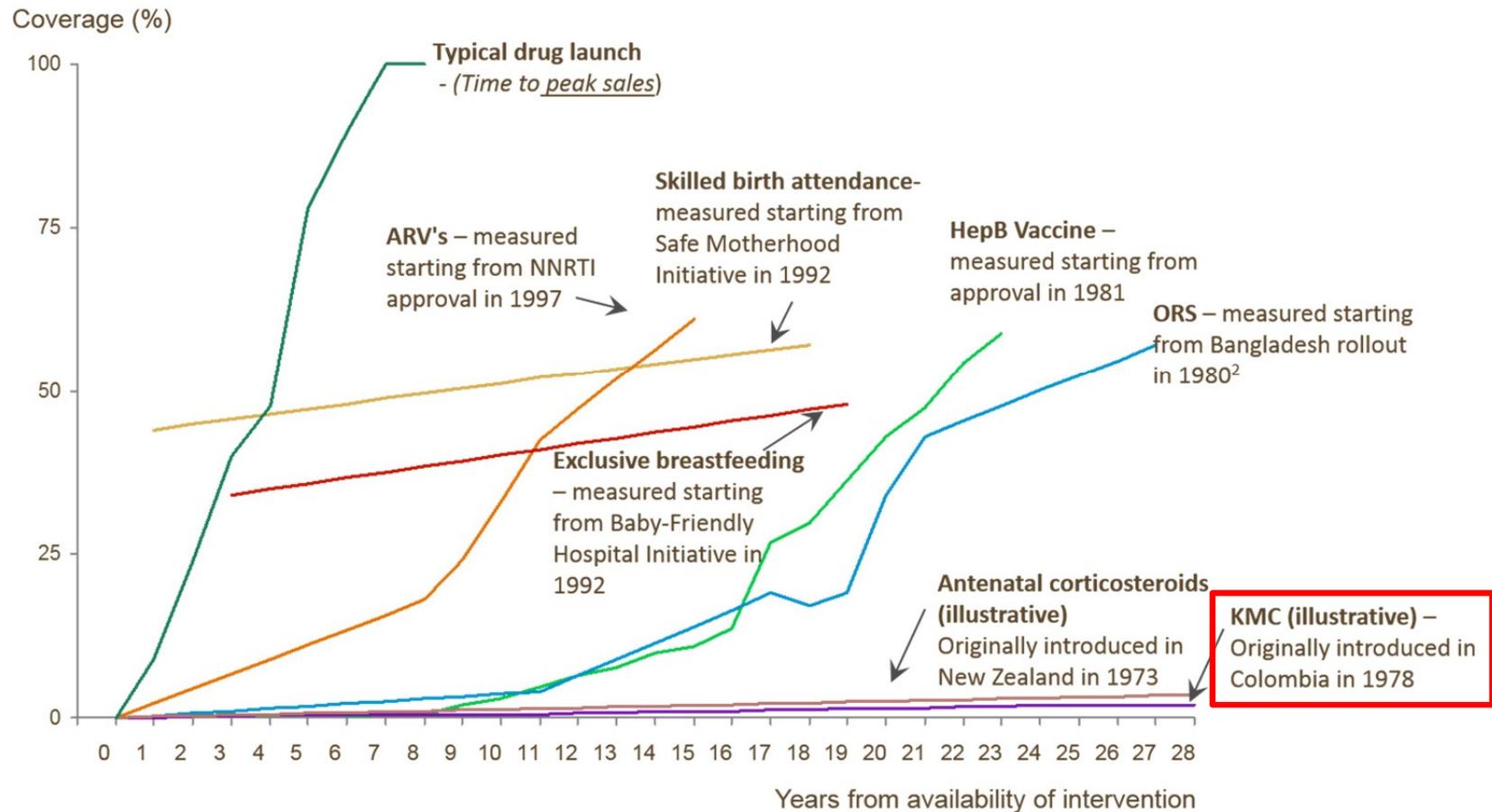
- **Diffusion Efforts at Global Level**
 - Fundacion Canguro Implementation Model
 - See one, Do one, Teach one
 - International teams trained for Africa, South East Asia, India, Latin America, Eastern Europe
 - Others: Save the Children, USAID, WHO / Unicef ENAP initiative

So, we seem to be complying...

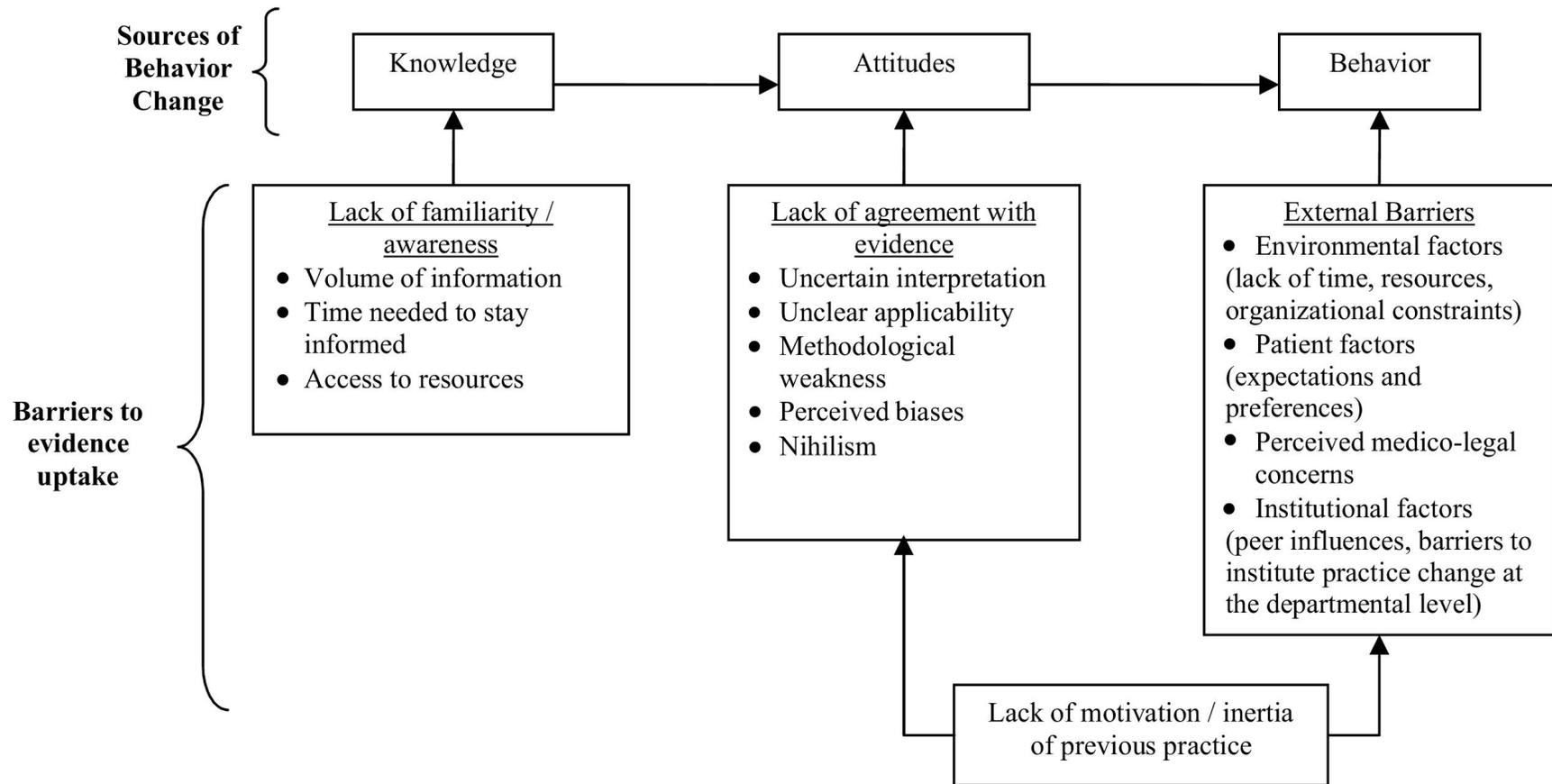


However: KMC - Slow Diffusion and Uptake

% coverage of health intervention in low and middle income countries



Barriers to evidence uptake



Lang ES, et al. Ann Emerg Med. 2007;49:355-63

Diffusion vs. Implementation

- Besides knowledge transfer and diffusion, **implementation is needed** to achieve true knowledge translation.
- **Researchers must play an active** role (publication of evidence is not enough).
- Implementation models need to be chosen and scaled up (one size does not fit all).
- Choice of models should be guided by empirical evidence on their effectiveness (translational research).

Scaling-up Challenges in LMIC

- Be able to:
 - Simplify, standardize and adapt the intervention while ...
 - ... maintaining essential components required for effectiveness.
- Avoid trivialization.
- Customize maintaining minimal acceptable standards.
- Develop efficient, COI free implementation process:
 - Avoiding / preventing waste of resources.
 - Preventing / containing corruption.
 - Maintaining transparency and accountability.

Scaling-up Challenges in LMIC

- Achieving Targets:
 - Uptake
 - Sustainability
 - Quality assurance / improvement
- Strategies and procedures for implementation in special cases:
 - “Difficult” settings
 - Zones of conflict

Conclusions

- Burden due to prematurity and LBW remains high.
- Simple, low-cost efficacious strategies can impact this problem.
- Basic neonatal hospital care (including KMC) could reduce LBW related mortality by half.
- Uptake is suboptimal and slow.
- Major gaps in implementation persist:
 - Coverage
 - Quality of interventions
 - Information

Recommendations

- Current dissemination of knowledge must be energized: large scale implementation
 - Identifying champions at world level.
 - Need for global implementation plans.
 - Engaging actors and communities.
 - Evaluate and incorporate novel forms of financial sustainable support.

Recommendations

- Dissemination and implementation MUST address quality and continuous quality improvement.
- Long term transformation of education of health care providers should be included
 - Evidence – based practice
 - Quality Improvement culture

