Countdown to 2015
Maternal, Newborn & Child Survival

Implementation research:
New evidence and future directions

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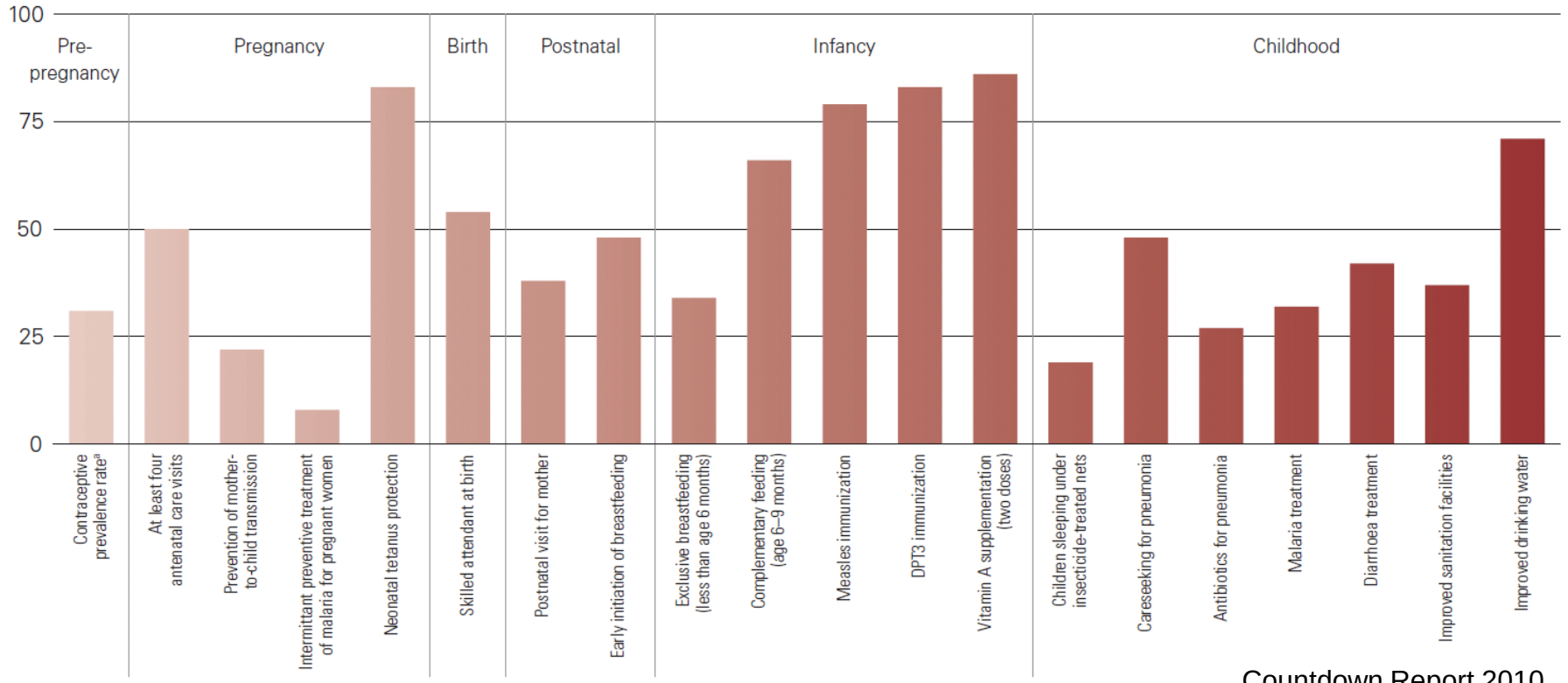
Countdown Report shows gaps in coverage:

"We may know what to do but not always how to do it at scale"

Median national coverage of interventions across the continuum of care for 20 *Countdown* interventions and approaches in *Countdown* countries, most recent year since 2000 (%)



Countdown Report 2010

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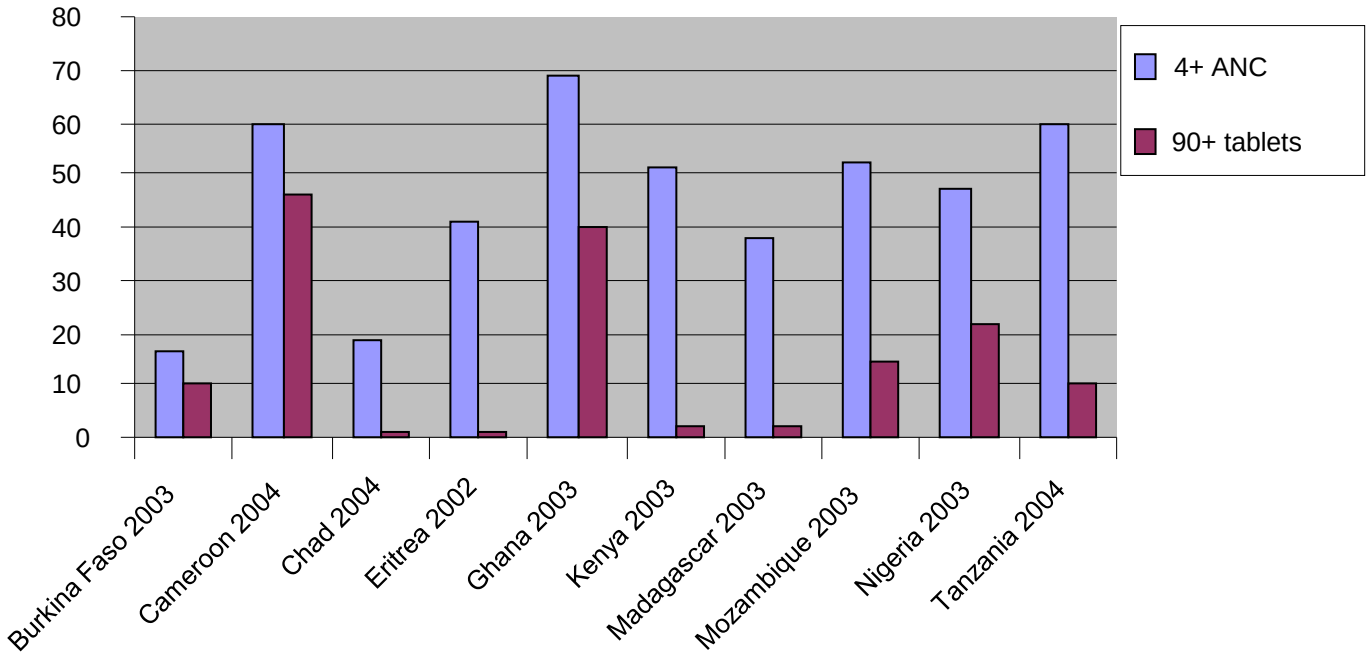
Access and coverage paradox

Antenatal Care coverage does not match

Iron and Folic Acid coverage



Country Level Demographic and Health Survey Data, compiled by WHO/MPS

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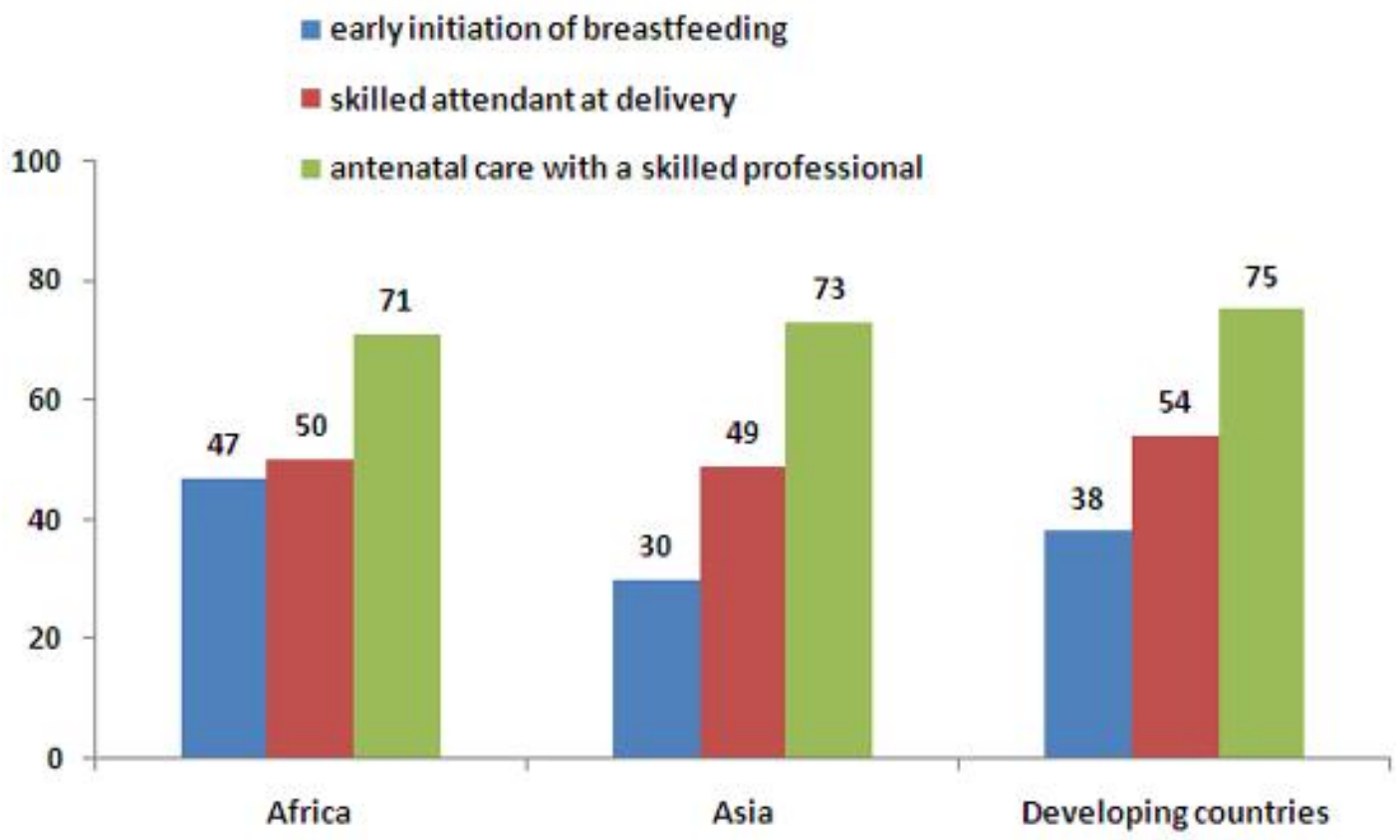
Access to skilled care does not match early initiation of breastfeeding



http://www.childinfo.org/breastfeeding_status.html

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Position and practice paradox

Table 4. **Mean Phase II competency scores (%) by provider cadre and topic**[a]

Topic	Doctors (*n*)	Medical students (*n*)	Professional nurses[b] (*n*)	Auxiliary nurses (*n*)	Total (*n*)
Knowledge test					
Infection prevention	21.4% (506)	12.2% (148)	16.2% (339)	9.6% (365)	** 15.9% (1358)
Uncomplicated labour and delivery	73.1% (357)	71.7% (117)	52.6% (256)	47.5% (307)	** 60.3% (1037)
Immediate newborn care	65.3% (347)	60.8% (120)	44.8% (243)	39.0% (313)	** 51.9% (1023)
Haemorrhage during pregnancy	88.4% (357)	86.8% (117)	75.9% (256)	70.3% (307)	** 79.8% (1037)
Postpartum haemorrhage	81.1% (357)	75.9% (117)	60.4% (256)	57.8% (307)	** 68.5% (1037)
Pregnancy-induced hypertension	60.5% (357)	57.2% (117)	45.5% (256)	43.0% (307)	** 51.2% (1037)
Sepsis	76.3% (357)	73.4% (117)	61.5% (256)	53.0% (307)	** 65.4% (1037)
Active management of third stage labour	84.1% (357)	82.6% (117)	67.8% (256)	63.4% (307)	** 73.8% (1037)
Total knowledge score	**71.5% (506)**	**67.5% (148)**	**56.7% (339)**	**51.4% (365)**	**62.0% (1358)**
Partograph test					
Written questions only	67.0% (343)	65.8% (116)	41.9% (118)	32.9% (89)	** 57.8% (666)
Graphing only	67.3% (343)	69.1% (116)	19.3% (118)	9.9% (89)	** 51.5% (666)
Total partograph test score	**67.1% (343)**	**66.6% (116)**	**36.3% (118)**	**27.1% (89)**	**56.2% (666)**
Skills evaluation					
Active management of third stage labour	52.5% (170)	48.7% (41)	40.9% (93)	36.4% (81)	** 45.9% (385)
Manual extraction of the placenta	53.1% (170)	45.0% (41)	–	–	** 51.5% (211)
Bimanual uterine compression	48.4% (170)	37.2% (41)	–	–	** 46.2% (211)
Immediate newborn care	76.4% (159)	76.8% (40)	67.4% (86)	63.6% (84)	** 71.5% (369)
Neonatal resuscitation with ambu bag	61.6% (159)	57.7% (40)	50.1% (86)	45.0% (84)	** 54.7% (369)

[a] Statistical significance for the difference in scores between provider cadres determined by ANOVA: * $P < 0.05$; ** $P < 0.001$.

[b] As in Table 2, five nurse-midwives who participated in Phase II were included in the category "professional nurses".

(Harvey SA et al. Bull WHO 2007; 85:783)

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Understanding and addressing the paradox

- The “missing middle”: information on the intervening steps in the results chain involving activities, outputs and services provided, and their outcomes*
- Need detailed evidence linking implementation processes to actual health outcomes in the field
- This “missing middle” is an Achilles heel underlying management decisions and processes that affect program implementation

*Booth D and Lucas H 2001 *Desk Study of Good Practice in the Development of PRSP Indicators and Monitoring Systems: Initial Review of PRSP Documentation*. London: Overseas Development Institute.

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What is implementation research?

- Research on the barriers and facilitators to implementing policies, programs, or practice
- Research to improve the implementation of policies, programs, and practice
- Research to see if what was intended-to-be-done was done-as-intended

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Characteristics of implementation research

- Operational and action oriented
- Focused on the “how” not the “what”
- Examples
  - Effect of death audits on quality of care
  - Effect of financial allocations on health system impact
  - Effect of staff training or supervision on performance
  - Effect of community participation on health outcomes

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Why is it needed?

– Many evidence-based interventions fail to produce results when implemented as programs because effective delivery methods are untested, unsuitable, or incomplete.

- How to best recruit and train staff?
- What are the most effective supervisory methods?
- How to most effectively engage communities?

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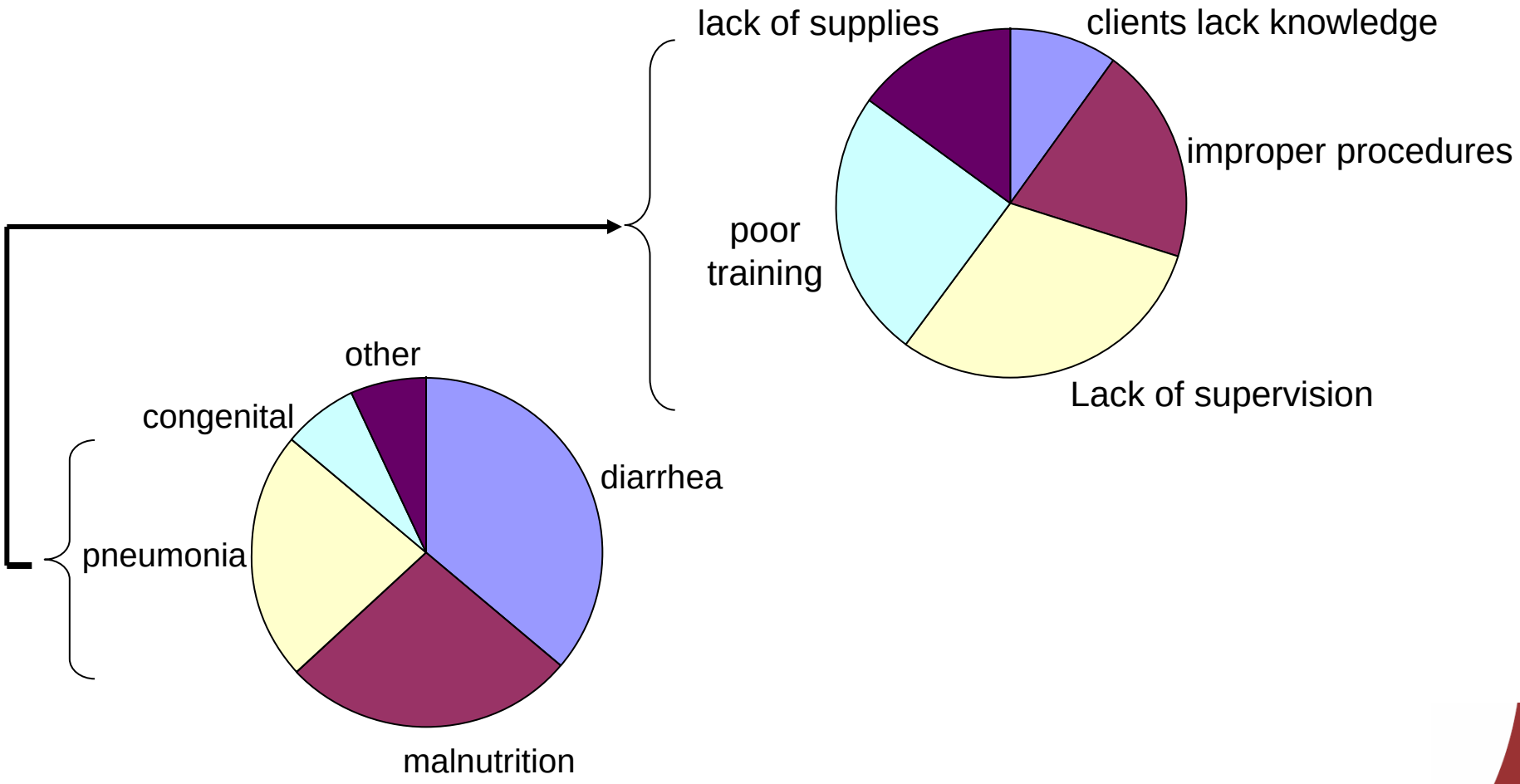
If a death is preventable
…..then the cause of death is operational



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Implementation research

- Where are we now?
  - Public health scientists have not viewed implementation as a dynamic process needing adaptation to different settings and scale
  - Planners often assume research can be translated into a “one-size-fits-all” program without systematic local adaptation
  - There are some examples of success

How to effectively mobilize communities?

- Women's groups
- Care groups
- Community Health Workers

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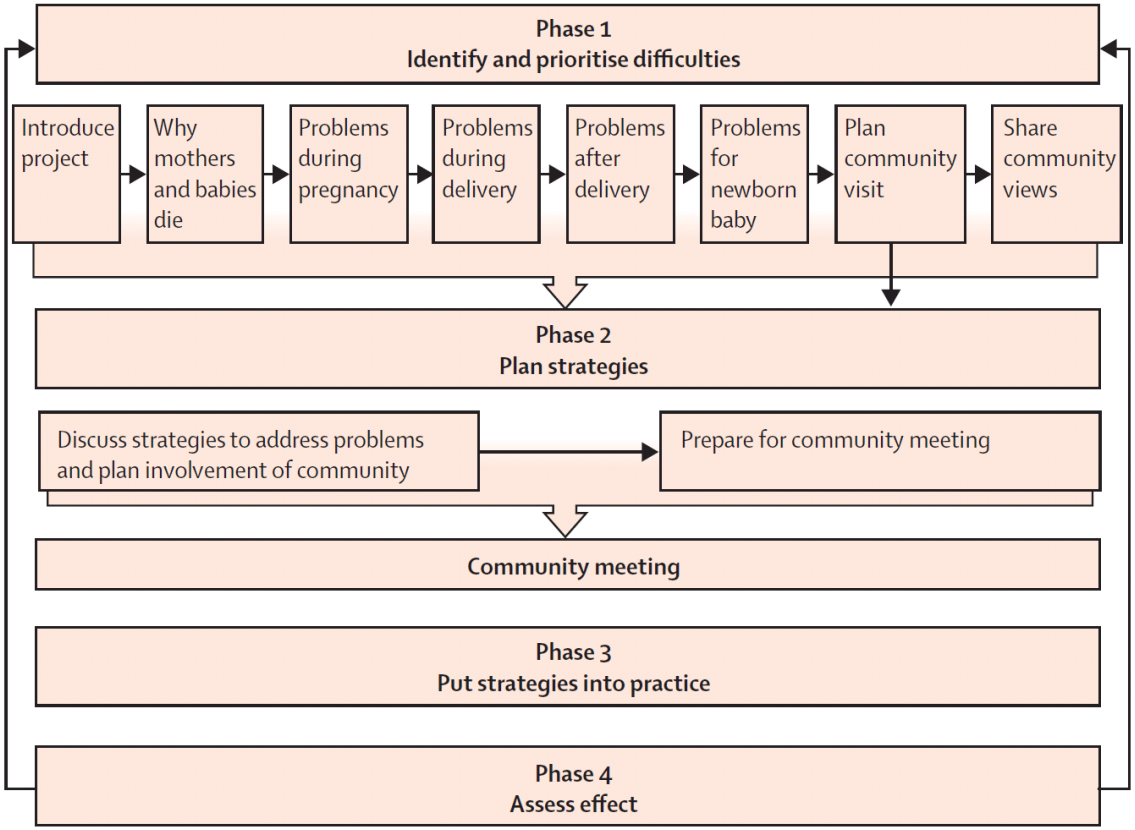
Impact of women's groups

Women's groups

- India (Tripathy P et al. Lancet 2010; 375: 1182)
  - NMR odds ratio 0·68 (95% CI 0·59–0·78)
- Bangladesh (Azad K et al. Lancet 2010; 375:1193)
  - NMR risk ratio 0·93 (95% CI 0·80–1·09)
- Nepal (Manandhar et al. Lancet 2004; 364: 970)
  - NMR odds ratio 0·70 (95% CI 0·53–0·94)



Intervention carried out as a cluster randomized trial

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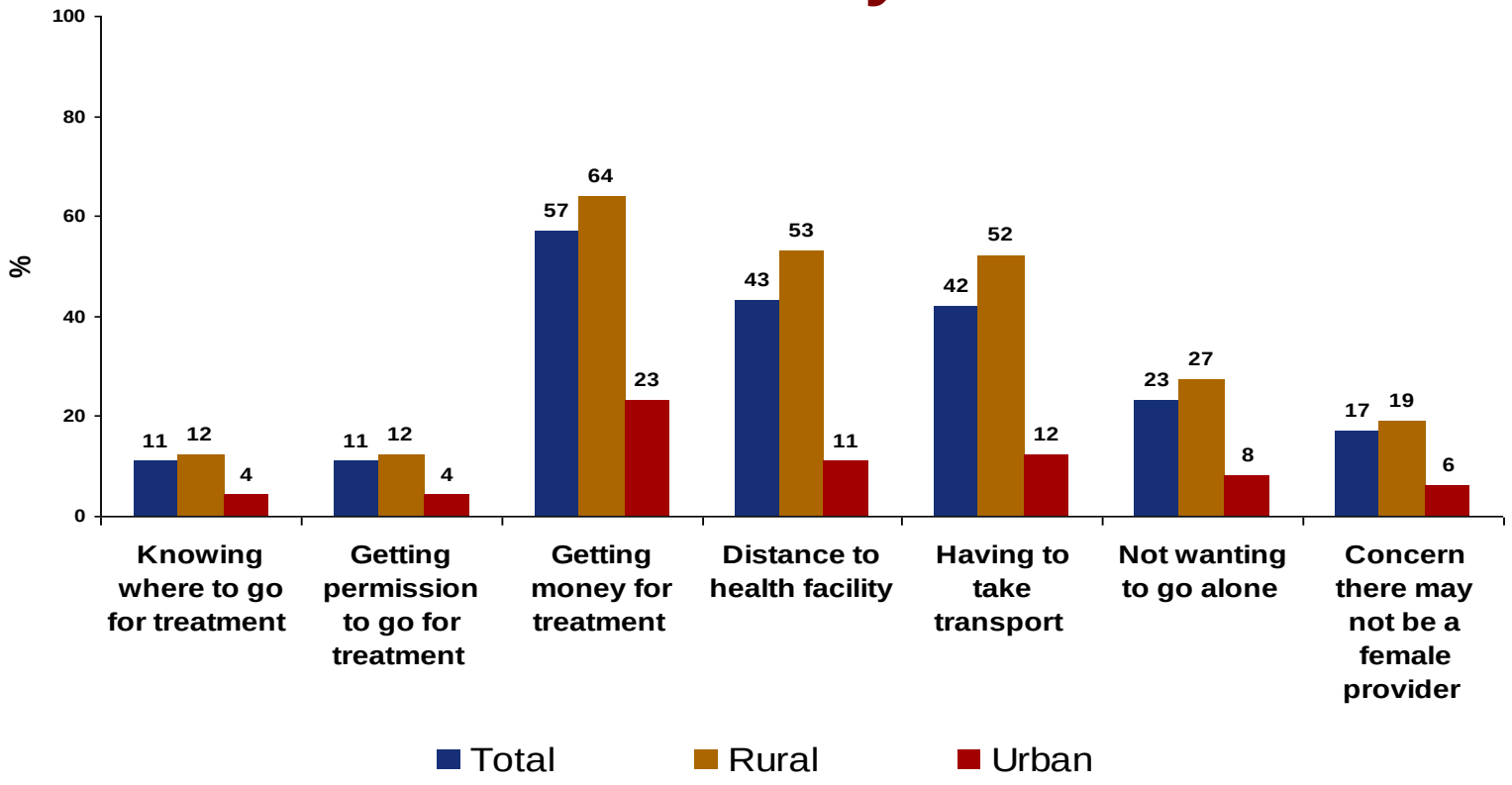
Urgent need to overcome barriers to health facility access



DHS Data from 26 African countries (N= 226350 women), compiled by WHO/MPS

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How can financial incentives be effectively used?

- Systematic review: Conditional cash transfer programs are effective in increasing the use of preventive services and sometimes improving health status. (Lagarde M et al. JAMA. 2007;298:1900)

- Research is needed to clarify the cost effectiveness of conditional cash transfer programs and understand which components play a critical role

- The success and desirability of such programs in low-income settings needs investigation

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Janani Suraksha Yojana (JSY) Safe Motherhood Program in India

- Conditional cash transfer program to increase births in health facilities (Lim SS et al. Lancet 2010; 375: 2009)
  - Eligible women receive ~US$ 13-31 after delivery in a gov't or accredited private facility (US$ 11 for home delivery)
  - Accredited social health activists (ASHA) implement the program at the community level and receive US$ 4-14 per assisted delivery
- Perinatal deaths reduced 3·7 (95% CI 2·2–5·2) per 1000 pregnancies
- Neonatal deaths reduced by 2·3 (95% CI 0·9–3·7) per 1000 livebirths
- Increase of 36·6% (35·6 to 37·7) in skilled birth attendance

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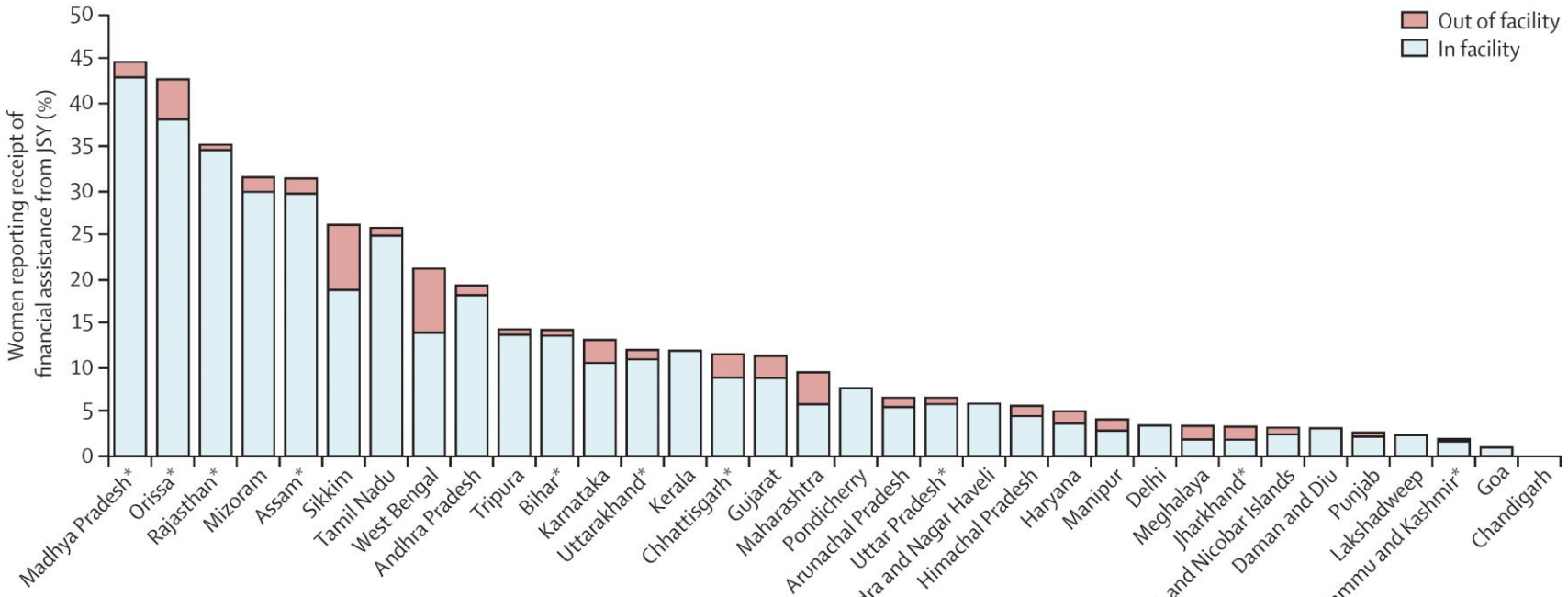
Proportion of women receiving JSY assistance in the past year was variable



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How to improve facility based care and impact?

- Audit and feedback (Pattinson R et al. IJGO 2009 107:S113)
- Use of checklists (Haynes AB et al. NEJM 2009 360:491)
- Quality assurance on multiple levels (ongoing)
  - QUARITE: cluster-randomized trial to evaluate Advances in Labour and Risk Management (ALARM) International Program.
  - Training of facility staff in evidence-based practice
    - Evidence based practice for maternity care
    - Health personnel performance
      - Educational outreach visits
      - Implementation of facility-based maternal death reviews
- Maternity waiting homes?
- Clean birth kits?

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Perinatal death audits

Identify and review perinatal deaths and discern causes and implement solutions

Reviewed by Pattinson R et al. IJGO 2009 107:S113

Fig. 1. Six-step cycle for perinatal mortality audit.

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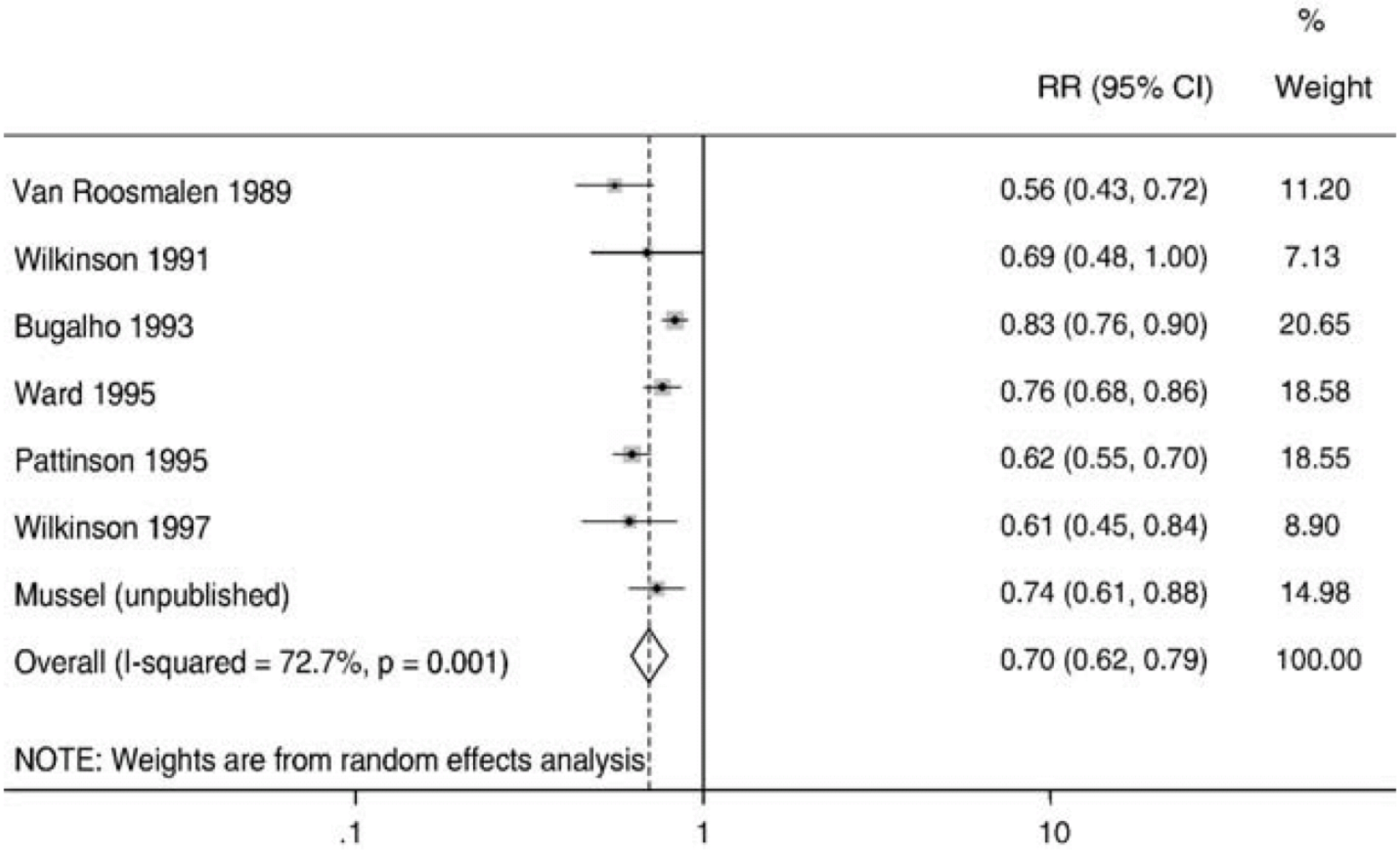
Effect of perinatal audit on perinatal mortality rate in low- and middle-income countries.



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How to enhance human resource practices so that health is improved?

- No systematic evidence of most efficacious strategies for recruitment, training, retention, supervision for routine programs in low and middle income countries (Chopra et al. Lancet 2008 371:668)
- Urgent need to assess:
  - Supervision and feedback
  - Impact of enhanced training or in service trainings
  - Task shifting
  - Work environment: salary and other factors

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Supervision of community health workers in Indonesia

- CHWs based in community and asked to promote ANC, nutrition and skilled attendance at delivery
- Monthly staff performance scores:
  - Head: Knowledge of job task
  - Hand: Task errors and on time & error in reporting
  - Heart: Feedback from clients and supervisor
- Supervisors work as coaches in non-punitive system to help staff improve CHW performance

SUMMIT Study Group, Lancet. 2008 371:215
Shankar AV et al., Food Nutr Bull 2009 30:S207

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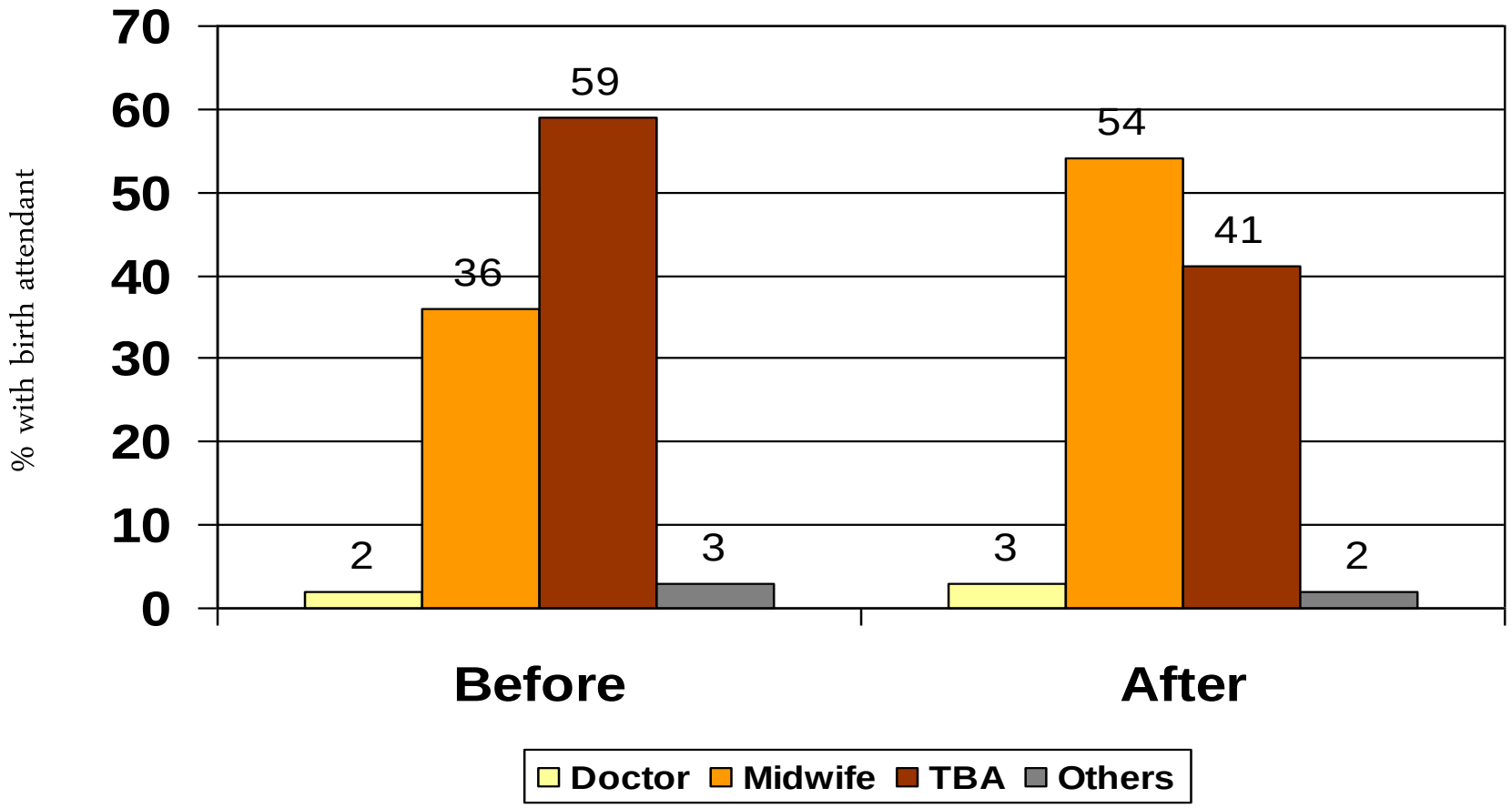
Change in delivery by skilled attendant



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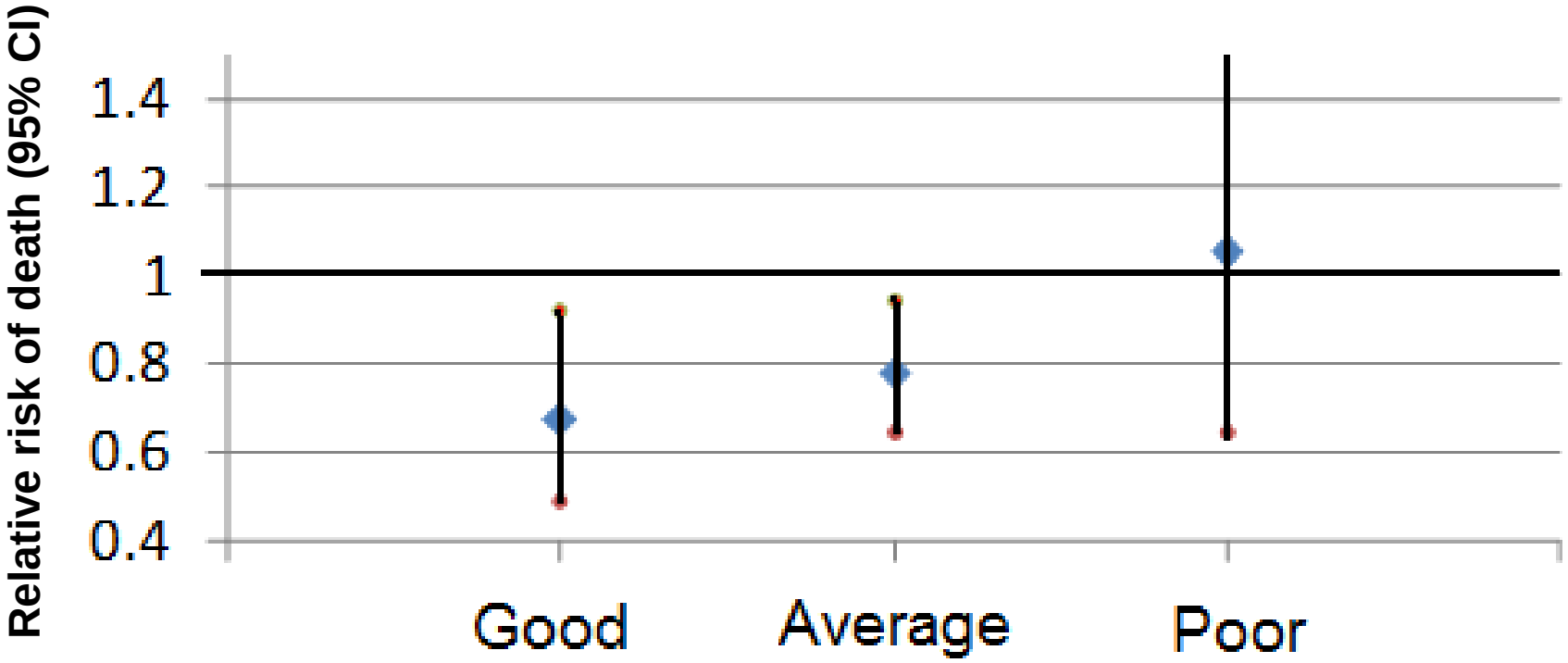
Performance of community facilitator and impact of intervention on infant death



Shankar AV et al., Food Nutr Bull 2009 30:S207

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Summary for implementation research

- Urgent need to invest in implementation research to identify effective strategies for delivering proven interventions at scale and quantify their impact

- Utilize rigorous methods to assess what enables programs to work best at scale:
  - Conventional randomized controlled trials
  - Other approaches:
    - Cluster randomized step wedge design
    - Large scale ongoing program impact assessment

- Establish reliable routine monitoring and use of data into programs

- Determine paths to success based on local health system and context:
  - human resource practices
  - Quality of care and implementation
  - Sustainability for both impact and financial perspectives