

Systematic Literature Review of Quality Improvement Approaches for Small and Sick Newborns

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Findings from Systematic literature review

Zaka et al. *Implementation Science* (2018) 13:20
DOI 10.1186/s13012-018-0712-2

Implementation Science

SYSTEMATIC REVIEW

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Quality improvement initiatives for hospitalised small and sick newborns in low- and middle-income countries: a systematic review

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Abstract

Background: An estimated 2.6 million newborns died in 2016; over 98.5% of deaths occurred in low- and middle-income countries (LMICs). Neonates born preterm and small for gestational age are particularly at risk given the

Study Objectives

1

To identify and categorise quality improvement approaches for small/sick hospitalised newborns in LMICs

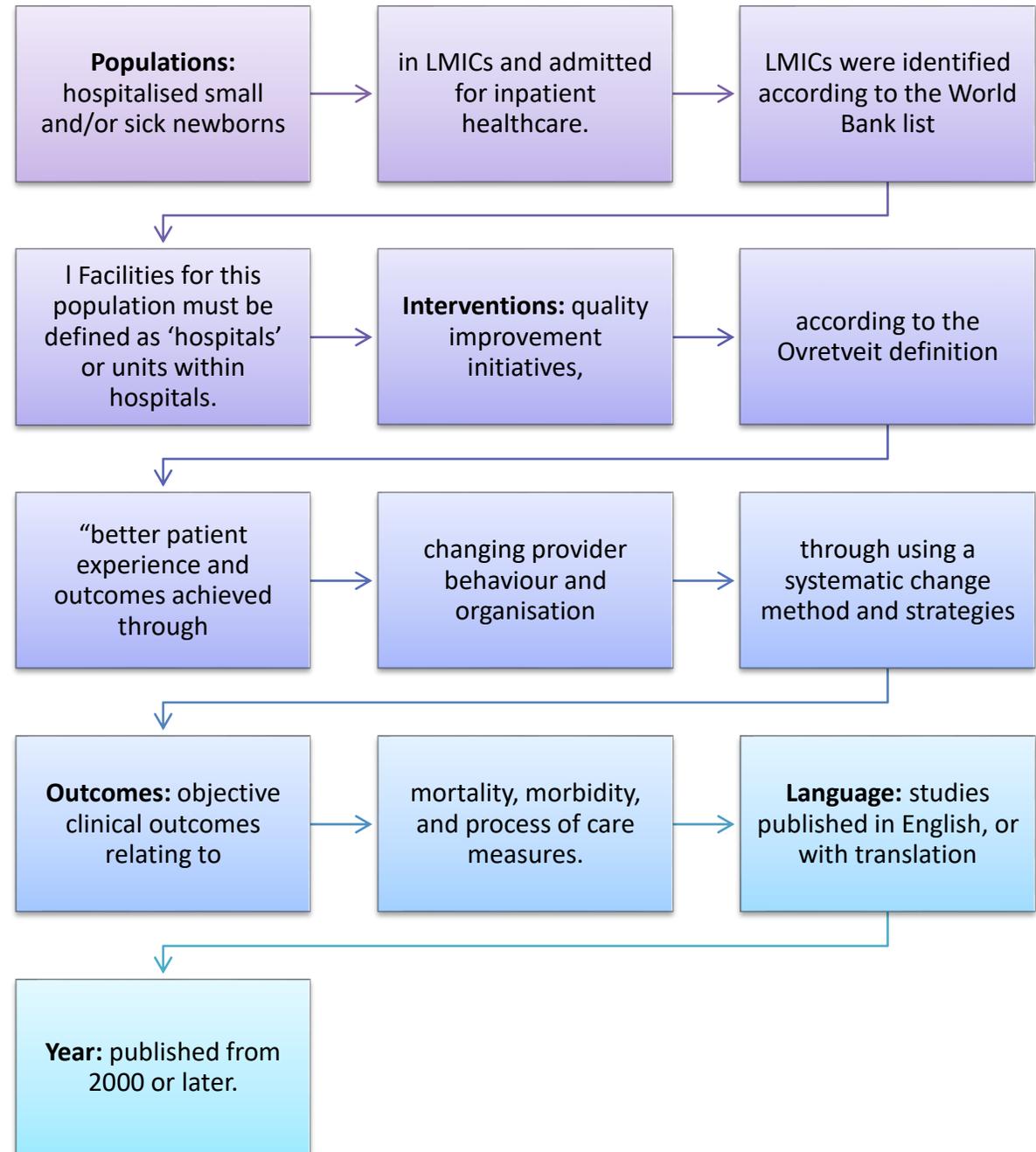
2

To identify and categorise outcomes investigated by quality improvement initiatives for small/sick hospitalised newborns in LMICs

3

To identify barriers and promoters, at a local level and systems level, to the implementation of quality improvement initiatives for small/sick hospitalized newborns in LMICs

Methods



Study Selection

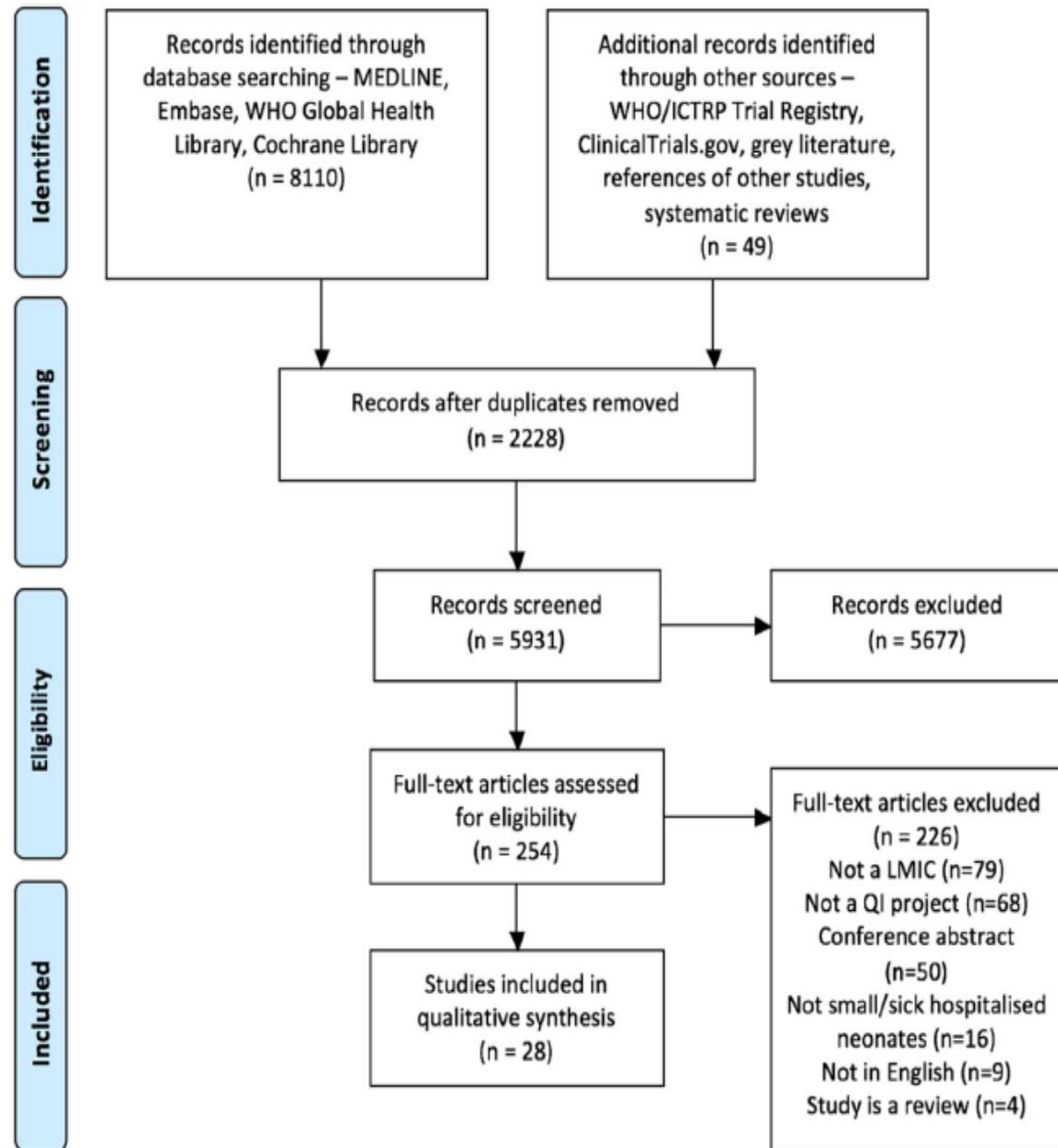
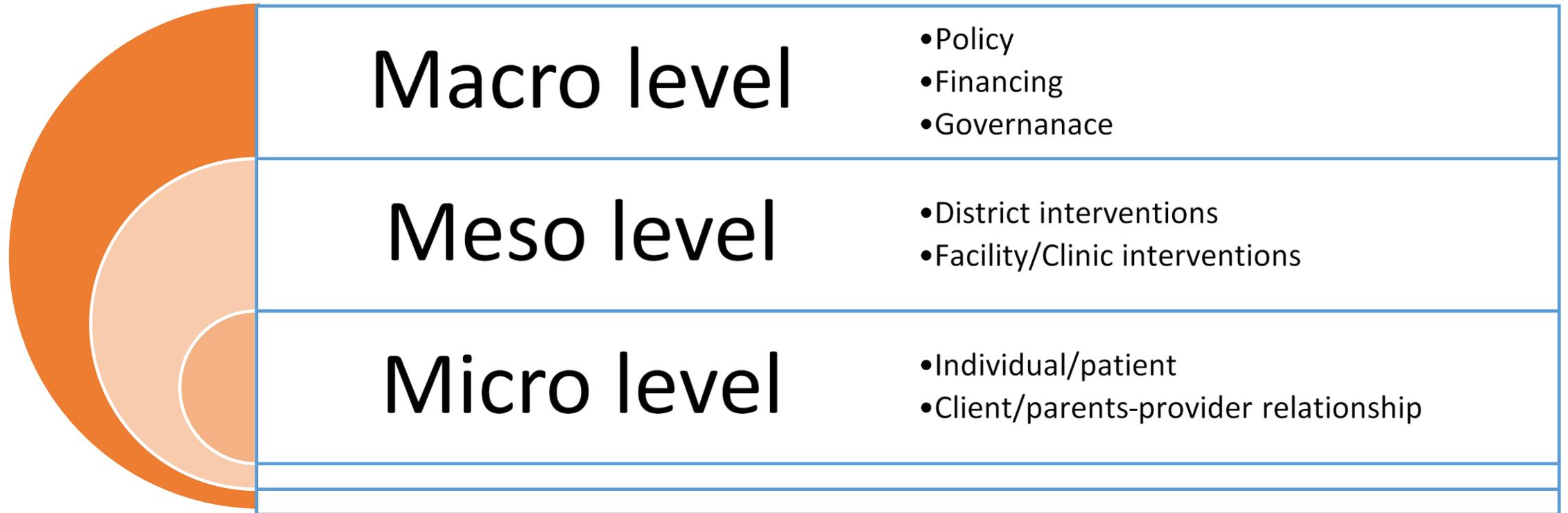
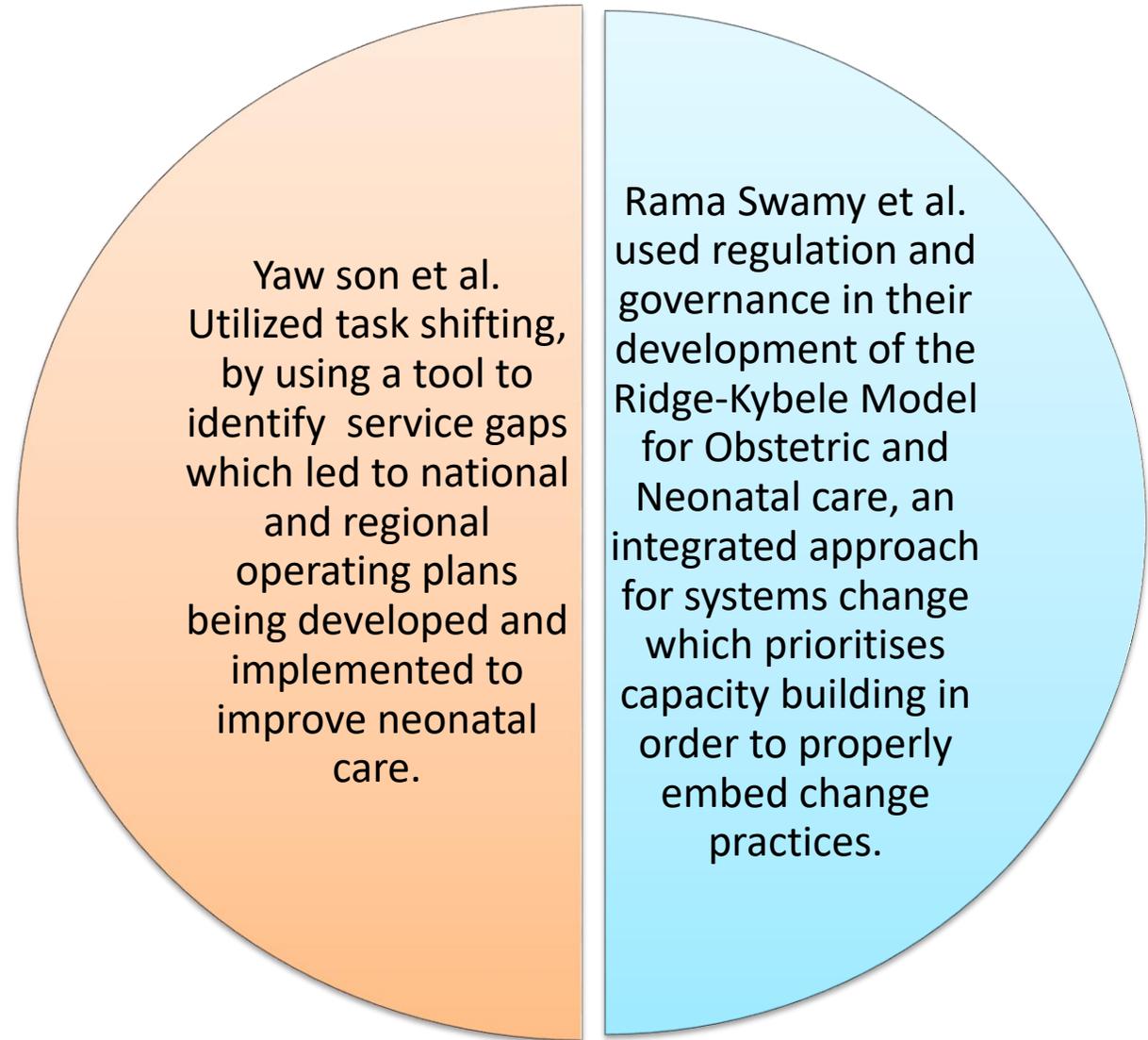


Fig. 1 Screening strategy for included studies (PRISMA flow diagram) [75]



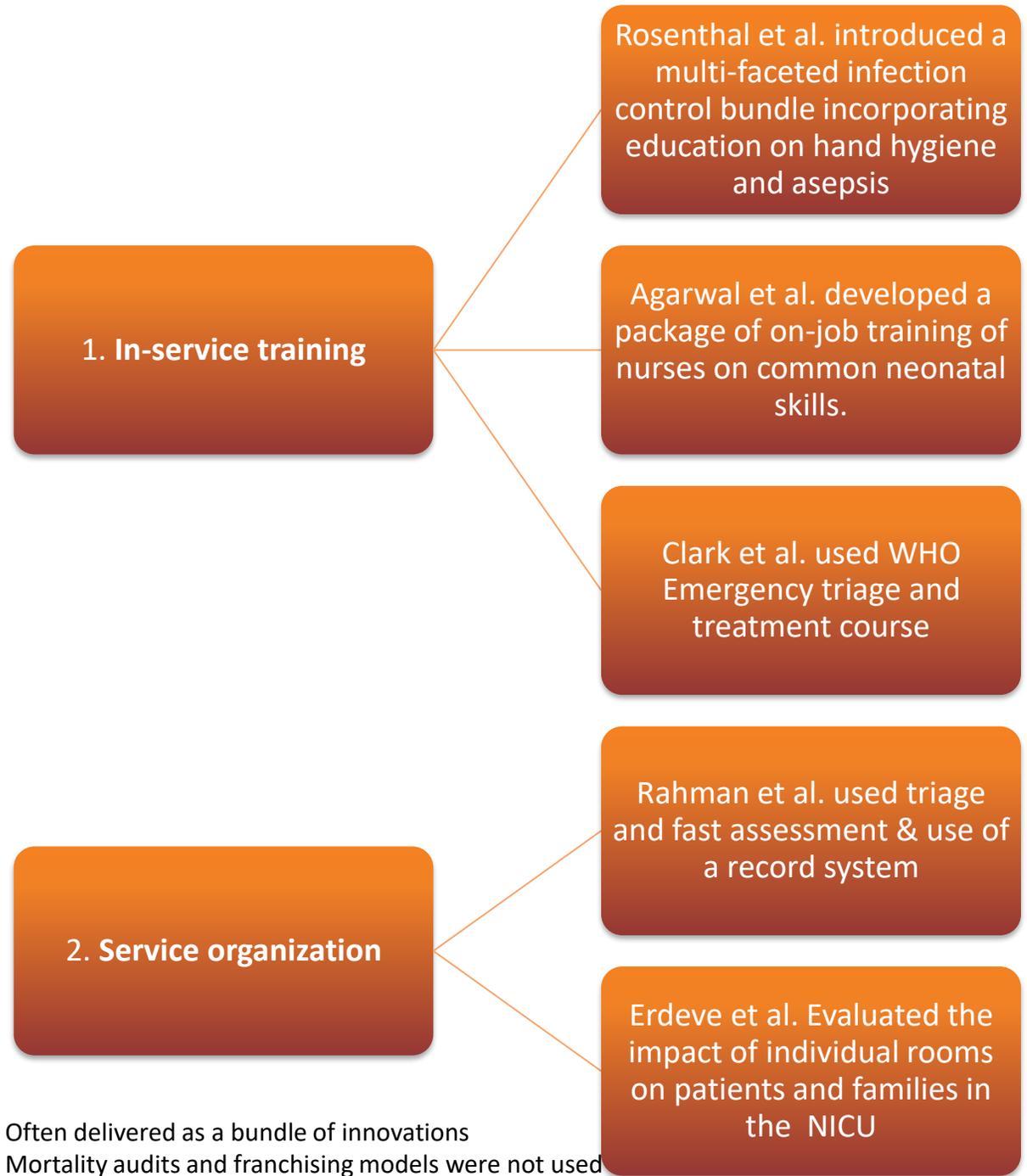
Classification of QI
approaches

Macrolevel Interventions (2)



No studies were found for particular methods including pay for performance, other financing incentives, pre-service training, and external to health system

Meso level Interventions (20)



Often delivered as a bundle of innovations
Mortality audits and franchising models were not used

Micro-level
(8 studies)

Distribution of Referencing materials to providers

Dissemination of a new protocol for low birth weight babies

Implementation of new guidelines

Promoters and Barriers

Promoters

Motivation of key individuals

Importance of local champions

Good quality data imp for QI

Structured community relationships

NGO collaboration, MoH support

Barriers

Over-burdened staff/competing demands

Insufficient equipment (paper supplies running low and no computerized patient records).

Increasing demand for hospital services and lack of finances for necessary medicine

Staff turn-over or re-distribution

Groups of
outcomes
measured in
quality
improvement
approaches

Safe care: 13

Effective Care: 5

Efficient care: 2

People centred care :2

Equitable care:0

Key Learnings (1)

The most frequently assessed outcomes were mortality rates, sepsis and infection rates.

These studies demonstrate the potential for QI to produce swift and significant benefits for this vulnerable patient group.

Majority of the included studies were non-randomized before - after studies, and a review by Schouten et al. found that observational studies tend to demonstrate larger effects than more rigorous designs

Studies with greater involvement of family members reported significant positive results for mortality, sepsis, and re-admission rates, suggesting this area could be explored further

It will be important to focus future QI efforts on sepsis due to rising rates of antibiotic resistant infections and sepsis in this group

Key Learnings (2)

Several studies benefitted from focusing their efforts on single pathologies (ventilator-associated pneumonia, central line-associated blood stream infections) for quality improvement, which allowed for collation of findings across multiple centres

In service trainings as QI approach and the need for control groups

Barriers and facilitators can provide insights for programme improvements

QI approaches are heavily data dependent and programmes can benefit by investing in improving standard metrics and quality of data

Mortality audits were not utilized by any of the included studies

The bottlenecks of health financing, health workforce, data and community engagement need more varied approaches to implementation and research, especially at Macro level

Limitations

The heterogeneity of our study population, the QI interventions and multiple outcome measures were key challenges.

Community based interventions not included

Publication bias as many QI approaches not published

Did not capture qualitative elements as parent experiences

Only papers from 2000 and in English language were included

Limited equity analysis information available

Recommendations

1

Targeted resources will be needed to strengthen human resource capabilities for implementation research into quality improvement for small and sick newborn care and to document outcomes, costs, and lessons learnt.

2

QI implementation should take place in tandem with strong data collection and monitoring.

3

More investments required in QI implementation research in LMICs (research in high income settings not applicable)

4

Small and sick hospitalised newborns in LMICs are a population at the highest risk, they should be one of the prime beneficiaries of quality of care interventions and investments.



Thank you