

Evidence from the systematic review on models of care for child and adolescent TB

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PICO question 6

- **Review the evidence for the impact of care models of interest on TB outcomes for children and adolescents (0-19 years old) in high-burden settings**
 - A: Impact of decentralized care on diagnosis and treatment outcomes
 - B: Impact of decentralized care on prevention outcomes
 - C: Impact of integrated and family-centered care on diagnosis and treatment outcomes
 - D: Impact of integrated and family-centered care on prevention outcomes



Methods

- **Sources of studies**

- Database searches (6 databases)
- Manual review of 17 systematic and non-systematic reviews
- Data requested from ongoing unpublished studies

- **Inclusion criteria**

- Comparative studies where intervention was one of the care models of interest
- Outcome available for an age group in the 0-19 range
- Country with estimated 2019 TB incidence ≥ 100 per 100k or on WHO TB priority country list

Identification

Records identified via database searches
(N=4486)

Additional records identified via manual search of 17
systematic and non-systematic reviews
(N=129)

Records after duplicates removed
(N=3265)

Unpublished dataset identified by WHO GDG
(N=1)

Screening

Abstracts screened
(N=3265)

Excluded: outcome of interest not included or
adults only
(N=2878)

Eligibility

Full-text articles assessed for eligibility
(N=516)

Excluded:

- Not a priority country (n=28)
- No outcomes of interest (n=37)
- No children/adolescents (n=34)
- Data not age-disaggregated (n=237)
- Care model not sufficiently described (n=14)
- Not care model of interest (n=25)
- Insufficient comparative data (n=135)
- Could not access article (n=6)

Included

Comparative studies evaluating decentralized,
integrated, or family-centered care models
(N=25)

Total identified studies
(N=26)

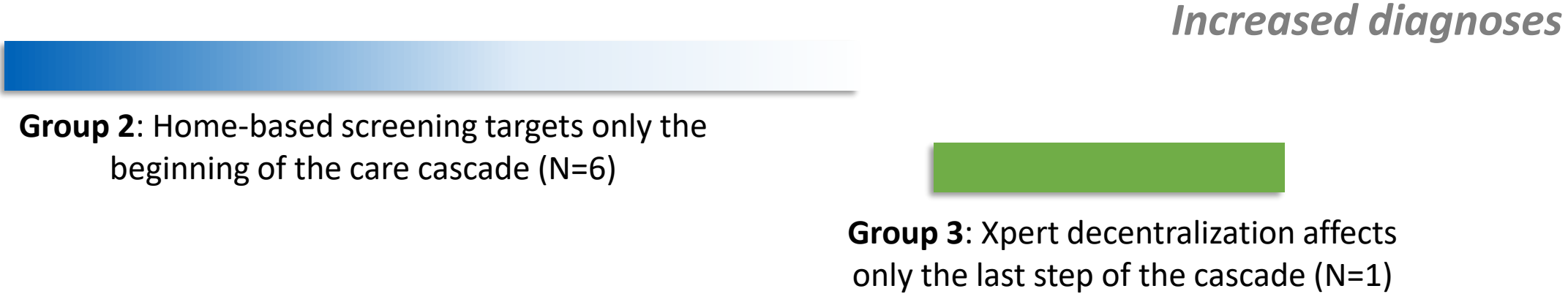
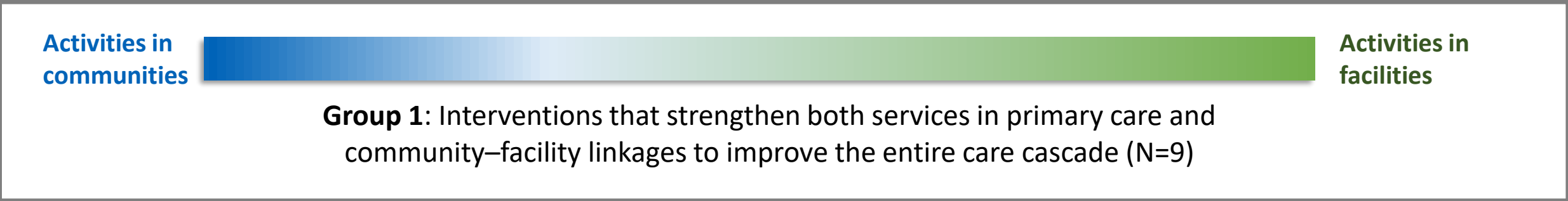
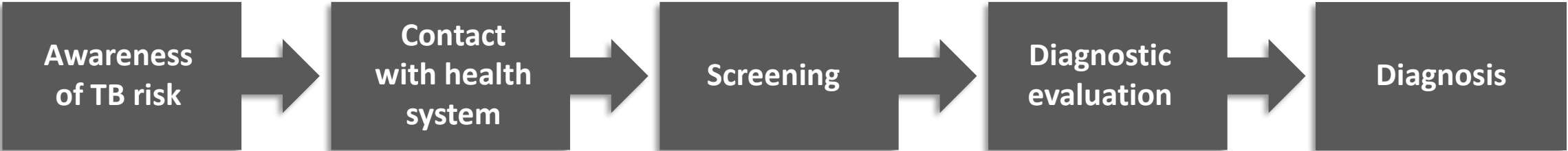
Studies identified

- **26 studies with comparative outcomes identified**

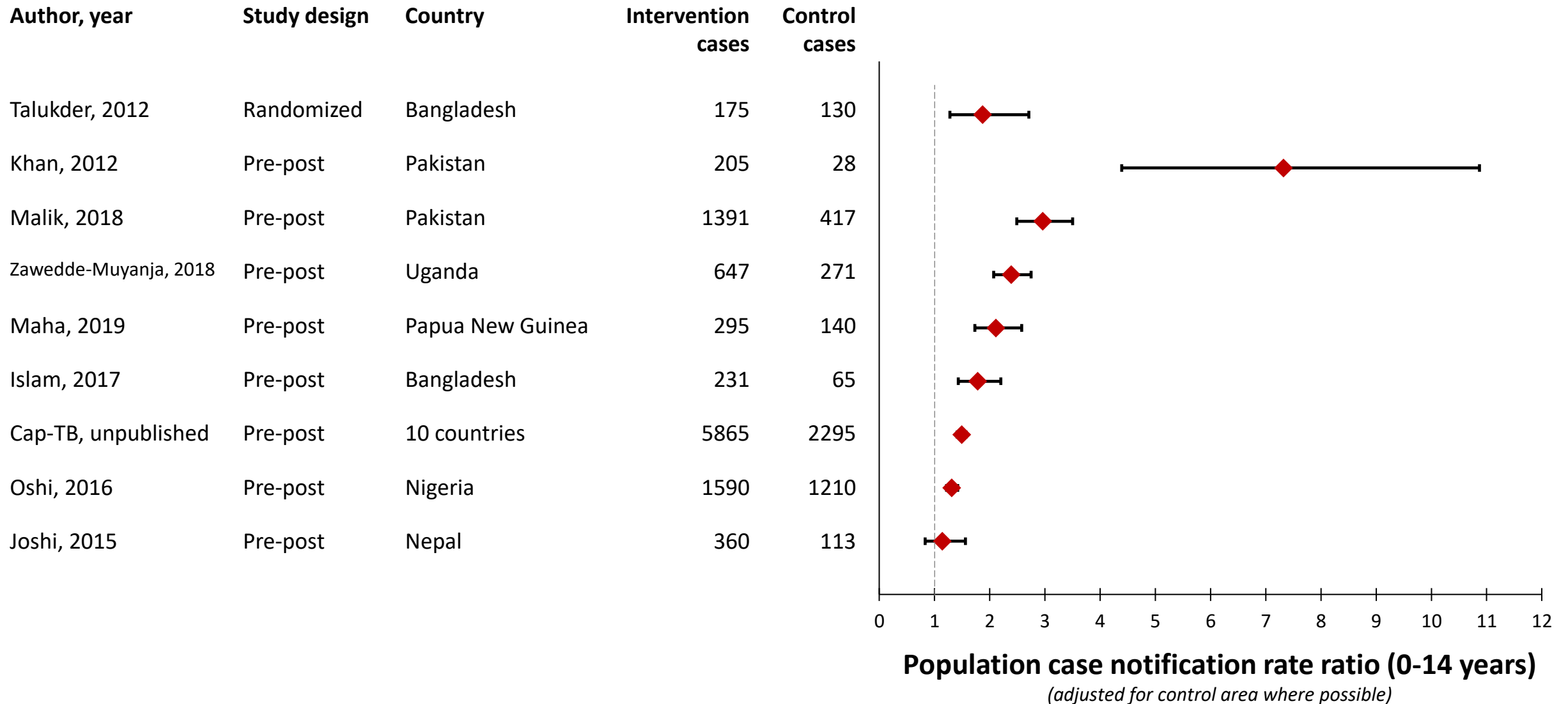
- From 12 countries in Africa, Asia, and the Americas
- 7 randomized trials, 15 pre-post interventional studies, 4 cohort studies

| Type of outcomes | Decentralized care | Integrated care | Family-centered care |
|--|--------------------|-----------------|----------------------|
| Case notifications or diagnoses | 16 | 2 | |
| TB disease treatment | 5 | | |
| TB preventive treatment (TPT) among contacts | 3 | | 2 |

Decentralized interventions to improve diagnosis



Studies with both community and facility activities



Decentralized interventions for TPT

| Summary of study findings | Author: effect estimate (95% CI) |
|--|---|
| TPT initiations increased in studies that both provided home-based screening for contacts and strengthened TPT services in primary-level health facilities | Yassin: 698 vs 0 TPT initiations CaP-TB: 8-fold increase in median monthly TPT initiations per site, $p < 0.001$ |
| Home-based screening alone did not significantly increase TPT initiations; lack of access to x-ray was a barrier | Zachariah: RR 1.27 (0.76-2.12) |

Impact of integrated care on diagnoses

| Summary of study findings | Author: effect estimate (95% CI) |
|---|---|
| Stepped wedge trial from Ethiopia showed that TB screening in Integrated Maternal, Neonatal, and Child Illness clinics led to a small but significant increase in TB diagnoses | Ketema: 0.5 (0.2-0.7) additional diagnoses per IMNCI clinic per 4-month period |
| Pre-post study from Zambia showed that after co-located ART services were introduced into rural health centers, the number of patients 0-14 years old registered for TB treatment increased | Miyano: IRR 2.67 (1.05-6.76) |

Impact of family-centered care on TPT

| Summary of study findings | Author: effect estimate (95% CI) |
|---|---|
| Cluster-randomized trial from Peru showed that providing social support and conditional cash transfers to families affected by TB increased TPT initiation among contacts 0-19 years old | Wingfield: RR 1.70 (1.10–2.64) for TPT initiation |
| Pre-post study from Peru showed that providing social, psychological, and economic support to families affected by TB increased TPT initiation and completion among contacts 0-19 years old | Rocha: - RR 2.23 (2.11–2.36) for TPT initiation - RR 3.22 (2.90–3.57) for TPT completion |

Summary of findings

- Approaches that both strengthen services in primary-level facilities and strengthen linkage from community to health system improve TB diagnosis and TPT initiation
- Positive but limited evidence that integrating services can increase TB diagnoses
- Socioeconomic support for families affected by TB can improve TPT outcomes

Evidence gaps identified

- Heterogeneous, multifaceted interventions prevented assessment of impact of individual intervention components
- Lack of age-disaggregated data in a large number of studies that could have included children and adolescents
- Few studies assessed impact of care integration or family-centered care on child and adolescent outcomes

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