Do community engagement interventions work to improve immunization outcomes in LMICs? How? And why?

Findings from a 3ie systematic review

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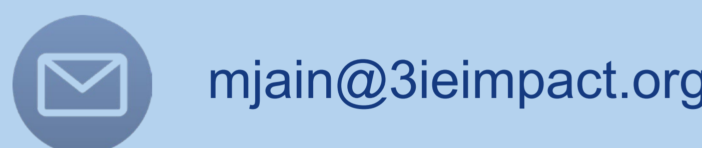

#EvidenceDialogues

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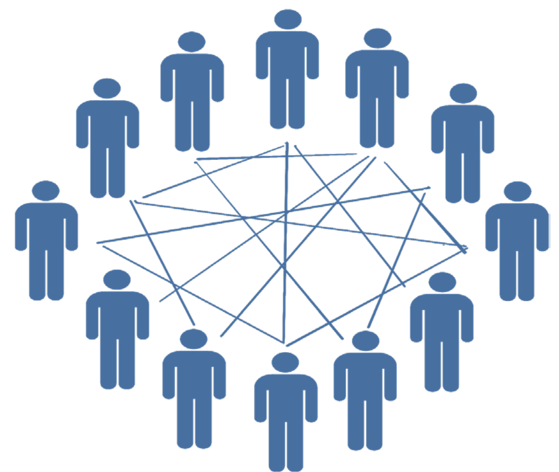
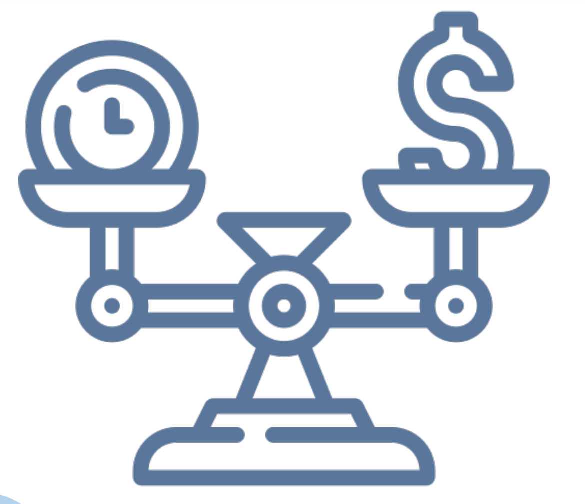
Systematic review objectives



Assess effectiveness of community engagement interventions to improve routine immunization of children in low- and middle-income countries.

Identify factors relating to program design, implementation, and context associated with intervention success or failure



Assess cost-effectiveness of community engagement interventions to improve routine immunization of children.

Defining community

- A group of people who are served by a particular primary health facility

  Kebele in Ethiopia
  Ward in Nigeria
  Sub-center in India

Engagement can be…

- In the design of the intervention
- In the implementation of the intervention
- Embedded in the intervention

Engagement in intervention design

Community input or feedback on intervention is sought *before* the implementation of an intervention

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Examples:

- Asking community members about the size and form of incentives
- Community input in designing reminders
- Feedback on educational tools

Engagement in implementation with some autonomy

When community members involved in the implementation of the intervention have some opportunity to affect or influence its implementation

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Examples:

- Community led beneficiary selection
- Community leader involvement in outreach activities and defaulter tracing

Engagement embedded in intervention

Community-based interventions with a serious attempt to gain *community support*

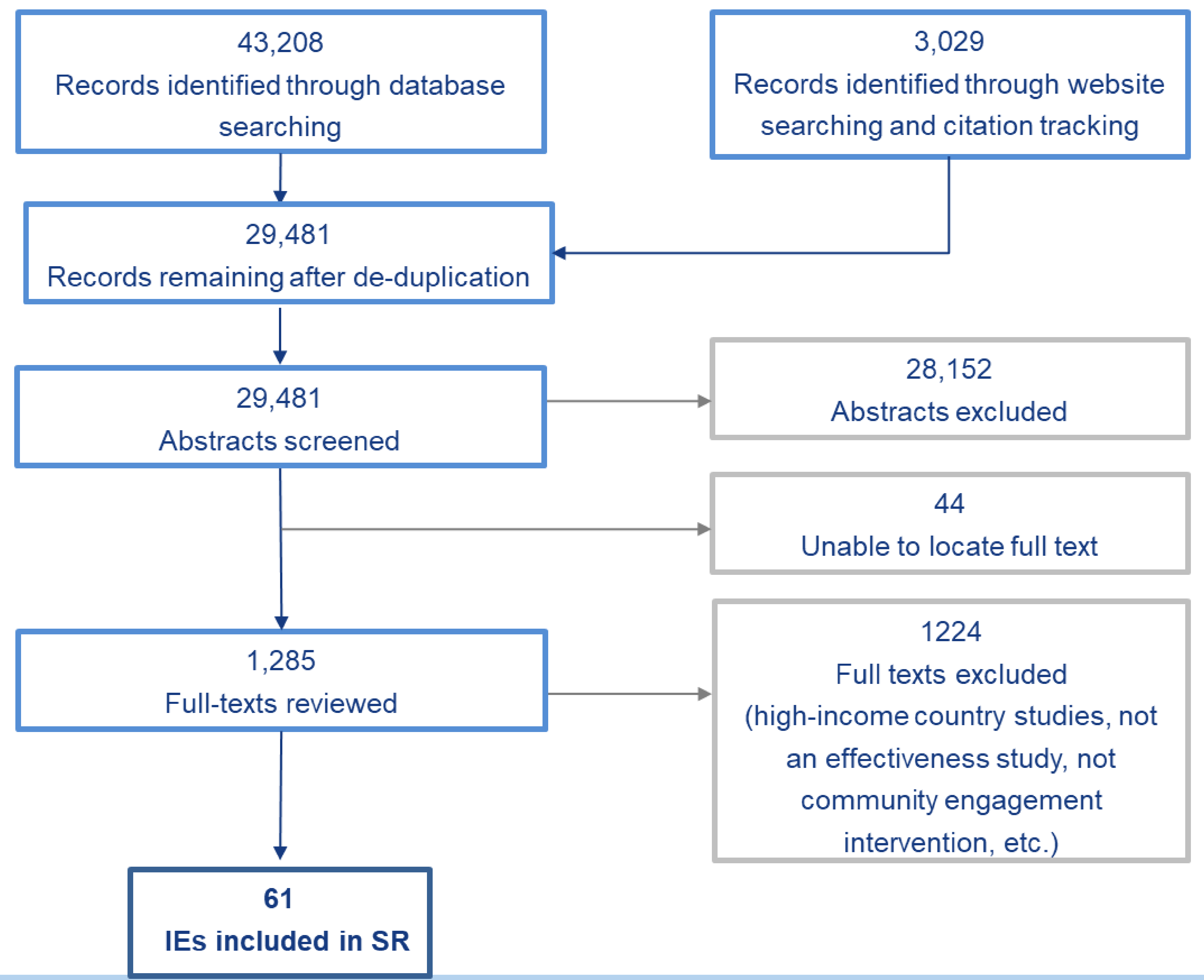
Engagement embedded in intervention

Community-based interventions with a serious attempt to gain *community support*

Examples:

- Creation of village health committees or community groups such as community health workers, women's group, etc.
- Day for immunization and community dialogue (immunization camp)

PRISMA diagram of search and screening process



Evidence Base

Type of analysis	Evidence base
Meta-analysis	56 primary studies
Qualitative synthesis	61 primary studies and associated 47 qualitative papers and 69 project reports
Cost effectiveness	14 primary studies

Number of evaluation studies by type of community engagement

Type of community engagement	Number of studies
Engagement embedded in intervention	27
Engagement in design	16
Engagement in implementation with some autonomy	5
Multiple*	15

*This category includes interventions with more than one engagement classification.

Distribution of studies by geography

Mexico- 1
Guatemala- 1
Honduras- 1
Nigeria- 8
Ghana- 1
Ethiopia- 1
Uganda- 2
Kenya- 3
Tanzania- 1
Zimbabwe- 3
Zimbabwe- 1
Madagascar- 1
South Africa- 1
Afghanistan- 2
Pakistan- 4
India- 21
Nepal- 1
Bangladesh- 4
Indonesia- 1

Included studies by country

- 1-5 Studies
- 6-10 Studies
- 11-15 Studies
- 16-20 Studies
- 21-25 Studies

Summary of meta-analysis results

	For complete evidence base	Engagement embedded in the intervention	Engagement in the design	Engagement in implementation (some autonomy)	Multiple Engagement Types
Full immunisation	0.14**	0.08**	0.10*	0.23	0.22
Measles	0.07**	0.10***	0.11*	0.03	0.03
DPT3	0.10***	0.09**	0.04	0.11	0.20**
Timeliness (Full immunization)	0.15***	N/A	0.15*	0.38	N/A
Timeliness (DPT3)	0.10***	N/A	0.12***	0.04	N/A

* $p < .05$
** $p < .01$,
*** $p < .001$

Factors underlying intervention success or failure

Contextual factors

- Interventions that ignored contextual factors during design tended to fail
- Common contextual barriers:
  - transport or opportunity costs
  - logistics
  - distance
  - limited availability of services
- Contextual enablers:
  - positive caregiver perception of immunization
  - availability of health services

" Discussions in our focus groups confirmed the importance of poverty as a barrier to vaccination in many cases, as parents described being unable to afford the costs of the supposedly "free" immunisations: travel costs, opportunity costs, and demands for unofficial payments."

(Andersson 2009, pg 10)

Intervention features

- Community engagement features associated with intervention success included
  - Conducting stakeholder consultations
  - Holding community dialogues
  - Involving community leaders
- Non-engagement features were also important, e.g.,
  - incentives to caregivers
  - Leadership and supportive supervision to health workers

> *"Interviewees spoke of the tangible benefits of the community dialogues and proactive household approaches as expanding access, improving relationships with communities, and increasing knowledge and uptake of services."*
>
> *((Padayachee, 2013, pg. 76))*

Implementation challenges

- Low fidelity was a common reason for intervention failure
- Interventions did not properly account for realities on the ground
  - Irregular internet or limited cellphone service
  - Health worker availability
  - Political instability
- Administrative challenges were common:
  - technical
  - political
  - staffing

" This intervention was designed on the expectation that the text message portion could be rolled out in tandem with the ECIIN, an immunization tracking program that planned to have HEWs report immunization dates, mother's data, child's data, using text messages. Due to data issues and conflict in the region ECIIN was discontinued."

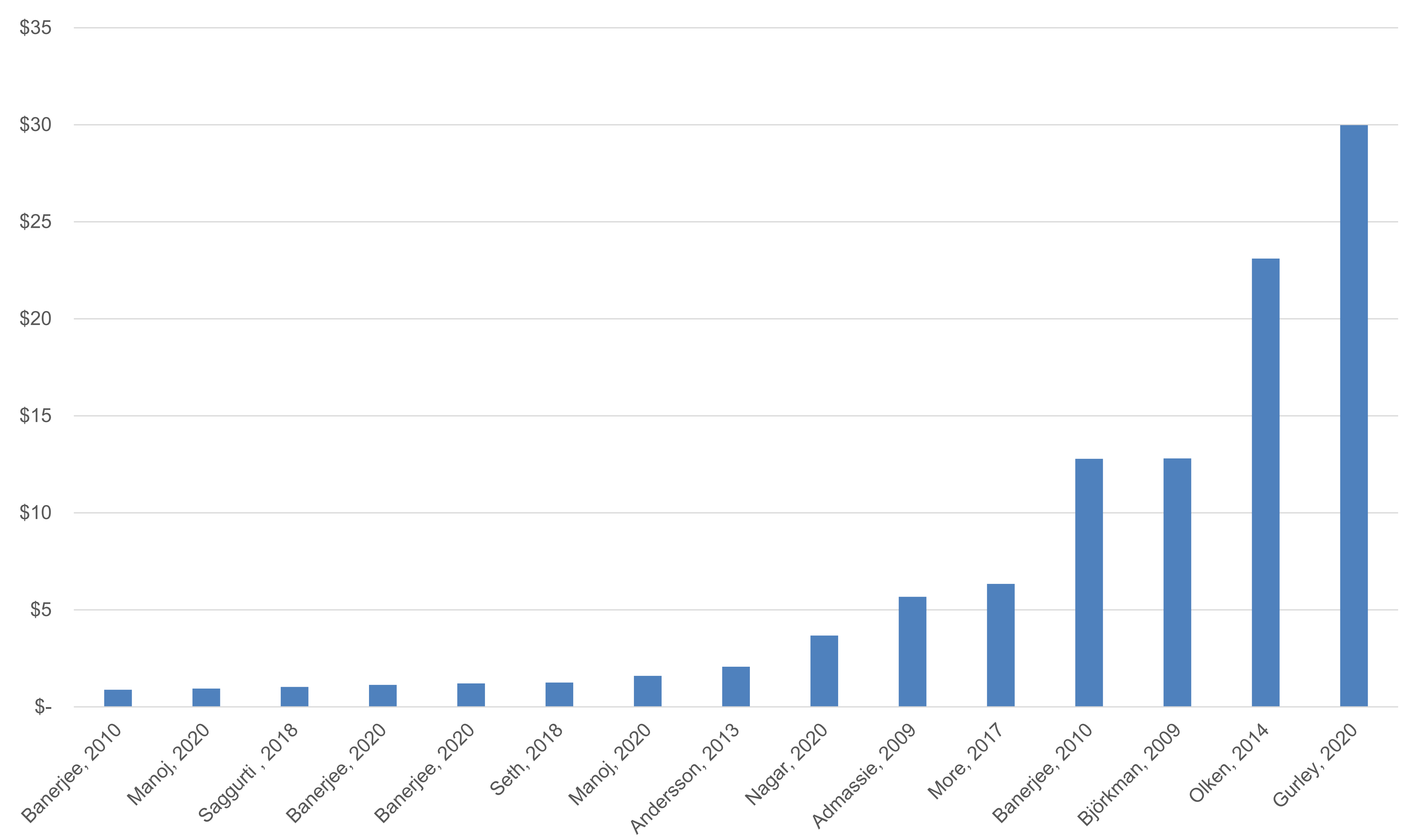
(Demilew 2020, p34)

Cost-effectiveness of community engagement interventions

The median intervention cost per treated child per vaccine dose (excluding the cost of vaccines) to increase absolute immunization coverage by one percent was US **$3.68** (all costs are reported in 2019 US dollars)

Range of cost-effectiveness

The range of cost-effectiveness estimates varied from a minimum of US $0.88 to a maximum of US $29.98



Implications for policy and practice

- Community engagement interventions are an effective tool to improve immunization outcomes of children.
- Engagement embedded in intervention has the strongest effects
- Reasons consistently cited for intervention success include:
  - Appropriate intervention design, including building in community engagement features
  - Addressing common contextual barriers to immunization and leveraging facilitators
  - Accounting for preconditions like regular internet service or sufficient staffing,
- Systematic cost comparisons by outcome are feasible
  - Decisionmakers can choose interventions based on impacts AND cost

Implications for research

- Clear description of intervention components and characteristics is needed
- Evaluations should consider subgroup analysis to understand equity considerations
- There is a need for more rounded analysis of why the interventions worked through mixed-methods evaluations
- Researchers must pay attention to the quality of cost related data and costing methods for improving cost analysis

Major limitations

- Limited number of studies looking at each intervention type & outcome of interest.
- Most community engagement interventions are part of combined packages of interventions.
- Limited availability of cost data.

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