

# Interventions to Address the Global Underreporting of Pediatric and Adolescent Tuberculosis: A Systematic Review

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## Background

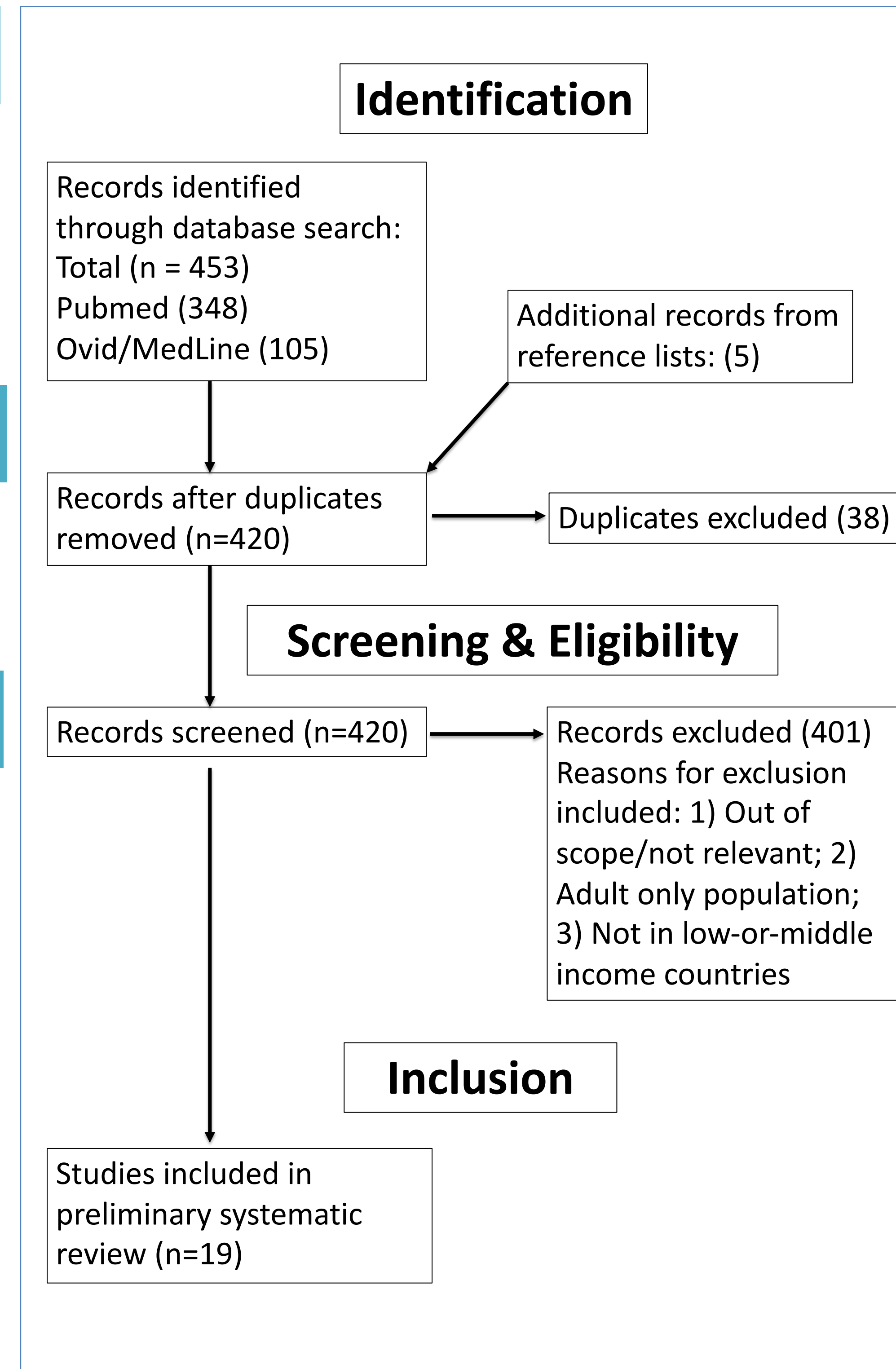
The WHO currently estimates that at least a third of pediatric and adolescent tuberculosis (TB) cases go untreated or incompletely treated each year. Many cases are detected but lost to follow-up due to underreporting to national or private surveillance systems.

## Objectives

- To describe the reporting gap in pediatric and adolescent TB globally
- To identify current interventions being used to close this gap

## Methods

- Followed PRISMA guidelines for systematic review
- Searched PubMed and Medline/Ovid databases and references/bibliographies of included works in Spring 2021
- Inclusion criteria:** Articles published in English within the past 30 years that included pediatric/adolescent populations, in low- and middle-income countries (LMIC) and high burden countries, discussing underreporting of TB.
- Exclusion criteria:** Articles that did not include these populations/regions and did not discuss the reporting gap in pediatric/adolescent TB.
- Search terms included: variations of "pediatric tuberculosis," "underreporting," "reporting gap," "notification," and "registration"



## Results

**16-98% of cases are not reported to national TB registers in over 20 countries**

**More underreporting in higher burden areas, private/rural hospitals, children < 5 years, and those with disseminated disease**

**Interventions include hospital-clinic linkage programs, increased treatment checkpoints following diagnosis, standardized diagnostic criteria, education, death registration**

#	Paper	Year	Country/Countries	Age Range (yrs)	Reported Gap
1	Berman S et al.	1992	South Africa	0-14	44%
2	du Preez et al.	2011	South Africa	0-13	38%
3	Lestari T et al.	2011	Indonesia	0-14	98%
4	Coghlan R et al.	2012	Indonesia Nigeria Pakistan	0-14*	Varied
5	Ade S et al.	2013	Benin	0-14	16%
6	Rose PC et al.	2013	South Africa	0-14	36%
7	Dodd PJ et al.	2014	22 high burden countries	0-15	65%
8	Tollefson D et al.	2016	Kenya	0-55+ (0-24)	20.8%
9	Fatima R et al.	2019	Pakistan	0-14	78%
10	Li T et al.	2019	China	0-65+ (0-15)	19.3%
11	Siddaiah A et al.	2019	India	1-65+ (0-14, 15-24)	76.8%
12	Nzombe P et al.	2020	Zimbabwe	0-14	37%
13	Yaqoob A et al.	2021	Pakistan	0-14	97%
14	Arcott-Mills T et al.	2021	Botswana	0-15	35%
#	Paper	Year	Country/Countries	Age Range (yrs)	Reported Intervention
15	Edginton ME et al.	2006	South Africa	0-55+ (0-14, 15-34)	Establishment of TB care center with registration in hospital, death registration, education and referral
16	Safdar N et al.	2010	Pakistan	0-14	Implementation of standard policy guidelines for childhood TB
17	Joshi B et al.	2015	Nepal	0-14	Intensified early TB case detection with direct registration
18	Wobudeya E et al.	2017	Uganda	0-14	Appointment of national pediatric TB focal person, mentorship in childhood TB care, recording and reporting
19	du Preez K et al.	2020	South Africa	0-14	Dedicated TB referral service within pediatric ward

Yrs, years; \*Indicated pediatric population but did not specify age

## Conclusions and Next Steps

- Many countries have identified a reporting gap, but few interventions exist to close this gap.
- Multiple reviewers and further assessments of heterogeneity and bias will be implemented in the next steps of the project.