alive
Alliance for Living Evidence

Report: Living Evidence Repository and Evidence Maps on Human Papillomavirus Vaccines Delivery

Version 4.0

October 2026

Contributions

Author	Affiliation	Contribution to V4.0 for V1.0 - V3.0please see here (based on the CRediT taxonomy)	Conflicts of interest
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Background and Objectives

Despite the proven efficacy of the human papillomavirus (HPV) vaccines in preventing cervical and other cancers, global coverage remains suboptimal. Challenges in HPV vaccine delivery, accessibility, effectiveness, feasibility, equity and vaccine hesitancy persist across various regions, especially in low- and middle-income countries (LMICs) (1,2). This living repository of evidence on HPV vaccine delivery and the evidence maps based on the repository are developed collaboratively to reflect the priorities of the HPV Living Evidence Partnership community (HPV Living Evidence Partnership). The repository will be continually updated. Based on current funding, we anticipate that the last update will be in early 2027.

Goal

To provide a comprehensive HPV vaccine delivery evidence repository, and maps that identify available evidence and implementation gaps, with the goal of informing policy change and guiding strategic decision-making.

Objectives

1. Identify and describe evidence on HPV vaccine delivery (not screening or disease burden), and evidence that informs planning, implementation, and coordination.
2. Highlight gaps in research and practice to guide future studies and interventions.
3. Support policymakers, public health practitioners, and researchers with an organised repository of evidence.

Scope

This repository focuses exclusively on evidence related to the delivery of HPV vaccination in LMICs.

Thematic focus

Behavioural and social drivers of uptake	WHY do people accept or decline HPV vaccination?
Demand generation and communication strategies	WHAT strategies effectively change vaccination behaviour or demand?
Delivery design and optimisation	HOW should vaccination be structured and delivered?
Service integration and co-delivery	WHAT happens when HPV is delivered alongside other health services?
Equity and hard-to-reach populations	WHO is being missed and how can they be reached?
Health workforce capacity and engagement	What do health workers know, do, and need to deliver HPV vaccination?
Governance, policy and political commitment	WHO decides and HOW are programmes introduced and governed?
Financing and programme sustainability	What does vaccination COST and how is it funded sustainably?
Measurement, data systems and enumeration	HOW is vaccination coverage measured and how reliable is the data?
Modelling and impact projection	What IMPACT will vaccination have at population level?
Vaccine efficacy, immunogenicity and schedule	How well does the vaccine WORK biologically?

Geographical focus

LMICs

Inclusion and Exclusion Criteria

Study types

Inclusion

All empirical study designs are eligible. This includes, but is not limited to:

- Evidence synthesis
- Narrative or scoping review
- Systematic review and meta-analysis
- Mixed methods
- Modelling and economic evaluation
- Economic evaluation
- Budget impact analysis (BIA)
- Cost analysis/costing study
- Cost-benefit analysis (CBA)
- Cost-effectiveness analysis (CEA)
- Cost-utility analysis (CUA)
- Modelling study
- Qualitative empirical
- Documentary analysis
- Focus group discussion
- In-depth and key informant interviews
- Qualitative study
- Quantitative empirical
- Clinical trial
- Observational study
- Prevalence study
- Programme evaluation or implementation research
- Quasi-experimental study
- Randomised controlled trial

Exclusion

- Opinion pieces without empirical data (e.g., editorials, news letters/press releases, abstracts, ongoing studies)

Publication status

Inclusion

- Peer-reviewed journal articles
- Preprints
- Government reports
- NGO or donor reports
- Technical briefs
- Theses/dissertations
- Unpublished data/evaluations

Exclusion

- Press releases
- Abstracts
- Ongoing studies

Topics

Inclusion

- Behavioural and social drivers of uptake
- Delivery design and optimisation
- Demand generation and communication strategies
- Equity and hard-to-reach populations
- Financing and programme sustainability
- Governance, policy and political commitment
- Health workforce capacity and engagement
- Measurement, data systems and enumeration
- Modelling and impact projection
- Service integration and co-delivery
- Vaccine efficacy, immunogenicity and schedule

Exclusion

- Studies focusing only on disease burden or HPV prevalence/incidence data
- Studies solely focused on screening or treatment of cervical cancer

Participants

Inclusion

- Girls - all ages
- Boys - all ages
- Parents
- Healthcare workers
- Interest holders

Exclusion

- None

Geographical scope

Inclusion

- LMICs based on the World Bank's country income classifications applicable in the year each study was conducted, using the World Bank's historical income classification data
  World Bank Country and Lending Groups – World Bank Data Help Desk. We also include Venezuela even though it is currently unclassified by the World Bank. We retained studies from Venezuela because of their relevance to the review and to avoid excluding potentially important evidence solely because of the country's current unclassified status.
- Mix of low, middle, and high-income countries

Exclusion

- High-income countries only

Language

Inclusion

- English
- French

Exclusion

- Languages other than English or French

Methodology

Search Strategy

We searched the following databases: Google Scholar, iris.who.int, OpenAlex, PubMed, DOAJ, Cochrane, 3ie, Basenet, Taylor & Francis online, UNICEF, WHO.int, Google.com, CINAHL, ProQuest, Embase, Web of Science, Scopus, Wiley Online, Epistemonikos, Worldbank., globalindexmedicus.net, Research square, GAVI, and PATH.

Search string for Pubmed (see more in Appendix 1)

1. (((HPV[tiab] OR Papilloma*[tiab] OR Papiloma*[tiab]) (“cervical cancer”) [Mesh] OR (“cervical intraepithelial neoplasia")[Mesh] OR "CIN"[tiab] OR ("human papillomavirus")[Mesh] AND (immunotherapy[tiab] OR ("prophylactic vaccine*")[Mesh] OR ("therapeutic vaccine*")[Mesh] OR (vaccine*[tiab] OR vaccinat*[tiab] OR immuniz*[tiab] OR Cervavac[tiab] OR Cecolin[tiab] OR Walrinvax[tiab] OR immunis*[tiab])) OR ((gardasil[tiab] OR cervarix[tiab])) OR ("Papillomavirus Vaccines"[Mesh])) AND ((deliver*[tiab] OR system*[tiab] OR roll*[tiab] OR implement*[tiab] OR polic*[tiab] OR ("delivery strategy" OR "school-based" OR "community-based" OR "national immunization program" OR "NIP" OR "routine immunization" OR "mass campaign" OR "catch-up campaign") OR program*[tiab])) AND ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR "reach" OR "acceptability")))
2. human papillomavirus vaccine filetype:pdf
3. HPV Vaccine

The updated searches covered from January, 2026 to September, 2026. Please see Appendix 1 for the full search strategies.

Screening

We did an initial screening by title/abstract; eligible references were then screened based on the full text.

A subset (n=100) of references were screened by the team to ensure continued consistency in applying the screening criteria. Differences in screening were reconciled by an expert reviewer. Percentage agreement was on 98% with fleiss kappa .90.

Initial screening by title/abstract

References identified through the search were imported into EPPI Reviewer, a web-based software program for managing and analysing data in all types of systematic reviews (3). Duplicate records were automatically identified through the built-in deduplication algorithm to ensure only unique references proceed to the screening stage. References with missing abstracts were identified, and missing abstracts were added manually where available.

The prompt for this version of the map was applied to a group of records (n=100) that had been double-screened by reviewers. Recall of .95 was achieved and the LLM was applied to all unscreened records.

The final prompt used for screening using LLM model GPT-4.1 was:

"is_about_HPV_vaccine_delivery_uptake_or_perceptions: boolean // Return true if this record reports a primary empirical study about HPV vaccine delivery, uptake, or acceptance, published in English or French. Eligible studies include those on: - delivery strategies (e.g., school-based delivery, outreach, facility-based delivery, single-dose vs. multi-dose delivery, integration with other programmes); - uptake, acceptance, or awareness (e.g., barriers and facilitators, parental or provider perceptions, community attitudes, gender and equity issues); - health system readiness and capacity (e.g., infrastructure, workforce training, coordination, physician recommendations); - economic and logistical aspects (e.g., vaccine cost-effectiveness, affordability, financing, monitoring and evaluation of programmes). - grey literature reports from reputable sources (e.g., WHO, UNICEF, GAVI) Return false if the study is primarily about HPV or cervical cancer screening/testing, treatment or prevalence rather than vaccination, if it is an editorial/commentary/opinion piece."

All included references by the human reviewers and the LLM were then screened at the full text level. Please see appendix 2 for coding tools.

Full-text screening

We retrieved full texts for references included at the title/abstract level from the Zotero plugin to the EPPI Reviewer software; any full texts not found were searched for and added manually where available.

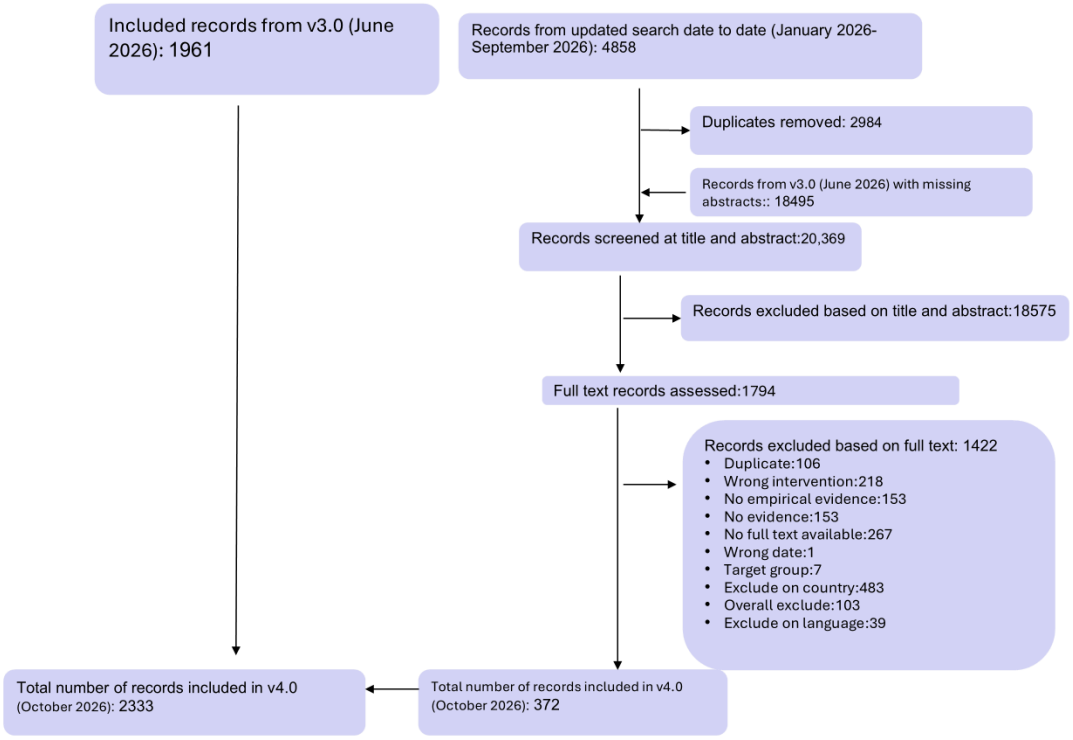
Items were screened on full text by groups of individual reviewers with a second reviewer checking all coding decisions. Any disagreement was solved by discussion or by involving a third reviewer. Automation was not used for full-text screening, and references included at the full-text screening progressed to data extraction.

Data extraction

Data extraction occurred automatically within EPPI Reviewer by creating individual LLM prompts for each code (see Appendix 2). We extracted data using model GPT-5.1., ~2% of the records with extracted data were double checked by an expert reviewer. Data were extracted on the following variables: AI Application, Acceptability Target, Behavioural And Social Driver, Co Delivered, Intervention, Comm Strategies Interventions, Communication Channel, Communication Recipient, Communication Sender, Coordination Mechanism, Country, Country Classification, Data Source, Delivery Actor, Delivery Model Type, Delivery Platform, Delivery Site, Equity Dimension, Financing Mechanism, Fragility Humanitarian Context, Governance Actor, Implementation, Strategy, Integration Type, Misinformation Activity, Outcome Measure, Program Scale, Program, Stage, Quality Of Care Dimension, Setting Context, Study Design, Supply Chain Aspect, Target, Population, UNICEF Region, Vaccination Eligibility, Vaccine Schedule, WHO Region, World Bank, Region, Funder, Thematic Focus - Primary, Thematic Focus - Secondary, Vaccine Type and Document Type. For more details on the coding tools please see Appendix 2.

Results

We identified 4,858 additional records through the Version 4 searches, which were added to the 18,495 records previously identified from Version 3 searches because they had missing abstracts which were then added in the version 4 of the repository. Following screening and eligibility assessment, 372 papers were included for data extraction, bringing the cumulative total to 2,333 papers.



Data synthesis

The data is stored in the Living HPV Vaccine Delivery Evidence Repository.

The records can be filtered by the items in the HPV Vaccine Delivery Taxonomy version 2.3 developed for this project. The records can be visualised as an interactive map - users can create matrices mapping one variable with another for example: thematic focus vs World Bank region. Finally, groups of records can be summarised using AI. This feature

is currently not available to the public as it undergoes testing with a small group of pre-registered users.

We will continue to incorporate new records into the repository. The planned cadence is currently monthly. Based on current funding, we anticipate that the last update will be in early 2027.

References

1. Aggarwal S, Agarwal P, Gupta N. A comprehensive narrative review of challenges and facilitators in the implementation of various HPV vaccination programs worldwide. Cancer Med. 2024 Feb;13(3):e6862. doi: 10.1002/cam4.6862. Epub 2024 Jan 11. PMID: 38213086; PMCID: PMC10911072.
2. Rosser EN, Wysong MD, Rosen JG, Limaye RJ, Park S. HPV Vaccine Delivery Strategies to Reach Out-of-School Girls in Low- and Middle-Income Countries: A Narrative Review. Vaccines. 2025; 13(5):433. https://doi.org/10.3390/vaccines13050433
3. Thomas, J., Graziosi, S., Brunton, J., Ghouze, Z., O'Driscoll, P., & Bond, M. & Koryakina, A. (2023). EPPI-Reviewer: advanced software for systematic reviews, maps and evidence synthesis. EPPI Centre, UCL Social Research Institute, University College London

Appendix 1

Search strategies and results

Searches in English (01/01/2026 to 01/09/2026)

Source / Database	Search string	Filter	Hits
PUBMED	(((HPV[tiab] OR Papilloma*[tiab] OR Papiloma*[tiab]) (“cervical cancer”) [Mesh] OR (“cervical intraepithelial neoplasia")[Mesh] OR "CIN"[tiab] OR ("human papillomavirus")[Mesh] AND (immunotherapy[tiab] OR ("prophylactic vaccine*")[Mesh] OR ("therapeutic vaccine*")[Mesh] OR (vaccine*[tiab] OR vaccinat*[tiab] OR immuniz*[tiab] OR Cervavac[tiab] OR Cecolin[tiab] OR Walrinvax[tiab] OR immunis*[tiab])) OR ((gardasil[tiab] OR cervarix[tiab])) OR ("Papillomavirus Vaccines"[Mesh])) AND ((deliver*[tiab] OR system*[tiab] OR roll*[tiab] OR implement*[tiab] OR polic*[tiab] OR ("delivery strategy" OR "school-based" OR "community-based" OR "national immunization program" OR "NIP" OR "routine immunization" OR "mass campaign" OR "catch-up campaign") OR program*[tiab])) AND ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR "reach" OR "acceptability")))	2026	1195
Embase (Ovid or Embase.com)	(*'papillomavirus vaccine'/exp OR (HPV adj3 vaccin*).ti,ab. OR ((human papillomavirus or human papilloma virus) adj3 vaccin*).ti,ab. OR (gardasil or cervarix or "gardasil 9" or gardasil9).ti,ab.) AND ('immunization program'/exp OR 'vaccination program'/exp OR 'mass immunization'/exp OR 'health program implementation'/exp OR (delivery adj3 (strateg* or model* or approach*)).ti,ab. OR (school-based or community-based).ti,ab. OR (reminder adj3 recall).ti,ab. OR (mobile adj3 clinic*).ti,ab. OR (catch-up adj3 (program* or vaccinat* or campaign*)).ti,ab.)	2026	256

WoS	(HPV OR papilloma* OR papiloma* OR "human papillomavirus" OR "cervical cancer" OR "cervical intraepithelial neoplasia" OR CIN) (All Fields) and (immunotherapy OR "prophylactic vaccine" OR "prophylactic vaccines" OR "therapeutic vaccine" OR "therapeutic vaccines" OR vaccine* OR vaccinat* OR immuniz* OR immunis* OR Cervavac OR Cecolin OR Walrinvax OR gardasil OR cervarix OR "Papillomavirus Vaccines") (All Fields) and (deliver* OR system* OR roll* OR implement* OR polic* OR program* OR "delivery strategy" OR "school based" OR "community based" OR "national immunization program" OR NIP OR "routine immunization" OR "mass campaign" OR "catch up campaign") (All Fields) and ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR reach OR acceptability) (All Fields) and 2026 (Publication Years)	2026	362
Scopus	(TITLE-ABS-KEY(HPV OR Papilloma* OR Papiloma* OR "human papillomavirus" OR "cervical cancer") AND TITLE-ABS-KEY(immunotherapy OR "prophylactic vaccine*" OR "therapeutic vaccine*" OR vaccine* OR vaccinat* OR immuniz* OR immunis* OR Cervavac OR Cecolin OR Walrinvax OR gardasil OR cervarix OR "Papillomavirus Vaccines") AND TITLE-ABS-KEY(deliver* OR system* OR roll* OR implement* OR polic* OR "delivery strategy" OR "school-based" OR "community-based" OR "national immunization program" OR NIP OR "routine immunization" OR "mass campaign" OR "catch-up campaign" OR program*) AND TITLE-ABS-KEY("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR "reach" OR "acceptability"))	2026	401

Proquest	(HPV OR Papilloma* OR "cervical cancer" OR CIN OR "cervical intraepithelial neoplasia") AND noft(vaccin* OR immuniz* OR immunis* OR Gardasil OR Cervarix OR Cecolin OR Cervavac OR Walrinvax) AND noft(deliver* OR system* OR roll* OR implement* OR polic* OR program* OR "school based" OR "community based" OR "national immunization program" OR "routine immunization" OR "mass campaign" OR "catch up campaign") AND noft("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR acceptability)	2026	20
CINAHL	(HPV OR Papilloma* OR "cervical cancer" OR CIN OR "cervical intraepithelial neoplasia") AND noft(vaccin* OR immuniz* OR immunis* OR Gardasil OR Cervarix OR Cecolin OR Cervavac OR Walrinvax) AND (deliver* OR system* OR roll* OR implement* OR polic* OR program* OR "school based" OR "community based" OR "national immunization program" OR "routine immunization" OR "mass campaign" OR "catch up campaign") AND ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR acceptability)	2026	24
DOAJ	(HPV OR Papilloma* OR "cervical cancer" OR CIN OR "cervical intraepithelial neoplasia") AND noft(vaccin* OR immuniz* OR immunis* OR Gardasil OR Cervarix OR Cecolin OR Cervavac OR Walrinvax) AND (deliver* OR system* OR roll* OR implement* OR polic* OR program* OR "school based" OR "community based" OR "national immunization program" OR "routine immunization" OR "mass campaign" OR "catch up campaign") AND ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy" OR "dose completion" OR acceptability)	2026	158
OpenAlex	(HPV OR Papilloma OR "cervical cancer") AND (vaccine OR immunization) (delivery OR program OR "school-based") AND ("vaccination coverage" OR "vaccine hesitancy")	2026	187
BASENET	title:(HPV OR Papilloma* OR "cervical cancer") AND (vaccin* OR immuniz* OR Gardasil OR Cervarix) AND (delivery OR program* OR "school-based" OR coverage OR hesitancy)	2026	837

Google Scholar	"cervical cancer" OR HPV vaccine ("school-based" OR "national immunization program" OR "routine immunization") AND ("vaccine uptake" OR "vaccination coverage" OR "vaccine hesitancy")	2026	86
Google Scholar	« cancer du col de l'utérus » OU vaccin contre le HPV (« à l'école » OU « programme national de vaccination » OU « vaccination de routine ») ET (« vaccination vaccinale » OU « couverture vaccinale » OU « hésitation vaccinale »)	2026	13
TandF Online	(HPV OR papillomavirus) AND vaccine AND (delivery OR "school-based" OR coverage OR hesitancy)	2026	321
Wiley online	(HPV OR papillomavirus) AND vaccin* AND (delivery OR program OR coverage OR hesitancy)	2026	345
3ie	HPV vaccine	2026	4
Cochrane Library	HPV vaccine	2026	50
Epistemonikos	HPV	2026	102
Worldbank	site:worldbank.org HPV vaccine filetype:pdf	2026	11
Worldbank	site:worldbank.org type de fichier du vaccin contre le HPV:pdf	2026	4
WHO IRIS	site:iris.who.int hpv filetype:pdf	2026	19
WHO IRIS	site:iris.who.int HPV type de fichier:pdf	2026	6
UNICEF	site:unicef.org HPV vaccine coverage delivery filetype:pdf	2026	8
UNICEF	site:unicef.org type de livraison de la couverture vaccinale contre le HPV:pdf	2026	2
WHO.int	site:who.int HPV vaccine "national immunization program" filetype:pdf	2026	2
Google.com	HPV Vaccination 2026 filetype:pdf	2026	93
Google.com	Type de fichier pour la vaccination contre le HPV 2026:pdf	2026	23
G Tunisia/Morocco		2026	72
Greylit from FEF	From NITAG Resource, ICCP, Immunization Economics	2026	257
TOTAL			4858

Total = 4858

Appendix 2

Coding tools

Screening on T&A

- Include on Title and Abstract

is_about_HPV_vaccine_delivery: boolean // Return TRUE if the record reports empirical research, evidence synthesis, implementation research, programme evaluation, modelling, economic evaluation, or grey literature related to HPV vaccination delivery, uptake, implementation, access, acceptability, policy, financing, communication, equity, monitoring, or health system strengthening in low- and middle-income countries (LMICs), or includes at least one LMIC in a multi-country study. Include studies on: • Behavioural and social drivers of HPV vaccine uptake • Vaccine hesitancy, acceptance, awareness, attitudes, beliefs, perceptions, or demand • Demand generation, communication, social mobilisation, community engagement, health education, or misinformation • HPV vaccine delivery strategies, programme implementation, rollout, or optimisation • School-based, facility-based, outreach, campaign, integrated, community-based, or routine vaccination • Service integration and co-delivery • Equity, access, coverage, hard-to-reach populations, or gender-related factors • Health workforce capacity, training, engagement, supervision, or provider recommendations • Governance, policy, leadership, coordination, political commitment, or programme management • Financing, sustainability, costing, affordability, budget impact, or economic evaluation • Monitoring, evaluation, surveillance, registries, information systems, data systems, or enumeration • Modelling and impact projection related to HPV vaccination programmes • HPV vaccine schedules, immunogenicity, or efficacy when informing vaccination policy, implementation, or delivery • Programme evaluations and implementation research • Peer-reviewed studies, preprints, government reports, NGO reports, technical reports, dissertations, and unpublished evaluations Eligible study designs include: • Randomised controlled trials • Clinical trials • Quasi-experimental studies • Observational studies • Programme evaluations • Implementation research • Qualitative studies • Mixed-methods studies • Economic evaluations • Modelling studies • Systematic reviews • Meta-analyses • Narrative reviews • Scoping reviews Return FALSE if: • The study focuses only on HPV prevalence, incidence, epidemiology, disease burden, or cancer burden without a vaccination delivery component. • The study focuses only on cervical cancer screening, HPV testing, diagnosis, treatment, or management without relevance to HPV vaccination. • The study focuses only on laboratory science, virology, vaccine development, or basic

science unrelated to vaccine delivery. • The study is conducted exclusively in high-income countries with no LMIC data. • The publication is an editorial, commentary, opinion piece, letter, press release, conference abstract only, news item, or ongoing study without results. When uncertain, favour TRUE rather than FALSE. Return only: TRUE or FALSE If the title or abstract suggests any possible relevance to HPV vaccination programmes, delivery, implementation, uptake, access, communication, policy, financing, equity, workforce, data systems, integration, modelling, or acceptability, return TRUE.

EXCLUDE on title & abstract

- should_be_excluded_from_HPV_vaccine_delivery_repository: boolean // Return TRUE if the record should be EXCLUDED from the HPV Vaccine Delivery Evidence Repository. Exclude if ANY of the following apply: 1. Not about HPV vaccination • The study does not focus on HPV vaccines, HPV vaccination, HPV immunisation, or HPV vaccination programmes. • The study focuses on HPV infection, virology, molecular biology, laboratory science, vaccine development, or vaccine manufacturing without relevance to vaccination delivery or implementation. 2. Not about vaccine delivery or implementation • The study focuses only on HPV prevalence, incidence, transmission, epidemiology, disease burden, cervical cancer burden, or cancer outcomes without discussing HPV vaccination delivery, implementation, uptake, access, programme design, policy, financing, communication, or vaccine-related interventions. • The study focuses solely on cervical cancer screening, HPV testing, diagnosis, treatment, management, or disease outcomes and does not include an HPV vaccination component. 3. Ineligible geographic scope • The study was conducted exclusively in high-income countries and contains no LMIC data, analysis, findings, or implications. • No LMIC country is included in a multi-country study. 4. Ineligible publication type • Editorial • Commentary • Opinion article • Letter to the editor • News article • Press release • Conference abstract only • Meeting abstract only • Protocol without results • Ongoing study without findings 5. No eligible evidence • The publication contains no empirical data, evidence synthesis findings, programme data, implementation evidence, modelling outputs, economic evaluation results, or evaluation findings. • The publication merely describes an initiative, programme, policy, or intervention without presenting data, evaluation, analysis, outcomes, or findings. 6. Ineligible language • Full text is not available in English or French. 7. Clearly outside the repository scope • The study does not address any aspect of: - vaccine uptake or acceptability - behavioural and social drivers - vaccine delivery design or optimisation - demand generation or communication - equity or hard-to-reach populations - financing or sustainability - governance or policy - health workforce - monitoring, evaluation, data systems, or enumeration - modelling and impact projection - service integration or co-delivery - vaccine schedule implementation, efficacy, or immunogenicity relevant to programme delivery - misinformation related to HPV vaccination Return FALSE if: • The

study may contribute evidence to any HPV vaccine delivery, implementation, uptake, programme, policy, financing, equity, communication, workforce, monitoring, modelling, or integration question, even when relevance is uncertain. When uncertain, favour FALSE rather than TRUE. Return only: TRUE or FALSE
``should_be_excluded_from_HPV_vaccine_delivery_repository

- Rationale
  justification: string // Outline why this study is, or is not, about HPV vaccines.

Screen on Full Text

- EXCLUDE duplicate
- EXCLUDE on date
- EXCLUDE on country
- EXCLUDE on target group
- EXCLUDE on intervention
- EXCLUDE on evidence
- EXCLUDE on language
- EXCLUDE not empirical
- EXCLUDE no full text available
- INCLUDE on full study

HPV Taxonomy

- AI Application
  - AI in data analysis
    AI_in_data_analysis: boolean // Return true if this paper reports on the use of artificial intelligence in data analysis, such as automated coding, classification, or pattern recognition.
  - AI in intervention
    AI_in_intervention: boolean // Return true if this paper reports on the use of artificial intelligence as part of the intervention itself, such as AI-driven communication or decision support.
- Acceptability Target
  - Community leaders
    Community_leaders1: boolean // Return true if this paper reports on community leaders including traditional, religious, or civic leaders whose acceptability of or attitudes toward HPV vaccination are assessed.
  - Caregivers
    Caregivers1: boolean // Return true if this paper reports on acceptability toward HPV vaccination as perceived by caregivers, including parents and guardians.

    - Recipients
      Recipients: boolean // Return true if this paper reports on acceptability toward HPV vaccination as perceived by vaccine recipients.
    - Health workers
      Health_workers1: boolean // Return true if this paper reports on acceptability toward HPV vaccination as perceived by health workers involved in delivery.
- Behavioural And Social Driver
    - Motivation
      Motivation: boolean // Return true if this paper reports on the degree to which individuals intend, are willing, or are actively driven to seek vaccination.
    - Thinking and feeling
      Thinking_and_feeling: boolean // Return true if this paper reports on individual cognitive and emotional factors that shape whether a person decides to vaccinate.
    - Practical issues
      Practical_issues: boolean // Return true if this paper reports on structural and logistical factors that prevent motivated individuals from accessing vaccination, including the experiences people have when they try to get vaccinated.
    - Social processes
      Social_processes: boolean // Return true if this paper reports on interpersonal, community, and normative factors that influence vaccination behaviour through relationships and social context.
- Co Delivered Intervention
    - Mental health
      Mental_health: boolean // Return true if this paper reports on mental health services or psychosocial support co-delivered alongside HPV vaccination, including counselling, screening for depression or anxiety, or referral services.
    - Nutrition
      Nutrition: boolean // Return true if this paper reports on nutritional interventions co-delivered alongside HPV vaccination, beyond iron and folate supplementation, including broader micronutrient programmes, school feeding, or nutrition counselling.
    - Other vaccines
      Other_vaccines: boolean // Return true if this paper reports on one or more other vaccines co-administered alongside HPV vaccination at the same visit or contact.
    - Other
      Other1 : boolean // Return true if this paper reports on a co-delivered health intervention not covered by other Co-delivered Intervention concepts.
    - SRH
      SRH: boolean // Return true if this paper reports on sexual and reproductive health services co-delivered alongside HPV vaccination, including

contraception counselling, STI testing, SRH education, and HIV/AIDS care services.

- Deworming
  Deworming: boolean // Return true if this paper reports on deworming treatment co-delivered with HPV vaccination.
- NCDs
  NCDs: boolean // Return true if this paper reports on non-communicable disease screening or interventions co-delivered with HPV vaccination.
- Education
  Education: boolean // Return true if this paper reports on educational activities or programmes co-delivered with HPV vaccination.
- Vision screening
  Vision_screening: boolean // Return true if this paper reports on vision screening co-delivered with HPV vaccination.
- Hearing screening
  Hearing_screening: boolean // Return true if this paper reports on hearing screening co-delivered with HPV vaccination.
- Iron/Folate supplementation
  Iron/Folate_supplementation: boolean // Return true if this paper reports on iron and folate supplementation co-delivered with HPV vaccination.
- WASH
  WASH: boolean // Return true if this paper reports on water, sanitation, and hygiene interventions co-delivered with HPV vaccination.
- GBV reduction
  GBV_reduction: boolean // Return true if this paper reports on gender-based violence reduction activities co-delivered with HPV vaccination.
- Health education
  Health_education: boolean // Return true if this paper reports on health education activities co-delivered with HPV vaccination.
- Cervical cancer screening
  Cervical_cancer_screening: boolean // Return true if this paper reports on cervical cancer screening co-delivered or strategically linked with HPV vaccination as part of a combined cervical cancer prevention approach.
- HIV/AIDS care and treatment
  HIV/AIDS_care_and_treatment: boolean // Return true if this paper reports on HIV/AIDS clinical care, treatment, or support services co-delivered alongside HPV vaccination.

- Comm Strategies Interventions
  - Community sensitisation
    Community_sensitisation: boolean // Return true if this paper reports on community sensitisation activities to build awareness and acceptance of HPV vaccination at the community level.
  - Peer education models
    Peer_education_models: boolean // Return true if this paper reports on peer

education models where adolescents or community members deliver vaccination-related information to their peers.

    - Parent engagement
      Parent_engagement: boolean // Return true if this paper reports on activities that engage parents or caregivers to support vaccination of their children.
    - School-based engagement
      School-based_engagement: boolean // Return true if this paper reports on communication or education strategies delivered through or within school settings, using the school as the primary venue or channel for HPV vaccination messaging.
    - Teacher engagement
      Teacher_engagement: boolean // Return true if this paper reports on communication or education strategies that deliberately involve teachers as active participants in conveying HPV vaccination information to students or caregivers.
- Communication Channel
    - Interpersonal (face-to-face)
      Interpersonal_(face-to-face): boolean // Return true if this paper reports on one-on-one doctor consultations, doorstep visits as a communication channel, such as, direct face-to-face communication including counselling sessions, community meetings, and individual consultations.
    - Print materials
      Print_materials: boolean // Return true if this paper reports on pamphlets, posters, school-entry flyers used to communicate about HPV vaccination.
    - Other
      Other2: boolean // Return true if this paper reports on a communication channel not covered by other concepts in this scheme.
    - Mass media
      Mass_media: boolean // Return true if this paper reports on television, radio, and other broadcast media used as communication channels for HPV vaccination campaigns.
    - Digital/social media
      Digital/social_media: boolean // Return true if this paper reports on SMS alerts, Facebook campaigns, WhatsApp groups as a communication channel, such as, social media platforms (Facebook, WhatsApp, TikTok, etc.) and digital channels.
    - Text-message reminders
      Text-message_reminders: boolean // Return true if this paper reports on Text or SMS-based reminders to promote vaccination attendance or completion.
- Communication Recipient
    - Young adults
      Young_adults: boolean // Return true if this paper reports on young adults (typically 18 to 25) as a distinct communication recipient group, particularly

relevant in catch-up programmes or where young adults are gatekeepers for adolescent girls.

- Peer educators
  Peer_educators: boolean // Return true if this paper reports on peer educators as communication recipients, being trained or equipped to deliver peer-to-peer HPV messaging.
- Health workers
  Health_workers2: boolean // Return true if this paper reports on health workers as communication recipients receiving training, updates, or education about HPV vaccination to improve their counselling or delivery capacity.
- Community health workers
  Community_health_workers1: boolean // Return true if this paper reports on community health workers as communication recipients receiving training or information to enable them to communicate about HPV vaccination in their communities.
- Adolescent boys
  Adolescent_boys: boolean // Return true if this paper reports on relevant in gender-neutral programmes and contexts where boys receive communication as part of a broader school or community engagement strategy. For programmes where boys are vaccination recipients rather than communication recipients, tag Male only in Target Population.
- Caregivers
  Caregivers2: boolean // Return true if this paper reports on parents, guardians, or adult caregivers as recipients of HPV vaccination communication. Often gatekeepers for adolescent vaccination decisions.
- School personnel
  School_personnel: boolean // Return true if this paper reports on school staff teachers, administrators, or school nurses as recipients of HPV-related communication or training.
- Traditional and religious leaders
  Traditional_and_religious_leaders1 : boolean // Return true if this paper reports on traditional or religious leaders as communication recipients being engaged, briefed, or educated about HPV vaccination to secure their support.
- Adolescent girls
  Adolescent_girls: boolean // Return true if this paper reports on the primary target recipient in most HPV communication programmes. Includes both in-school and out-of-school girls.

- Communication Sender
  - Celebrities/influencers
    Celebrities/influencers: boolean // Return true if this paper reports on high-profile public figures used in mass media campaigns.
  - Civil society/NGOs
    Civil_society/NGOs: boolean // Return true if this paper reports on local non-profits or international organizations.

    - Peers
      Peers: boolean // Return true if this paper reports on students talking to other students.
    - Caregivers
      Caregivers3: boolean // Return true if this paper reports on champion Parents who have vaccinated their children and share their stories.
    - Media
      Media: boolean // Return true if this paper reports on media organisations or platforms including traditional broadcast and print media and social media acting as senders of HPV vaccination communication or information campaigns.
    - Teachers
      Teachers: boolean // Return true if this paper reports on teachers as deliverers of vaccination-related communication or education.
    - Traditional and religious leaders
      Traditional_and_religious_leaders2: boolean // Return true if this paper reports on traditional and religious leaders as deliverers of vaccination-related communication.
    - Health workers
      Health_workers2: boolean // Return true if this paper reports on health workers as deliverers of vaccination-related communication.
- Coordination Mechanism
    - National Immunization Technical Advisory Group (NITAG)
      National_Immunization_Technical_Advisory_Group_(NITAG): boolean // Return true if this paper reports on a body that provides independent, evidence-based guidance on vaccine policy to national governments.
    - Inter-agency Coordinating Committee (ICC)
      Inter-agency_Coordinating_Committee_(ICC): boolean // Return true if this paper reports on a mechanism for coordinating the activities of government and partner organisations in immunisation.
- Country
    - Andorra
      Andorra: boolean // Return true if this paper reports on participants from or a population of Andorra. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
    - United Arab Emirates
      United_Arab_Emirates: boolean // Return true if this paper reports on participants from or a population of United Arab Emirates. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Afghanistan
  Afghanistan: boolean // Return true if this paper reports on participants from or a population of Afghanistan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Antigua and Barbuda
  Antigua_and_Barbuda: boolean // Return true if this paper reports on participants from or a population of Antigua and Barbuda. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Anguilla
  Anguilla: boolean // Return true if this paper reports on participants from or a population of Anguilla. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Albania
  Albania: boolean // Return true if this paper reports on participants from or a population of Albania. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Armenia
  Armenia: boolean // Return true if this paper reports on participants from or a population of Armenia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Angola
  Angola: boolean // Return true if this paper reports on participants from or a population of Angola. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Antarctica
  Antarctica: boolean // Return true if this paper reports on participants from or a population of Antarctica. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Argentina
  Argentina: boolean // Return true if this paper reports on participants from or a

population of Argentina. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- American Samoa
  American_Samoa: boolean // Return true if this paper reports on participants from or a population of American Samoa. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Austria
  Austria: boolean // Return true if this paper reports on participants from or a population of Austria. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Australia
  Australia: boolean // Return true if this paper reports on participants from or a population of Australia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Aruba
  Aruba: boolean // Return true if this paper reports on participants from or a population of Aruba.Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Aland Islands
  Aland_Islands: boolean // Return true if this paper reports on participants from or a population of Aland Islands. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Azerbaijan
  Azerbaijan: boolean // Return true if this paper reports on participants from or a population of Azerbaijan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bosnia and Herzegovina
  Bosnia_and_Herzegovina: boolean // Return true if this paper reports on participants from or a population of Bosnia and Herzegovina. Participants will only be listed in the methods section of the paper. The author affiliations,

funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Barbados
  Barbados: boolean // Return true if this paper reports on participants from or a population of Barbados. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bangladesh
  Bangladesh: boolean // Return true if this paper reports on participants from or a population of Bangladesh. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Belgium
  Belgium: boolean // Return true if this paper reports on participants from or a population of Belgium. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Burkina Faso
  Burkina_Faso: boolean // Return true if this paper reports on participants from or a population of Burkina Faso. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bulgaria
  Bulgaria: boolean // Return true if this paper reports on participants from or a population of Bulgaria. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bahrain
  Bahrain: boolean // Return true if this paper reports on participants from or a population of Bahrain. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Burundi
  Burundi: boolean // Return true if this paper reports on participants from or a population of Burundi. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Benin
  Benin: boolean // Return true if this paper reports on participants from or a population of Benin. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Saint Bartholemy
  Saint_Bartholemy: boolean // Return true if this paper reports on participants from or a population of Saint Bartholemy. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bermuda
  Bermuda: boolean // Return true if this paper reports on participants from or a population of Bermuda. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Brunei Darussalam
  Brunei_Darussalam: boolean // Return true if this paper reports on participants from or a population of Brunei Darussalam. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bolivia, Plurinational State of
  Bolivia_Plurinational_State_of: boolean // Return true if this paper reports on participants from or a population of Bolivia, Plurinational State of. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bonaire, Sint Eustatius and Saba
  Bonaire_Sint_Eustatius_and_Saba: boolean // Return true if this paper reports on participants from or a population of Bonaire, Sint Eustatius and Saba. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Brazil
  Brazil: boolean // Return true if this paper reports on participants from or a population of Brazil. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bahamas
  Bahamas: boolean // Return true if this paper reports on participants from or a

population of Bahamas. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Bhutan
  Bhutan: boolean // Return true if this paper reports on participants from or a population of Bhutan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Bouvet Island
  Bouvet_Island: boolean // Return true if this paper reports on participants from or a population of Bouvet Island. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Botswana
  Botswana: boolean // Return true if this paper reports on participants from or a population of Botswana. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Belarus
  Belarus: boolean // Return true if this paper reports on participants from or a population of Belarus. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Belize
  Belize: boolean // Return true if this paper reports on participants from or a population of Belize. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Canada
  Canada: boolean // Return true if this paper reports on participants from or a population of Canada. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cocos (Keeling) Islands
  Cocos_Keeling_Islands: boolean // Return true if this paper reports on participants from or a population of Cocos (Keeling) Islands. Participants will only be listed in the methods section of the paper. The author affiliations,

funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Congo, The Democratic Republic of the
  Congo_The_Democratic_Republic_of_the: boolean // Return true if this paper reports on participants from or a population of Congo, The Democratic Republic of the. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Central African Republic
  Central_African_Republic: boolean // Return true if this paper reports on participants from or a population of Central African Republic. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Congo
  Congo: boolean // Return true if this paper reports on participants from or a population of Congo. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Switzerland
  Switzerland: boolean // Return true if this paper reports on participants from or a population of Switzerland. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cote d'Ivoire
  Cote_d_Ivoire: boolean // Return true if this paper reports on participants from or a population of Cote d Ivoire. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cook Islands
  Cook_Islands: boolean // Return true if this paper reports on participants from or a population of Cook Islands. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Chile
  Chile: boolean // Return true if this paper reports on participants from or a population of Chile. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within

other sections (including the introduction and discussion) should not be considered.

- Cameroon
  Cameroon: boolean // Return true if this paper reports on participants from or a population of Cameroon. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- China
  China: boolean // Return true if this paper reports on participants from or a population of China. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Colombia
  Colombia: boolean // Return true if this paper reports on participants from or a population of Colombia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Costa Rica
  Costa_Rica: boolean // Return true if this paper reports on participants from or a population of Costa Rica. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cuba
  Cuba: boolean // Return true if this paper reports on participants from or a population of Cuba. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cabo Verde
  Cabo_Verde: boolean // Return true if this paper reports on participants from or a population of Cabo Verde. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Curasao
  Curasao: boolean // Return true if this paper reports on participants from or a population of Curasao. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Christmas Island
  Christmas_Island: boolean // Return true if this paper reports on participants from or a population of Christmas Island. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Cyprus
  Cyprus: boolean // Return true if this paper reports on participants from or a population of Cyprus. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Czechia
  Czechia: boolean // Return true if this paper reports on participants from or a population of Czechia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Germany
  Germany: boolean // Return true if this paper reports on participants from or a population of Germany. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Djibouti
  Djibouti: boolean // Return true if this paper reports on participants from or a population of Djibouti. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Denmark
  Denmark: boolean // Return true if this paper reports on participants from or a population of Denmark. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Dominica
  Dominica: boolean // Return true if this paper reports on participants from or a population of Dominica. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Dominican Republic
  Dominican_Republic: boolean // Return true if this paper reports on participants

from or a population of Dominican Republic. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Algeria
  Algeria: boolean // Return true if this paper reports on participants from or a population of Algeria. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Ecuador
  Ecuador: boolean // Return true if this paper reports on participants from or a population of Ecuador. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Estonia
  Estonia: boolean // Return true if this paper reports on participants from or a population of Estonia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Egypt
  Egypt: boolean // Return true if this paper reports on participants from or a population of Egypt. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Western Sahara
  Western_Sahara: boolean // Return true if this paper reports on participants from or a population of Western Sahara. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Eritrea
  Eritrea: boolean // Return true if this paper reports on participants from or a population of Eritrea. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Spain
  Spain: boolean // Return true if this paper reports on participants from or a population of Spain. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries

within other sections (including the introduction and discussion) should not be considered.

- Ethiopia
  Ethiopia: boolean // Return true if this paper reports on participants from or a population of Ethiopia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Finland
  Finland: boolean // Return true if this paper reports on participants from or a population of Finland. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Fiji
  Fiji: boolean // Return true if this paper reports on participants from or a population of Fiji. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Falkland Islands (Malvinas)
  Falkland_Islands_Malvinas: boolean // Return true if this paper reports on participants from or a population of Falkland Islands (Malvinas). Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Micronesia, Federated States of
  Micronesia_Federated_States_of: boolean // Return true if this paper reports on participants from or a population of Micronesia, Federated States of. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Faroe Islands
  Faroe_Islands: boolean // Return true if this paper reports on participants from or a population of Faroe Islands. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- France
  France: boolean // Return true if this paper reports on participants from or a population of France. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Gabon
  Gabon: boolean // Return true if this paper reports on participants from or a population of Gabon. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- United Kingdom
  United_Kingdom: boolean // Return true if this paper reports on participants from or a population of United Kingdom. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Grenada
  Grenada: boolean // Return true if this paper reports on participants from or a population of Grenada. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Georgia
  Georgia: boolean // Return true if this paper reports on participants from or a population of Georgia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- French Guiana
  French_Guiana: boolean // Return true if this paper reports on participants from or a population of French Guiana.Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Guernsey
  Guernsey: boolean // Return true if this paper reports on participants from or a population of Guernsey. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Ghana
  Ghana: boolean // Return true if this paper reports on participants from or a population of Ghana. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Gibraltar
  Gibraltar: boolean // Return true if this paper reports on participants from or a

population of Gibraltar. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Greenland
  Greenland: boolean // Return true if this paper reports on participants from or a population of Greenland. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Gambia
  Gambia: boolean // Return true if this paper reports on participants from or a population of Gambia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Guinea
  Guinea: boolean // Return true if this paper reports on participants from or a population of Guinea. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
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  Singapore: boolean // Return true if this paper reports on participants from or a population of Singapore. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Saint Helena, Saint Helena, Ascension and Tristan da Cunha
  Saint_Helena_Saint_Helena_Ascension_and_Tristan_da_Cunha: boolean // Return true if this paper reports on participants from or a population of Saint Helena, Saint Helena, Ascension and Tristan da Cunha. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Slovenia
  Slovenia: boolean // Return true if this paper reports on participants from or a population of Slovenia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Svalbard and Jan Mayen
  Svalbard_and_Jan_Mayen: boolean // Return true if this paper reports on participants from or a population of Svalbard and Jan Mayen. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Slovakia
  Slovakia: boolean // Return true if this paper reports on participants from or a population of Slovakia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Sierra Leone
  Sierra_Leone: boolean // Return true if this paper reports on participants from or a population of Sierra Leone. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- San Marino
  San_Marino: boolean // Return true if this paper reports on participants from or a population of San Marino. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Senegal
  Senegal: boolean // Return true if this paper reports on participants from or a population of Senegal. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Somalia
  Somalia: boolean // Return true if this paper reports on participants from or a population of Somalia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Suriname
  Suriname: boolean // Return true if this paper reports on participants from or a

population of Suriname. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- South Sudan
  South_Sudan: boolean // Return true if this paper reports on participants from or a population of South Sudan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Sao Tome and Principe
  Sao_Tome_and_Principe: boolean // Return true if this paper reports on participants from or a population of Sao Tome and Principe. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- El Salvador
  El_Salvador: boolean // Return true if this paper reports on participants from or a population of El Salvador. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Sint Maarten (Dutch part)
  Sint_Maarten_Dutch_part: boolean // Return true if this paper reports on participants from or a population of Sint Maarten (Dutch part). Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Syrian Arab Republic
  Syrian_Arab_Republic: boolean // Return true if this paper reports on participants from or a population of Syrian Arab Republic. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Eswatini
  Eswatini: boolean // Return true if this paper reports on participants from or a population of Eswatini. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Turks and Caicos Islands
  Turks_and_Caicos_Islands: boolean // Return true if this paper reports on participants from or a population of Turks and Caicos Islands. Participants will only be listed in the methods section of the paper. The author affiliations,

funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Chad
  Chad: boolean // Return true if this paper reports on participants from or a population of Chad. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- French Southern Territories
  French_Southern_Territories: boolean // Return true if this paper reports on participants from or a population of French Southern Territories. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Togo
  Togo: boolean // Return true if this paper reports on participants from or a population of Togo. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Thailand
  Thailand: boolean // Return true if this paper reports on participants from or a population of Thailand. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tajikistan
  Tajikistan: boolean // Return true if this paper reports on participants from or a population of Tajikistan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tokelau
  Tokelau: boolean // Return true if this paper reports on participants from or a population of Tokelau. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Timor-Leste
  Timor-Leste: boolean // Return true if this paper reports on participants from or a population of Timor-Leste. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Turkmenistan
  Turkmenistan: boolean // Return true if this paper reports on participants from or a population of Turkmenistan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tunisia
  Tunisia: boolean // Return true if this paper reports on participants from or a population of Tunisia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tonga
  Tonga: boolean // Return true if this paper reports on participants from or a population of Tonga. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Turkiye
  Turkiye: boolean // Return true if this paper reports on participants from or a population of Turkiye. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Trinidad and Tobago
  Trinidad_and_Tobago: boolean // Return true if this paper reports on participants from or a population of Trinidad and Tobago. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tuvalu
  Tuvalu: boolean // Return true if this paper reports on participants from or a population of Tuvalu. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Taiwan, Province of China
  Taiwan_Province_of_China: boolean // Return true if this paper reports on participants from or a population of Taiwan, Province of China. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Tanzania, United Republic of
  Tanzania_United_Republic_of: boolean // Return true if this paper reports on

participants from or a population of Tanzania, United Republic of. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Ukraine
  Ukraine: boolean // Return true if this paper reports on participants from or a population of Ukraine. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Uganda
  Uganda: boolean // Return true if this paper reports on participants from or a population of Uganda. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- United States Minor Outlying Islands
  United_States_Minor_Outlying_Islands: boolean // Return true if this paper reports on participants from or a population of United States Minor Outlying Islands. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- United States
  United_States: boolean // Return true if this paper reports on participants from or a population of United States. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Uruguay
  Uruguay: boolean // Return true if this paper reports on participants from or a population of Uruguay. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Uzbekistan
  Uzbekistan: boolean // Return true if this paper reports on participants from or a population of Uzbekistan. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Holy See (Vatican City State)
  Holy_See_Vatican_City_State: boolean // Return true if this paper reports on participants from or a population of Holy See (Vatican City State). Participants will only be listed in the methods section of the paper. The author affiliations,

funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Saint Vincent and the Grenadines
  Saint_Vincent_and_the_Grenadines: boolean // Return true if this paper reports on participants from or a population of Saint Vincent and the Grenadines. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Venezuela, Bolivarian Republic of
  Venezuela_Bolivarian_Republic_of: boolean // Return true if this paper reports on participants from or a population of Venezuela, Bolivarian Republic of. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Virgin Islands, British
  Virgin_Islands_British: boolean // Return true if this paper reports on participants from or a population of Virgin Islands, British. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Virgin Islands, U.S.
  Virgin_Islands_U.S.: boolean // Return true if this paper reports on participants from or a population of Virgin Islands, U.S.. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Viet Nam
  Viet_Nam: boolean // Return true if this paper reports on participants from or a population of Viet Nam. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Vanuatu
  Vanuatu: boolean // Return true if this paper reports on participants from or a population of Vanuatu. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Wallis and Futuna
  Wallis_and_Futuna: boolean // Return true if this paper reports on participants from or a population of Wallis and Futuna. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

- Samoa
  Samoa: boolean // Return true if this paper reports on participants from or a population of Samoa. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Yemen
  Yemen: boolean // Return true if this paper reports on participants from or a population of Yemen. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Mayotte
  Mayotte: boolean // Return true if this paper reports on participants from or a population of Mayotte. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- South Africa
  South_Africa: boolean // Return true if this paper reports on participants from or a population of South Africa. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Zambia
  Zambia: boolean // Return true if this paper reports on participants from or a population of Zambia. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.
- Zimbabwe
  Zimbabwe: boolean // Return true if this paper reports on participants from or a population of Zimbabwe. Participants will only be listed in the methods section of the paper. The author affiliations, funders, and other mentions of countries within other sections (including the introduction and discussion) should not be considered.

Country Classification

- World Bank income tier
  World_Bank_income_tier: boolean // Return true if this paper reports on country income classification per World Bank gross national income (GNI) per capita thresholds.

        - Low income
          Low_income: boolean // Return true if this paper reports on countries classified by the World Bank as low income based on gross national income (GNI) per capita
        - High income
          High_income: boolean // Return true if this paper reports on countries classified by the World Bank as high income based on gross national income (GNI) per capita.
        - Upper middle income
          Upper_middle_income: boolean // Return true if this paper reports on countries classified by the World Bank as upper middle income based on gross national income (GNI) per capita.
        - Lower middle income
          Lower_middle_income: boolean // Return true if this paper reports on countries classified by the World Bank as lower middle income based on gross national income (GNI) per capita.
    - Gavi status
      Gavi_status: boolean // Return true if this paper reports on country classification according to Gavi, the Vaccine Alliance eligibility and portfolio framework.
        - Gavi Core
          Gavi_Core: boolean // Apply ONLY where the text positively establishes (a) the study's data/programme period is 2021 or later, and (b) the country was in Gavi's Core portfolio (lower-income, highest need) in that period. This segment is a Gavi 5.0 construct (2021–2025) and did not exist before 2021. If either is not clearly established — including any undated record — do NOT apply. Do not infer from the country name alone.
        - Gavi Fragile and Humanitarian
          Gavi_Fragile_and_Humanitarian: boolean // Apply ONLY where the text positively establishes (a) the study's data/programme period is 2021 or later, and (b) the country was classified by Gavi as fragile/humanitarian in that period (weak governance, conflict, or humanitarian crisis requiring adapted support). This Gavi portfolio classification is a 5.0 construct (2021–2025) and did not exist in this form before 2021. If either is not clearly established — including any undated record — do NOT apply. Do not infer from the country name alone. (Distinct from the Fragility & Humanitarian Context scheme, which is not time-bounded.)
        - Gavi High-impact
          Gavi_High_impact: boolean // Apply ONLY where the text positively establishes (a) the study's data/programme period is 2021 or later, and (b) the country was in Gavi's High-impact portfolio (large unimmunised populations, large absolute impact) in that period. This segment is a Gavi 5.0 construct (2021–2025) and did not exist before 2021. If either is

not clearly established — including any undated record — do NOT apply. Do not infer from the country name alone.

- Gavi MICS
  Gavi_MICS: boolean // Apply ONLY where the text positively establishes (a) the study's data/programme period is 2021 or later, and (b) the country was covered by Gavi's Middle-Income Country Support (MICS) in that period (typically countries transitioned from standard eligibility but retaining access to specific Gavi products or co-financing). The MICs Approach dates from the Gavi 5.0 period (approved December 2020) and did not exist before 2021. If either is not clearly established — including any undated record — do NOT apply. Do not infer from the country name alone.
- Gavi not eligible
  Gavi_not_eligible: boolean // Apply ONLY where the text indicates the country was outside Gavi support during the study's data/programme period — either never eligible (e.g. a high-income or long-standing self-financing country) or fully transitioned out (e.g. "self-financing", "nationally funded without Gavi", "after graduating/transitioning from Gavi", "not Gavi-eligible"). Judge status as of the STUDY PERIOD as shown in the text; do NOT use current or later status. The mere ABSENCE of any mention of Gavi is NOT evidence of ineligibility — do not apply on silence. Mutually exclusive with the other two states. If status for that period cannot be established from the text, do NOT apply.
- Gavi transitioning
  Gavi_transitioning: boolean // Apply ONLY where the text indicates the country was in a Gavi transition phase during the study's data/programme period — moving from Gavi-eligible toward self-financing (e.g. "transitioning from Gavi support", "accelerated/preparatory transition phase", "graduating from Gavi", rising co-financing toward full self-financing). Judge status as of the STUDY PERIOD as shown in the text; do NOT use the country's current or later status. Takes precedence over Gavi-eligible where transition is explicitly underway; mutually exclusive with the other two states. If the text gives no clear transition signal for that period, do NOT apply.
- Gavi-eligible
  Gavi_eligible: boolean // Apply ONLY where the text indicates the country was receiving, or eligible for, standard Gavi support during the study's data/programme period — e.g. "Gavi-supported", "Gavi-funded introduction", "with support from Gavi", "Gavi-eligible", or co-financing as an eligible country. Judge status as of the STUDY PERIOD as shown in the text; do NOT use the country's current or later Gavi status. If the text shows transition underway, apply Gavi transitioning instead; if self-financing/graduated, apply Gavi not eligible. These three lifecycle

states are mutually exclusive. If the text gives no clear signal of the country's Gavi status for that period, do NOT apply.

- Data Source
    - Survey data
      Survey_data: boolean // Return true if this paper reports on data collected through a structured survey instrument administered to individuals, households, or populations.
    - KAP survey data
      KAP_survey_data: boolean // Return true if this paper reports on data collected through a knowledge, attitudes, and practices (KAP) survey, measuring what respondents know, believe, and do in relation to HPV vaccination.
    - Exit survey data
      Exit_survey_data: boolean // Return true if this paper reports on data collected from vaccine recipients or caregivers immediately after a vaccination encounter, typically at the point of service.
    - Primary qualitative data
      Primary_qualitative_data: boolean // Return true if this paper reports on data collected through qualitative methods including in-depth interviews, key informant interviews, focus group discussions, or ethnographic observation.
    - Costing and economic data
      Costing_and_economic_data: boolean // Return true if this paper reports on data collected to measure the costs of delivering vaccination services, including ingredient costing, service time-motion studies, and economic data collection.
    - Programme and policy documents
      Programme_and_policy_documents: boolean // Return true if this paper reports on data or evidence drawn from policy documents, programme reports, government publications, or other grey literature sources.
    - Independent or evaluative study
      Independent_or_evaluative_study: boolean // Return true if this paper reports on evidence drawn from independent or external evaluations of HPV vaccination programmes, including mid-term reviews, end-of-project evaluations, or commissioned assessments.
    - Surveillance data
      Surveillance_data: boolean // Return true if this paper reports on evidence drawn from disease or health surveillance systems.
    - Administrative and registry data
      Administrative_and_registry_data: boolean // Return true if this paper reports on evidence drawn from administrative records, health registries, or routine programme data.
    - Proficiency testing programme
      Proficiency_testing_programme: boolean // Return true if this paper reports on evidence drawn from a proficiency testing programme.

    - Expert elicitation data
      Expert_elicitation_data: boolean // Return true if this paper reports on data derived from structured expert opinion processes, used as inputs to models or analyses where empirical data are unavailable or insufficient.
    - Geospatial and GIS data
      Geospatial_and_GIS_data: boolean // Return true if this paper reports on geographic, spatial, or satellite-derived data used to analyse vaccination coverage, service accessibility, population distribution, or microplanning.
    - Global modelled estimates
      Global_modelled_estimates: boolean // Return true if this paper reports on internationally produced, modelled datasets that harmonise multiple data sources to generate standardised national or regional estimates, published by WHO, UNICEF, IHME, or similar bodies.
    - Primary quantitative data
      Primary_quantitative_data: boolean // Return true if this paper reports on data collected through primary quantitative methods, including clinical measurements, biological samples, laboratory assays, structured observations, or trial endpoints.
    - Published study data
      Published_study_data: boolean // Return true if this paper reports on data drawn from previously published studies, trials, or evaluations and used as inputs to a model, synthesis, or secondary analysis rather than collected directly by the authors.
    - Social media and online data
      Social_media_and_online_data: boolean // Return true if this paper reports on data derived from social media platforms, online forums, search engines, or other digital sources, used to analyse vaccine-related discourse, sentiment, misinformation, or information-seeking behaviour.
- Delivery Actor
    - Health workers
      Health_workers3: boolean // Return true if this paper reports on health workers, including doctors, nurses, and other clinical or paraclinical staff involved in vaccine delivery.
    - Community health workers
      Community_health_workers2: boolean // Return true if this paper reports on community health workers operating at the community level, often as a link between the health system and the population.
    - Private sector
      Private_sector: boolean // Return true if this paper reports on private sector actors involved in vaccine delivery, supply, or financing.
    - Faith-based organisations
      Faith-based_organisations: boolean // Return true if this paper reports on faith-based organisations involved in vaccine delivery, mobilisation, or advocacy.

    - NGOs
      NGOs: boolean // Return true if this paper reports on non-governmental organisations involved in vaccine delivery, support, or coordination.
- Delivery Model Type
    - Single-platform
      Single_platform: boolean // Return true if this paper reports that the vaccination is delivered through one platform or site type only throughout the programme or study period.
    - Sequential
      Sequential: boolean // Return true if this paper reports that thevaccination is delivered through different platforms or site types at different stages for example, school-based delivery for dose 1 followed by facility-based or outreach delivery for dose 2 or catch-up.
    - Integrated/simultaneous
      Integrated_simultaneous: boolean // Return true if this paper reports that the vaccination is delivered through two or more platforms or site types operating simultaneously as a deliberate programme strategy for example, school-based delivery combined with community outreach running in parallel to reach out-of-school populations.
    - Unspecified
      Unspecified: boolean // Return true if this paper reports that the delivery model type cannot be determined from the available study description the methods section does not provide sufficient detail to distinguish between single-platform, sequential, or integrated/simultaneous delivery.
- Delivery Platform
    - National Cancer Control Programme
      National_Cancer_Control_Programme: boolean // Return true if this paper reports on delivery through a National Cancer Control Programme, where HPV vaccination is embedded as a component of a broader national cervical cancer elimination or control strategy.
    - HIV treatment platform
      HIV_treatment_platform: boolean // Return true if this paper reports on delivery through an HIV treatment or care platform, such as ART clinics or HIV community services, targeting populations living with or at risk of HIV.
    - School Health
      School_Health: boolean // Return true if this paper reports on delivery through a school-based health programme.
    - Adolescent Health
      Adolescent_Health: boolean // Return true if this paper reports on delivery through an adolescent health platform, which may operate within or outside of school settings.
    - Routine EPI
      Routine_EPI: boolean // Return true if this paper reports on delivery through the routine Expanded Programme on Immunization (EPI), encompassing

facility-based, outreach, and mobile strategies.

        - Facility-based
          Facility_based: boolean // Return true if this paper reports on routine EPI delivery based at a fixed health facility, where recipients come to the facility to receive vaccination.
        - Mobile
          HIV_treatment_platform: boolean // Return true if this paper reports on delivery through an HIV treatment or care platform, such as ART clinics or HIV community services, targeting populations living with or at risk of HIV.
        - Outreach
          Outreach: boolean // Return true if this paper reports on routine EPI delivery through outreach, where health workers travel to communities, schools, or other locations outside a fixed facility on a scheduled or periodic basis.
        - Periodic Intensification of Routine Immunization (PIRI)
          Periodic_Intensification_of_Routine_Immunization__PIRI1: boolean // Return true if this paper reports on a short-term, targeted intensification of routine immunisation activities in low-coverage areas, designed to rapidly boost coverage among missed or under-vaccinated populations through catch-up vaccination and defaulter tracing.
    - Campaign
      Campaign: boolean // Return true if this paper reports on delivery through a time-limited vaccination campaign.

        - Integrated campaign
          Integrated_campaign: boolean // Return true if this paper reports on a campaign that integrates HPV vaccination with other health interventions.
        - Multi-age cohort catch-up campaign
          Multi_age_cohort_catch_up_campaign: boolean // Return true if this paper reports on a catch-up campaign targeting multiple age cohorts simultaneously to rapidly increase population coverage.
        - Multiple-antigen campaign
          Multiple_antigen_campaign: boolean // Return true if this paper reports on a campaign delivering HPV vaccine alongside other antigens.
    - Hit-and-run delivery
      Hit_and_run_delivery: boolean // Return true if this paper reports on a delivery strategy used in insecure or conflict-affected settings where vaccination teams rapidly deploy to an area, administer as many doses as possible in a short window, and withdraw before security conditions deteriorate. Characterised by speed, minimal advance notice, and absence of a sustained presence.
- Delivery Site

    - Mobile unit
      Mobile_unit: boolean // Return true if this paper reports on vaccination delivered via a mobile unit such as a vaccination van, ambulance, or temporary structure that travels to communities or populations.
    - Private clinic or pharmacy
      Private_clinic_or_pharmacy: boolean // Return true if this paper reports on vaccination delivered at a private clinic, pharmacy, or other private sector health provider.
    - School
      School: boolean // Return true if this paper reports on vaccination delivered at or through a school.
    - Facility
      Facility: boolean // Return true if this paper reports on vaccination delivered at a public health facility such as a clinic, hospital, or health centre.
    - Community
      Community: boolean // Return true if this paper reports on vaccination delivered in a community setting outside of schools and health facilities, including community centres, places of worship, or open community spaces.
- Equity Dimension
    - Place of residence
      Place_of_residence: boolean // True only if the paper examines geographic location of residence (rural, remote, hard-to-reach, or underserved) in relation to HPV vaccination access or uptake — e.g. coverage disaggregated by it, or analysed as a driver of inequity. Not where rural/urban is only the study setting or a background descriptor. Where the country, region, or income group is the unit of comparison, use Geographic and cross-country equity instead.
    - Ethnicity and race
      Ethnicity_and_race: boolean // True only if the paper examines ethnicity, race, or indigenous status in relation to HPV vaccination access, acceptability, or uptake — e.g. outcomes disaggregated by it, or analysed as a driver of inequity. Not where ethnicity is only a baseline sample characteristic.
    - Religion
      Religion: boolean // True only if the paper examines religious belief, affiliation, or community norms as a factor affecting HPV vaccine acceptability or access. Not where religion is only a descriptive characteristic of participants.
    - Sexual orientation and gender identity
      Sexual_orientation_and_gender_identity: boolean // True only if the paper examines sexual orientation or gender identity (LGBTQI+ or sexual/gender-minority status) as a factor affecting HPV vaccination access or uptake. Reserve for studies focused on these populations; for gender or sex differences more broadly, use Gender.
    - Immunocompromised status
      Immunocompromised_status: boolean // True only if the paper examines immunocompromised status — particularly HIV/ALHIV — in relation to HPV

vaccination eligibility, dosing, or access. Not where immune status is only a clinical descriptor with no access or equity analysis.

- Gender
  Gender: boolean // True only if the paper examines gender or biological sex in relation to HPV vaccination access, uptake, or outcomes (e.g. comparing across sexes/genders, or gender-neutral vs girls-only delivery). Not where it merely reflects that the target group is girls, or appears only as a sample descriptor. For LGBTQI+/minority focus, use Sexual orientation and gender identity.
- Socioeconomic status
  Socioeconomic_status: boolean // True only if the paper examines wealth, income, or deprivation in relation to HPV vaccination coverage or uptake — e.g. coverage disaggregated by wealth quintile, or analysed as a driver of gaps. Not where the study merely takes place in a low-income community or SES is only a sample characteristic. For between-country income comparisons, use Geographic and cross-country equity.
- Disability
  Disability: boolean // True only if the paper examines whether physical, sensory, intellectual, or psychosocial disability affects HPV vaccination access or uptake. Not where disability is mentioned only in passing or as a participant characteristic.
- Education status
  Education_status: boolean // True only if the paper examines education level (recipient or caregiver) or school-enrolment status — including out-of-school adolescents — in relation to HPV vaccination access or uptake. Not where education is only a sample descriptor. For out-of-school purely as a target group, see Target Population.
- Migration status
  Migration_status: boolean // True only if the paper examines migrant, refugee, IDP, or non-citizen status in relation to HPV vaccination access or uptake. Not where it merely describes a humanitarian or displacement setting without analysing migration as a driver of inequity.
- Age
  Age: boolean // True only if the paper analyses age as a driver of differential access, eligibility, or uptake — e.g. comparing coverage across age groups within an eligible cohort, or older vs younger girls in a catch-up cohort. Not where age only defines the target population (e.g. "9–14-year-olds").
- Disease burden and cancer incidence
  Disease_burden_and_cancer_incidence: boolean // True only if the paper frames equity through differential HPV infection, cervical cancer incidence, or mortality across populations or geographies (e.g. highest-burden groups having lowest coverage), or uses burden to justify prioritisation. Not where it simply reports prevalence or burden with no equity comparison.

    - Geographic and cross-country equity
      Geographic_and_cross_country_equity: boolean // True only if the paper analyses disparities in coverage, access, or outcomes where the country, region, income group, or sub-national administrative unit is itself the unit of comparison. Distinct from Place of residence, which covers individual-level rural/urban/remoteness.
    - Occupation
      Occupation: boolean // True only if the paper examines employment, livelihood, or occupational role as a driver of inequity in HPV vaccination access or uptake — e.g. working vs non-working caregivers, or girls who work rather than attend school. Not merely because the study is set in a working community. Distinct from Socioeconomic status (income/wealth).
    - Social capital
      Social_capital: boolean // True only if the paper examines community- or network-level social resources — social networks, collective trust, community cohesion — as a driver of inequity in HPV vaccination access or uptake. Not for individual trust in the health system, which belongs in the BeSD scheme.
- Financing Mechanism
    - Public financing
      Public_financing: boolean // Return true if this paper reports on financing of HPV vaccination through government budget lines, including national health budget allocations, emergency procurement orders, and public expenditure on vaccines and delivery.
    - Donor or external financing
      Donor_or_external_financing: boolean // Return true if this paper reports on financing of HPV vaccination through external donors, including bilateral aid, multilateral funds, and development bank financing.
    - Programme financing
      Programme_financing: boolean // Return true if this paper reports on financing of the vaccination programme through government budgets, donor funding, or institutional sources.
    - User fees
      User_fees: boolean // Return true if this paper reports on fees charged to recipients or caregivers at the point of vaccination, which may act as a barrier to uptake.
- Fragility Humanitarian Context
    - Fragile state
      Fragile_state: boolean // Return true if this paper reports on a country or sub-national setting classified as fragile due to weak institutions, governance failure, or social cohesion breakdown, in the absence of active armed conflict.
    - Conflict-affected
      Conflict_affected: boolean // Return true if this paper reports on a setting experiencing active or recent armed conflict, where health system functioning and service delivery are directly disrupted by violence or insecurity.

    - Humanitarian and emergency response
      Humanitarian_and_emergency_response: boolean // Return true if this paper reports on a setting in which HPV delivery is being conducted as part of a formal humanitarian response, including natural disaster, epidemic, or protracted crisis contexts.
    - Refugee and IDP setting
      Refugee_and_IDP_setting: boolean // Return true if this paper reports on a setting serving refugees, asylum seekers, or internally displaced persons, typically in camps, collective centres, or urban displacement contexts.
- Governance Actor
    - National immunisation programme/EPI
      National_immunisation_programme_EPI: boolean // Return true if this paper reports on the national Expanded Programme on Immunization or equivalent national immunisation authority, responsible for policy, scheduling, and oversight of all vaccines including HPV.
    - NITAG
      NITAG: boolean // Return true if this paper reports on the National Immunisation Technical Advisory Group or equivalent body providing independent scientific and technical advice on vaccine policy to government.
    - Ministry of Interior
      Ministry_of_Interior: boolean // Return true if this paper reports on the Ministry of Interior or equivalent, relevant in contexts where population registration, identity documents, or security coordination affect HPV programme reach.
    - Ministry of Gender or Humanitarian Affairs
      Ministry_of_Gender_or_Humanitarian_Affairs: boolean // Return true if this paper reports on government ministries responsible for gender, women s affairs, humanitarian response, or social protection, which may play a governance role in HPV programmes targeting girls and adolescents.
    - Other government ministry
      Other_government_ministry: boolean // Return true if this paper reports on a government ministry or body not covered by other Governance Actor concepts that plays a formal role in HPV programme governance.
    - Ministry of Health
      Ministry_of_Health: boolean // Return true if this paper reports on the Ministry of Health, typically the lead government agency for vaccination policy and delivery.
    - Ministry of Education
      Ministry_of_Education: boolean // Return true if this paper reports on the Ministry of Education, involved in school-based vaccination delivery and coordination.
    - Ministry of Finance
      Ministry_of_Finance: boolean // Return true if this paper reports on the Ministry of Finance, involved in budget allocation and financing for vaccination programmes.

    - Technical partners
      Technical_partners: boolean // Return true if this paper reports on technical partners providing expertise, guidance, or implementation support for vaccination programmes, including bilateral donors, foundations, and technical agencies.
    - UN partners
      UN_partners: boolean // Return true if this paper reports on United Nations agencies involved in vaccination support, coordination, or financing.
- Implementation Strategy
    - Training
      Training: boolean // Return true if this paper reports on training of personnel involved in HPV vaccine delivery or communication.
    - Management and supervision
      Management_and_supervision: boolean // Return true if this paper reports on management and supervision of HPV vaccination activities, including oversight and quality assurance.
    - Community mobilisation
      Community_mobilisation: boolean // Return true if this paper reports on community mobilisation activities to build awareness, trust, and demand for HPV vaccination.
    - Integration
      Integration: boolean // Return true if this paper reports on integration of HPV vaccination into existing health or education service delivery systems.
    - Advocacy
      Advocacy: boolean // Return true if this paper reports on advocacy efforts to build political commitment, secure funding, or influence policy for HPV vaccination.
- Integration Type
    - Shared funding or budget integration
      Shared_funding_or_budget_integration: boolean // Return true if this paper reports on HPV vaccination integrated with other programmes at the level of shared budgeting, joint financing, or co-funded implementation.
    - Other programme integration
      Other_programme_integration: boolean // Return true if this paper reports on HPV vaccination delivered through or integrated with another programme or platform not covered by other Integration Type concepts, such as HIV/AIDS service platforms, national cancer control programmes, or other vertical programmes.
    - Bundled communication/health education
      Bundled_communication_health_education: boolean // Return true if this paper reports on HPV vaccination bundled with communication, demand generation, or health education activities as part of an integrated delivery approach.
    - Service co-delivery
      Service_co_delivery: boolean // Return true if this paper reports on HPV

vaccine co-delivered alongside one or more other health interventions at the same point of contact, whether with other vaccines or with other health services.

    - Monitoring
      Monitoring: boolean // Return true if this paper reports on HPV vaccination activities that are integrated with monitoring, surveillance, or data collection systems of other health programmes.
    - Planning
      Planning: boolean // Return true if this paper reports on HPV vaccination integrated at the planning, coordination, or policy level with other health or education programmes.
- Misinformation Activity
    - Misinformation banks
      Misinformation_banks: boolean // Return true if this paper reports on context- and location-specific repositories of known vaccine misinformation, used to support detection and response efforts.
    - Detection
      Detection: boolean // Return true if this paper reports on activities focused on detecting vaccine misinformation, including monitoring and surveillance of information environments.

        - Behavioural and communication response interventions (indirect detection)
          Behavioural_and_communication_response_interventions__indirect_detection_: boolean // Return true if this paper reports on strategies that address misinformation by analysing behavioural responses, public concerns, or communication gaps that emerge in relation to HPV vaccination.
        - Community and frontline feedback
          Community_and_frontline_feedback: boolean // Return true if this paper reports on mechanisms that gather insights from healthcare workers, community leaders, social mobilizers, teachers, parents, religious leaders, adolescents and other local actors.
        - Digital and social media listening
          Digital_and_social_media_listening: boolean // Return true if this paper reports on approaches that monitor online conversations, posts, comments, and trends across platforms such as Facebook, X/Twitter, WhatsApp, TikTok, and other digital forums
        - Integrated misinformation reporting and response dashboards
          Integrated_misinformation_reporting_and_response_dashboards: boolean // Return true if this paper reports on systems that consolidate information from digital, community, and traditional media sources into a unified platform.

        - Traditional media monitoring
          Traditional_media_monitoring: boolean // Return true if this paper reports on tracking misinformation trends and narratives disseminated through radio, newspapers, television, and other mass communication channels.
    - Addressing
      Addressing: boolean // Return true if this paper reports on activities focused on addressing vaccine misinformation through a range of strategies.

        - Communication and information correction strategies
          Communication_and_information_correction_strategies: boolean // Return true if this paper reports on strategies to correct misinformation through direct communication, fact-checking, or information provision.
        - Community engagement and interpersonal communication approaches
          Community_engagement_and_interpersonal_communication_approaches: boolean // Return true if this paper reports on approaches that use community dialogue, trusted intermediaries, or interpersonal communication to counter misinformation.
        - Curriculum integration and educational interventions
          Curriculum_integration_and_educational_interventions: boolean // Return true if this paper reports on integration of misinformation awareness or critical thinking into educational curricula or formal learning settings.
        - Digital communication and online response strategies
          Digital_communication_and_online_response_strategies: boolean // Return true if this paper reports on strategies using social media, websites, or other digital platforms to counter online misinformation.
        - Integrated communication or multi-component approaches
          Integrated_communication_or_multi_component_approaches: boolean // Return true if this paper reports on multi-component approaches that combine several communication strategies to address misinformation.
        - Legal and regulatory strategies
          Legal_and_regulatory_strategies: boolean // Return true if this paper reports on legal or regulatory measures to restrict the spread of vaccine misinformation.
        - Social and behaviour change communication (SBCC) interventions
          Social_and_behaviour_change_communication__SBCC__interventions: boolean // Return true if this paper reports on structured SBCC interventions designed to shift attitudes and behaviours around vaccine misinformation.
        - Traditional media and public awareness activities
          Traditional_media_and_public_awareness_activities: boolean // Return true if this paper reports on the use of radio, television, print, or other traditional media to counter misinformation and raise public awareness.

    - Misinformation as barrier
      Misinformation_as_barrier: boolean // Return true if this paper reports on misinformation or conflicting information about HPV vaccination that functions as a barrier to vaccine uptake. Applies when the paper explicitly identifies exposure to false, misleading, or contradictory information as a driver of vaccine hesitancy or non-uptake among recipients, caregivers, or communities.
- Outcome Measure
    - Vaccine Impact
      Vaccine_Impact: boolean // Return true if this paper reports on outcomes measuring the biological or epidemiological effect of HPV vaccination at individual or population level.
    - Economic
      Economic: boolean // Return true if this paper reports on outcomes measuring the cost, cost-effectiveness, or economic value of HPV vaccination programmes.
    - Delivery and Operations
      Delivery_and_Operations: boolean // Return true if this paper reports on outcomes measuring the operational performance of the HPV vaccination programme how well the programme reaches, serves, and sustains coverage of its target population.
    - Demand and Acceptability
      Demand_and_Acceptability: boolean // Return true if this paper reports on outcomes measuring whether individuals, caregivers, communities, or health workers are willing to accept, seek out, or recommend HPV vaccination.
- Program Scale

    - National
      National: boolean // Return true if this paper reports on a programme that operates at national scale, covering all or the majority of the country s eligible population within the national immunisation system.
    - Sub-national
      Sub_national: boolean // Return true if this paper reports on a programme that operates at sub-national scale, covering one or more administrative units such as provinces, regions, or districts, but not yet the whole country.
    - Pilot/demonstration
      Pilot_demonstration: boolean // Return true if this paper reports on a programme that is a small-scale pilot or demonstration project, designed to generate evidence or test feasibility before broader introduction or scale-up.
- Program Stage
    - Pre-introduction
      Pre_introduction: boolean // Return true if this paper reports on the period before HPV vaccine introduction has begun, including feasibility studies,

demonstration projects, pilot programmes, and planning activities preparing for national or sub-national rollout.

    - Introduction
      Introduction: boolean // Return true if this paper reports on the initial phase of HPV vaccine introduction into a national or sub-national immunisation programme, from first rollout through early scale-up.
    - Routine/established
      Routine_established: boolean // Return true if this paper reports on HPV vaccination delivered as part of an established, ongoing routine immunisation schedule with stable coverage and systems.
- Quality Of Care Dimension
    - Referral systems
      Referral_systems: boolean // Return true if this paper reports on the quality of referral systems linking vaccination sites to other facilities or services, including the effectiveness of handoffs when a site is out of stock, unable to vaccinate a specific patient, or needs to connect recipients with other health services.
    - Availability of vaccines
      Availability_of_vaccines: boolean // Return true if this paper reports on whether vaccines are available at the point of delivery when needed.
    - Accessibility
      Accessibility: boolean // Return true if this paper reports on whether vaccination services are accessible to the target population in terms of distance, cost, and convenience.
    - Interpersonal interaction
      Interpersonal_interaction: boolean // Return true if this paper reports on the quality of interpersonal interactions between health workers and vaccine recipients or caregivers, including provider attitude, counselling quality, respectful communication, and wait times.
    - Consent
      Consent: boolean // Return true if this paper reports on processes and requirements related to obtaining informed consent for vaccination.
- Setting Context
    - Urban
      Urban: boolean // Return true if this paper reports on an urban setting, typically characterised by higher population density and closer proximity to health infrastructure.
    - Rural
      Rural: boolean // Return true if this paper reports on a rural setting, typically characterised by lower population density, greater distances to health facilities, and more dispersed communities.
    - Hard-to-reach
      Hard_to_reach: boolean // Return true if this paper reports on a setting where populations face significant barriers to accessing health services due to

geographic isolation, poor infrastructure, or other structural factors that impede routine service delivery.

- Study Design
    - Mixed methods
      Mixed_methods: boolean // Return true if this paper reports on studies explicitly combining quantitative and qualitative methods in a single study design.
    - Modelling and economic evaluation
      Modelling_and_economic_evaluation: boolean // Return true if this paper reports on studies using mathematical, computational, or economic models rather than primary empirical data.

        - Economic evaluation
          Economic_evaluation: boolean // Return true if this paper reports on an economic evaluation comparing costs and outcomes of alternative interventions or strategies.

            - Budget impact analysis (BIA)
              Budget_impact_analysis__BIA_: boolean // Return true if this paper reports on budget impact analysis assessing the affordability of an intervention within a specific budget context.
            - Cost analysis/costing study
              Cost_analysis_costing_study: boolean // Return true if this paper reports on a cost analysis or costing study estimating the costs of an intervention without comparing outcomes.
            - Cost-benefit analysis (CBA)
              Cost_benefit_analysis__CBA_: boolean // Return true if this paper reports on cost-benefit analysis expressing both costs and benefits in monetary terms.
            - Cost-effectiveness analysis (CEA)
              Cost_effectiveness_analysis__CEA_: boolean // Return true if this paper reports on cost-effectiveness analysis comparing cost per unit of health outcome, such as cost per DALY averted.
            - Cost-utility analysis (CUA)
              Cost_utility_analysis__CUA_: boolean // Return true if this paper reports on cost-utility analysis comparing cost per quality-adjusted life year (QALY).
        - Modelling study
          Modelling_study: boolean // Return true if this paper reports on a study using mathematical or computational models to estimate outcomes, costs, or impacts, not primarily based on primary empirical data collection.
    - Evidence synthesis
      Evidence_synthesis: boolean // Return true if this paper reports on studies

synthesising evidence from multiple primary studies.

        - Narrative or scoping review
          Narrative_or_scoping_review: boolean // Return true if this paper reports on a narrative or scoping review synthesising evidence without the full systematic review methodology.
        - Systematic review and meta-analysis
          Systematic_review_and_meta_analysis: boolean // Return true if this paper reports on a systematic review, with or without meta-analysis, synthesising evidence from multiple primary studies.
    - Qualitative empirical
      Qualitative_empirical: boolean // Return true if this paper reports on studies using qualitative empirical methods to collect and analyse non-numerical data.

        - Documentary analysis
          Documentary_analysis: boolean // Return true if this paper reports on a study drawing on policy documents, programme reports, grey literature, or other documentary sources as primary evidence.
        - Focus group discussion
          Focus_group_discussion: boolean // Return true if this paper reports on a study using focus group discussions as the primary data collection method.
        - In-depth and key informant interviews
          In_depth_and_key_informant_interviews: boolean // Return true if this paper reports on a study using in-depth interviews (IDI) or key informant interviews (KII) as the primary data collection method.
        - Qualitative study
          Qualitative_study: boolean // Return true if this paper reports on a study using qualitative methods to collect and analyse non-numerical data.
    - Quantitative empirical
      Quantitative_empirical: boolean // Return true if this paper reports on studies using quantitative empirical methods to collect or analyse numerical data.

        - Clinical trial
          Clinical_trial: boolean // Return true if this paper reports on a controlled clinical trial evaluating HPV vaccine safety, immunogenicity, or efficacy.
        - Observational study
          Observational_study: boolean // Return true if this paper reports on a study observing outcomes without an intervention, including cohort, case-control, and cross-sectional designs not primarily measuring prevalence.
        - Prevalence study
          Prevalence_study: boolean // Return true if this paper reports on a study

measuring the prevalence of HPV infection, related disease, or vaccination coverage in a population.

        - Programme evaluation or implementation research
          Programme_evaluation_or_implementation_research: boolean // Return true if this paper reports on a study designed to evaluate the implementation, scale-up, feasibility, or real-world effectiveness of an HPV vaccination programme or intervention.
        - Quasi-experimental study
          Quasi_experimental_study: boolean // Return true if this paper reports on a study using a non-randomised design to evaluate an intervention, such as interrupted time series, difference-in-differences, or propensity score matching.
        - Randomised controlled trial
          Randomised_controlled_trial: boolean // Return true if this paper reports on a randomised controlled trial evaluating an HPV vaccine delivery strategy, intervention, or programme component.
- Supply Chain Aspect
    - Wastage management
      Wastage_management: boolean // Return true if this paper reports on management of HPV vaccine wastage, including open vial wastage policies, wastage rates, and strategies to minimise dose loss.
    - Vaccine expiration management
      Vaccine_expiration_management: boolean // Return true if this paper reports on management of vaccine expiration, including stock rotation, shelf-life monitoring, and disposal of expired doses.
    - Cold chain maintenance
      Cold_chain_maintenance: boolean // Return true if this paper reports on maintenance and operational upkeep of cold chain equipment and systems, including refrigeration, temperature monitoring devices, and repair capacity.
    - Financial and resource constraints
      Financial_and_resource_constraints: boolean // Return true if this paper reports on financial or resource constraints affecting supply chain operations, including budget shortfalls, underfunding of logistics, and resource gaps that limit vaccine procurement, storage, or distribution.\",
    - Forecasting
      Forecasting: boolean // Return true if this paper reports on forecasting of vaccine demand and supply needs.
    - Distribution
      Distribution: boolean // Return true if this paper reports on distribution of vaccines from central stores to points of delivery.
    - Supply chain management
      Supply_chain_management: boolean // Return true if this paper reports on management of the vaccine supply chain, including logistics planning and coordination.

    - Supply chain capacity
      Supply_chain_capacity: boolean // Return true if this paper reports on the capacity of the supply chain infrastructure, including storage, transport, and personnel.
    - Cold chain integrity
      Cold_chain_integrity: boolean // Return true if this paper reports on maintaining the integrity of the cold chain from manufacturer to point of delivery.
    - Stock-outs
      Stock_outs: boolean // Return true if this paper reports on instances where vaccine stock is unavailable at the point of delivery.
- Target Population
    - School enrolment
        - In-school adolescents
          In_school_adolescents: boolean // Return true if this paper reports on adolescents currently enrolled in school and reachable through school-based HPV vaccination platforms.
        - Out-of-school adolescents
          Out_of_school_adolescents: boolean // Return true if this paper reports on adolescents not enrolled in school and therefore not reachable through standard school-based HPV vaccination platforms.
    - Sex
      Sex: boolean // Return true if this paper reports on the sex of the target population.
        - Female only
          Female_only: boolean // Return true if this paper reports on the study or intervention targets females only.
        - Male only
          Male_only: boolean // Return true if this paper reports on the study or intervention targets males only.
        - Female and male - gender neutral
          Female_and_male___gender_neutral: boolean // Return true if this paper reports on the study or intervention targets all sexes.
    - Special Population
        - Men who have sex with men
          Men_who_have_sex_with_men: boolean // Return true if this paper reports on men who have sex with men (MSM), a population with specific HPV exposure risk and vaccination relevance, particularly in programmes in the European and Americas regions.
        - Zero-dose/missed communities
          Zero_dose_missed_communities: boolean // Return true if this paper reports on communities where individuals have received zero doses of any vaccine, identified by vaccination status rather than geographic accessibility.

        - Immunocompromised populations
          Immunocompromised_populations: boolean // Return true if this paper reports on populations with compromised immune systems primarily adolescents living with HIV (ALHIV) who have specific HPV vaccine dosing recommendations and elevated cervical cancer risk.
    - Age Group
        - 9-14 years
          9___14_years: boolean // Return true if this paper reports on adolescents aged 9 to 14 years. The primary HPV vaccination target age range per WHO guidelines, corresponding to pre-sexual debut and optimal immunogenicity.
        - 15-20 years
          15_20_years: boolean // Return true if this paper reports on adolescents aged 15 to 20 years. Secondary or catch-up target cohort in many HPV programmes.
        - 21+ years
          21__years: boolean // Return true if this paper reports on adults aged 21 years and older. Includes older women targeted in catch-up programmes and male populations in gender-neutral strategies.
        - 0-8 years
          0__8_years: boolean // Return true if this paper reports on children aged 0 to 8 years. Below the standard HPV primary target age; may be relevant for younger sibling studies or multi-antigen delivery research.
- UNICEF Region
    - North America
      North_America1: boolean // Return true only if this study is about or the participants are from any of the following countries: Canada; United States
    - East Asia and Pacific
      East_Asia_and_Pacific1: boolean // Return true only if this study is about or the participants are from any of the following countries: Australia; Brunei Darussalam; China; Cook Islands; Fiji; Indonesia; Japan; Cambodia; Kiribati; Lao People's Democratic Republic; Malaysia; Marshall Islands; Micronesia (Federated States of); Democratic People's Republic of Korea; Myanmar; Nauru; Mongolia; New Zealand; Niue; Palau; Philippines; Republic of Korea; Samoa; Papua New Guinea; Singapore; Solomon Islands; Thailand; Timor-Leste; Tokelau; Tonga; Tuvalu; Vanuatu; Viet Nam
    - Eastern and Southern Africa
      Eastern_and_Southern_Africa1: boolean // Return true only if this study is about or the participants are from any of the following countries: Angola; Botswana; Burundi; Comoros; Djibouti; Eritrea; Ethiopia; Eswatini; Madagascar; Kenya; Mozambique; Malawi; Lesotho; Mauritius; Namibia; Rwanda; Sudan; Seychelles; Somalia; South Africa; South Sudan; Uganda; United Republic of Tanzania; Zambia; Zimbabwe

    - Europe and Central Asia
      Europe_and_Central_Asia1: boolean // Return true only if this study is about or the participants are from any of the following countries: Andorra; Austria; Belgium; Cyprus; Czechia; Denmark; Estonia; Finland; France; Germany; Greece; Holy See; Hungary; Iceland; Ireland; Italy; Latvia; Liechtenstein; Lithuania; Luxembourg; Malta; Monaco; Netherlands (Kingdom of the); Norway; Poland; Portugal; San Marino; Slovakia; Slovenia; Spain; Sweden; Switzerland; United Kingdom; Albania; Armenia; Azerbaijan; Belarus; Bosnia and Herzegovina; Bulgaria; Croatia; Georgia; Kazakhstan; Kyrgyzstan; Republic of Moldova; Montenegro; North Macedonia; Romania; Russian Federation; Serbia; Tajikistan; Türkiye; Turkmenistan; Ukraine; Uzbekistan
    - Latin America and Caribbean
      Latin_America_and_Caribbean1: boolean // Return true only if this study is about or the participants are from any of the following countries: Anguilla; Antigua and Barbuda; Argentina; Bahamas; Barbados; Belize; Bolivia (Plurinational State of); Brazil; British Virgin Islands; Chile; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Ecuador; El Salvador; Guyana; Grenada; Guatemala; Honduras; Haiti; Jamaica; Mexico; Montserrat; Nicaragua; Panama; Paraguay; Peru; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; Turks and Caicos Islands; Uruguay; Venezuela (Bolivarian Republic of)
    - Middle East and North Africa
      Middle_East_and_North_Africa1: boolean // Return true only if this study is about or the participants are from any of the following countries: Algeria; Bahrain; Egypt; Iran (Islamic Republic of); Iraq; Israel; Jordan; Kuwait; Lebanon; Libya; Morocco; Oman; Qatar; Saudi Arabia; State of Palestine; Syrian Arab Republic; Tunisia; United Arab Emirates; Yemen
    - South Asia
      South_Asia1: boolean // Return true only if this study is about or the participants are from any of the following countries: Afghanistan; Bangladesh; Bhutan; India; Sri Lanka; Maldives; Nepal; Pakistan
    - West and Central Africa
      West_and_Central_Africa1: boolean // Return true only if this study is about or the participants are from any of the following countries: Benin; Burkina Faso; Cabo Verde; Cameroon; Central African Republic; Chad; Congo; Côte d'Ivoire; Democratic Republic of the Congo; Equatorial Guinea; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Liberia; Mali; Mauritania; Niger; Nigeria; Sao Tome and Principe; Senegal; Sierra Leone; TogoBenin; Burkina Faso; Cabo Verde; Cote d'Ivoire; Cameroon; Central African Republic; Democratic Republic of the Congo; Congo; Equatorial Guinea; Guinea; Gambia; Gabon; Guinea-Bissau; Ghana; Liberia; Mali; Niger; Mauritania; Nigeria; Senegal; Sierra Leone; Sao Tome and Principe; Chad; Togo
- Vaccination Eligibility

    - Routine target cohort
      Routine_target_cohort: boolean // Return true if this paper reports on the cohort of girls (or boys in gender-neutral programmes) scheduled for HPV vaccination through the routine immunisation programme at the nationally defined target age, typically 9 to14 years.
    - Vaccination Policy
      Vaccination_Policy: boolean // Return true if this paper reports on the official policy governing HPV vaccination eligibility, such as national mandates, recommendations, or sub-national policies.
    - Target Age
      Target_Age: boolean // Return true if this paper reports on the age or age range targeted for HPV vaccination under the relevant policy.
    - Secondary Target Population
      Secondary_Target_Population: boolean // Return true if this paper reports on populations beyond the primary target age who are eligible for HPV vaccination, such as catch-up cohorts or specific risk groups.
- Vaccine Schedule
    - Three or more doses
      Three_or_more_doses: boolean // Return true if this paper reports on a vaccine schedule involving three or more doses, as recommended for immunocompromised populations including adolescents living with HIV in some country guidelines.
    - Single dose
      Single_dose: boolean // Return true if this paper reports on a single-dose HPV vaccination schedule.
    - Two dose
      Two_dose: boolean // Return true if this paper reports on a two-dose HPV vaccination schedule.
    - Extended interval
      Extended_interval: boolean // Return true if this paper reports on an extended interval schedule with a longer gap between doses than the standard recommendation.
- WHO Region
    - African Region
      African_Region: boolean // Return true only if this study is about or the participants are from any of the following countries: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d Ivoire, Democratic Republic of the Congo, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, South Sudan, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

    - Region of the Americas
      *Region_of_the_Americas: boolean // Return true only if this study is about or the participants are from any of the following countries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico (*Associate WHO Member State), Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States of America, Uruguay, Venezuela (Bolivarian Republic of)*
    - South-East Asia Region
      South_East_Asia_Region: boolean // Return true only if this study is about or the participants are from any of the following countries: Bangladesh, Bhutan, Democratic People s Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste
    - European Region
      European_Region: boolean // Return true only if this study is about or the participants are from any of the following countries: Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria,
      Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Türkiye, Turkmenistan, Ukraine, United Kingdom of Great Britain and Northern Ireland, Uzbekistan
    - Eastern Mediterranean Region
      *Eastern_Mediterranean_Region: boolean // Return true only if this study is about or the participants are from any of the following countries: Afghanistan, Bahrain, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, West Bank and Gaza Strip (*Non-Member area), Yemen*
    - Western Pacific Region
      *Western_Pacific_Region: boolean // Return true only if this study is about or the participants are from any of the following countries: Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Fiji, Japan, Kiribati, Lao People s Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Tokelau (*Associate WHO Member State), Tonga, Tuvalu, Vanuatu, Viet Nam*
- World Bank Region

    - East Asia and Pacific
      East_Asia_and_Pacific: boolean // Return true if this study was undertaken in any country in East Asia or the Pacific as defined by the world bank
    - Europe and Central Asia
      Europe_and_Central_Asia: boolean // Return true if this study was undertaken in any European or Central Asian country as defined by the world bank
    - Latin America and Caribbean
      Latin_America_and_Caribbean: boolean // Return true if this study was undertaken in any Latin American or Caribbean country as defined by the world bank
    - Middle East and North Africa
      Middle_East_and_North_Africa: boolean // Return true if this study was undertaken in at least one country in the Middle East, North Africa, Afghanistan or Pakistan as defined by the world bank's Middle East and North Africa region
    - North America
      North_America: boolean // Return true if this study was undertaken in any North American country as defined by the world bank
    - South Asia
      South_Asia: boolean // Return true if this study was undertaken in any country in South Asia as defined by the world bank
    - Sub-Saharan Africa
      Sub_Saharan_Africa: boolean // Return true if this study was undertaken in any country in Sub Saharan Africa as defined by the world bank
- Funder
  Funder: string // Please report the funders of this study or body of work
- Thematic Focus - Primary
    - Behavioural and social drivers of uptake
      primary_behavioural: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
      1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement

(health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #1 "Behavioural and social drivers of uptake": studies whose MAIN question is the demand-side determinants of why individuals/caregivers accept or decline (KAP, acceptability, hesitancy, confidence, cultural/religious/gender norms), with NO behaviour-change intervention tested. If an intervention IS tested, primary is #2. If the subject is health-worker KAP, it is #6. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Delivery design and optimisation
  primary_delivery: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget

impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #3 "Delivery design and optimisation": studies whose MAIN question is HOW vaccination is structured or delivered (platform/site/model, school- vs facility-based, single-dose operational rollout, PIRI, catch-up/multi-age cohort, consent models, revitalisation/coverage recovery). If the focus is immunogenicity of a schedule, primary is #11. If equity/reaching the underserved is the lens, #5. If co-delivery of other services is the point, #4. Coverage reported as an outcome does not move it to #9. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Demand generation and communication strategies
  primary_demand: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning,

monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #2 "Demand generation and communication strategies": studies where an intervention or strategy to inform, motivate, or mobilise is the unit of analysis (campaigns, community mobilisation, peer education, mHealth/SMS, social media, faith-leader engagement, misinformation detection/response, HCD). If the paper only measures knowledge/attitudes with no intervention, primary is #1. If it is HCW training, #6. If a digital tool is used mainly for coverage measurement, #9. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Equity and hard-to-reach populations
  primary_equity: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological

performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #5 "Equity and hard-to-reach populations": studies whose MAIN question is WHO is being missed and why, or how to reach systematically underserved groups (coverage disparities by PROGRESS+ dimensions, out-of-school girls, zero-dose, fragile/conflict/humanitarian settings, disability-inclusive, ALHIV/immunocompromised, migrants/refugees). If the paper is merely SET in a poor/rural area without analysing equity, primary is #3. A general acceptability study without an equity analysis is #1. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Financing and programme sustainability
  primary_financing: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF

that single best-fit primary theme is #8 "Financing and programme sustainability": studies whose MAIN subject is cost, financing, or economic value (programme costing, CEA/CUA, budget impact, Gavi co-financing/transition/bridge funding, domestic financing, willingness-to-pay, ROI, post-transition sustainability, recipient-side financial barriers). If it is epidemiological modelling without economic outcomes, primary is #10. Governance without a financing focus is #7. A delivery study where cost is only a secondary variable is #3. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Governance policy and political commitment
  primary_governance: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #7 "Governance, policy and political commitment": studies whose MAIN question is WHO decides/leads or HOW programmes are governed and introduced (NITAG processes, programme

introduction decisions, MoH-MoE coordination, political economy/prioritisation, stakeholder analyses, comparative introduction trajectories). If the focus is financing/budget without governance, primary is #8. If it is operational delivery, #3. If workforce capacity, #6. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Health workforce capacity and engagement
  primary_workforce: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #6 "Health workforce capacity and engagement": studies where health workers are the PRIMARY subject (their HPV knowledge/attitudes/practice, recommendation rates and barriers, training-programme evaluation, task-shifting to CHWs/lay cadres, supportive supervision). If HCWs are simply the delivery actors but their capacity is not the subject, primary is #3. If HCWs act as communication senders in a demand-generation study, #2. If any other theme is the better fit, do NOT tick.

Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Measurement data systems and enumeration
  primary_measurement: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #9 "Measurement, data systems and enumeration": studies whose MAIN subject is HOW coverage is measured or HOW data quality is assessed/improved (coverage-survey methodology, administrative-data quality, denominator estimation/enumeration, GIS microplanning, comparison of data sources, digital monitoring tools, coverage-decline detection). If a model uses coverage data to project impact, primary is #10. If data is only a sub-component of a delivery study, #3. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Modelling and impact projection
  primary_modelling: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #10 "Modelling and impact projection": studies whose MAIN contribution is a mathematical/statistical/simulation model (transmission models of vaccination impact, cervical-cancer elimination projections, single- vs multi-dose population-impact models, optimal allocation/scheduling models, herd-immunity models, combined vaccination-screening impact models). If it is a CEA without epidemiological modelling as the primary method, primary is #8. Coverage measurement is #9. Clinical efficacy is #11. If any other theme is the better fit, do NOT tick.
  Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.
- Service integration and co-delivery
  primary_integration: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide

the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:
1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #4 "Service integration and co-delivery": studies whose MAIN question is HOW HPV is integrated or co-delivered with another service at point of care (co-administration with other vaccines, SRH/adolescent-health/HIV-ART integration, mother-daughter vaccination-screening, combined vaccination+screening). If it is school-based delivery WITHOUT co-delivery of other services, primary is #3. If community contacts are used merely as demand touchpoints, #2. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Vaccine efficacy immunogenicity and schedule
  primary_efficacy: boolean // SINGLE-SELECT thematic classification. Across the WHOLE set of primary_* flags, EXACTLY ONE must be ticked. First decide the paper's PRIMARY theme: the single theme that best matches its main research question and primary reported outcomes. Choose the single best fit from these 11 candidates:

1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Tick this box ONLY IF that single best-fit primary theme is #11 "Vaccine efficacy, immunogenicity and schedule": studies whose MAIN question is the biological performance of the vaccine (efficacy RCTs, immunogenicity/antibody/seroconversion, real-world effectiveness, immunobridging across schedules/products, duration of protection, cross-protection, safety/AEFI, product comparisons). If it is population-level impact modelling, primary is #10. If it is operational rollout of a single-dose schedule, #3. If it is cost of products, #8. If any other theme is the better fit, do NOT tick. Tie-break: if two themes seem equally central, pick the one more directly tied to the stated research question; if still tied, pick the lower-numbered theme.

- Thematic Focus - Secondary
    - Behavioural and social drivers of uptake

      secondary_behavioural: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:

      1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an

intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #1 "Behavioural and social drivers of uptake" AND #1 is NOT the primary theme. For #1, a substantive contribution means: studies whose MAIN question is the demand-side determinants of why individuals/caregivers accept or decline (KAP, acceptability, hesitancy, confidence, cultural/religious/gender norms), with NO behaviour-change intervention tested. If an intervention IS tested, primary is #2. If the subject is health-worker KAP, it is #6. If the paper has no substantive second theme, or only mentions "Behavioural and social drivers of uptake" in passing, do NOT tick.

- Delivery design and optimisation
  secondary_delivery: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and

optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #3 "Delivery design and optimisation" AND #3 is NOT the primary theme. For #3, a substantive contribution means: studies whose MAIN question is HOW vaccination is structured or delivered (platform/site/model, school- vs facility-based, single-dose operational rollout, PIRI, catch-up/multi-age cohort, consent models, revitalisation/coverage recovery). If the focus is immunogenicity of a schedule, primary is #11. If equity/reaching the underserved is the lens, #5. If co-delivery of other services is the point, #4. Coverage reported as an outcome does not move it to #9. If the paper has no substantive second theme, or only mentions "Delivery design and optimisation" in passing, do NOT tick.

- Demand generation and communication strategies
  secondary_demand: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and

optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #2 "Demand generation and communication strategies" AND #2 is NOT the primary theme. For #2, a substantive contribution means: studies where an intervention or strategy to inform, motivate, or mobilise is the unit of analysis (campaigns, community mobilisation, peer education, mHealth/SMS, social media, faith-leader engagement, misinformation detection/response, HCD). If the paper only measures knowledge/attitudes with no intervention, primary is #1. If it is HCW training, #6. If a digital tool is used mainly for coverage measurement, #9. If the paper has no substantive second theme, or only mentions "Demand generation and communication strategies" in passing, do NOT tick.

- Equity and hard-to-reach populations
  secondary_equity: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and

optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #5 "Equity and hard-to-reach populations" AND #5 is NOT the primary theme. For #5, a substantive contribution means: studies whose MAIN question is WHO is being missed and why, or how to reach systematically underserved groups (coverage disparities by PROGRESS+ dimensions, out-of-school girls, zero-dose, fragile/conflict/humanitarian settings, disability-inclusive, ALHIV/immunocompromised, migrants/refugees). If the paper is merely SET in a poor/rural area without analysing equity, primary is #3. A general acceptability study without an equity analysis is #1. If the paper has no substantive second theme, or only mentions "Equity and hard-to-reach populations" in passing, do NOT tick.

- Financing and programme sustainability
  secondary_financing: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and

optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #8 "Financing and programme sustainability" AND #8 is NOT the primary theme. For #8, a substantive contribution means: studies whose MAIN subject is cost, financing, or economic value (programme costing, CEA/CUA, budget impact, Gavi co-financing/transition/bridge funding, domestic financing, willingness-to-pay, ROI, post-transition sustainability, recipient-side financial barriers). If it is epidemiological modelling without economic outcomes, primary is #10. Governance without a financing focus is #7. A delivery study where cost is only a secondary variable is #3. If the paper has no substantive second theme, or only mentions "Financing and programme sustainability" in passing, do NOT tick.

- Governance policy and political commitment
  secondary_governance: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and

optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #7 "Governance, policy and political commitment" AND #7 is NOT the primary theme. For #7, a substantive contribution means: studies whose MAIN question is WHO decides/leads or HOW programmes are governed and introduced (NITAG processes, programme introduction decisions, MoH-MoE coordination, political economy/prioritisation, stakeholder analyses, comparative introduction trajectories). If the focus is financing/budget without governance, primary is #8. If it is operational delivery, #3. If workforce capacity, #6. If the paper has no substantive second theme, or only mentions "Governance, policy and political commitment" in passing, do NOT tick.

- Health workforce capacity and engagement
  secondary_workforce: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model,

schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #6 "Health workforce capacity and engagement" AND #6 is NOT the primary theme. For #6, a substantive contribution means: studies where health workers are the PRIMARY subject (their HPV knowledge/attitudes/practice, recommendation rates and barriers, training-programme evaluation, task-shifting to CHWs/lay cadres, supportive supervision). If HCWs are simply the delivery actors but their capacity is not the subject, primary is #3. If HCWs act as communication senders in a demand-generation study, #2. If the paper has no substantive second theme, or only mentions "Health workforce capacity and engagement" in passing, do NOT tick.

- Measurement data systems and enumeration
  secondary_measurement: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service

integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #9 "Measurement, data systems and enumeration" AND #9 is NOT the primary theme. For #9, a substantive contribution means: studies whose MAIN subject is HOW coverage is measured or HOW data quality is assessed/improved (coverage-survey methodology, administrative-data quality, denominator estimation/enumeration, GIS microplanning, comparison of data sources, digital monitoring tools, coverage-decline detection). If a model uses coverage data to project impact, primary is #10. If data is only a sub-component of a delivery study, #3. If the paper has no substantive second theme, or only mentions "Measurement, data systems and enumeration" in passing, do NOT tick.

- Modelling and impact projection
  secondary_modelling: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service

integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #10 "Modelling and impact projection" AND #10 is NOT the primary theme. For #10, a substantive contribution means: studies whose MAIN contribution is a mathematical/statistical/simulation model (transmission models of vaccination impact, cervical-cancer elimination projections, single- vs multi-dose population-impact models, optimal allocation/scheduling models, herd-immunity models, combined vaccination-screening impact models). If it is a CEA without epidemiological modelling as the primary method, primary is #8. Coverage measurement is #9. Clinical efficacy is #11. If the paper has no substantive second theme, or only mentions "Modelling and impact projection" in passing, do NOT tick.

- Service integration and co-delivery
  secondary_integration: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
  1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service

integration and co-delivery (HPV integrated/co-delivered with other services at point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #4 "Service integration and co-delivery" AND #4 is NOT the primary theme. For #4, a substantive contribution means: studies whose MAIN question is HOW HPV is integrated or co-delivered with another service at point of care (co-administration with other vaccines, SRH/adolescent-health/HIV-ART integration, mother-daughter vaccination-screening, combined vaccination+screening). If it is school-based delivery WITHOUT co-delivery of other services, primary is #3. If community contacts are used merely as demand touchpoints, #2. If the paper has no substantive second theme, or only mentions "Service integration and co-delivery" in passing, do NOT tick.

- Vaccine efficacy immunogenicity and schedule

secondary_efficacy: boolean // OPTIONAL secondary theme. Across the WHOLE set of secondary_* flags, AT MOST ONE may be ticked - and for most papers ZERO is correct. First identify the paper's single PRIMARY theme from these 11 candidates:
1 Behavioural and social drivers of uptake (WHY people accept or decline; KAP, acceptability, hesitancy, confidence, social/cultural norms; NO intervention tested) 2 Demand generation and communication strategies (an intervention/strategy to inform, motivate, or mobilise (campaigns, mobilisation, peer ed, mHealth, misinformation response)) 3 Delivery design and optimisation (HOW delivery is structured/optimised: platform, site, model, schedule, cohort, consent, PIRI, catch-up, coverage recovery) 4 Service integration and co-delivery (HPV integrated/co-delivered with other services at

point of care (co-administration, SRH/HIV, mother-daughter, screening+vax)) 5 Equity and hard-to-reach populations (WHO is missed and why, or how to reach underserved (disaggregated coverage, out-of-school, zero-dose, fragile, disability, ALHIV, migrants)) 6 Health workforce capacity and engagement (health workers as the subject: their knowledge, recommendation practice, training, task-shifting, supervision) 7 Governance, policy and political commitment (WHO decides/leads: programme introduction, NITAG, policy, cross-sectoral coordination, political economy) 8 Financing and programme sustainability (cost, financing, economic value: costing, CEA/CUA, budget impact, Gavi co-financing/transition, WTP, sustainability) 9 Measurement, data systems and enumeration (HOW coverage is measured / data quality: surveys, administrative data, denominators, enumeration, GIS microplanning, monitoring) 10 Modelling and impact projection (a mathematical/statistical/simulation model projecting epidemiological impact or optimal strategy) 11 Vaccine efficacy, immunogenicity and schedule (biological performance: efficacy RCTs, immunogenicity/antibody, real-world effectiveness, safety/AEFI, schedule immunobridging) Then judge whether the paper ALSO makes a substantive, standalone contribution to a DIFFERENT second theme - such that a researcher focused on that second theme would find this paper genuinely useful in its own right, not merely tangential or background/context. Tick this box ONLY IF that substantive second theme is #11 "Vaccine efficacy, immunogenicity and schedule" AND #11 is NOT the primary theme. For #11, a substantive contribution means: studies whose MAIN question is the biological performance of the vaccine (efficacy RCTs, immunogenicity/antibody/seroconversion, real-world effectiveness, immunobridging across schedules/products, duration of protection, cross-protection, safety/AEFI, product comparisons). If it is population-level impact modelling, primary is #10. If it is operational rollout of a single-dose schedule, #3. If it is cost of products, #8. If the paper has no substantive second theme, or only mentions "Vaccine efficacy, immunogenicity and schedule" in passing, do NOT tick.

- Vaccine Type
    - Bivalent HPV vaccine
      Bivalent_HPV_vaccine: boolean // Return true if this paper reports on HPV vaccine targeting two oncogenic HPV types: HPV 16 and HPV 18, which together cause approximately 70% of cervical cancers.
    - Nonavalent HPV vaccine
      Nonavalent_HPV_vaccine: boolean // Return true if this paper reports on HPV vaccine targeting nine HPV types: HPV 6, 11, 16, 18, 31, 33, 45, 52, and 58 providing broader protection against approximately 90% of cervical cancers.
    - Quadrivalent HPV vaccine
      Quadrivalent_HPV_vaccine: boolean // Return true if this paper reports on HPV vaccine targeting four HPV types: HPV 6, 11, 16, and 18 providing protection against both cervical cancer (16/18) and genital warts (6/11).

- Document Type
  Classifies documents by format and, for grey literature, by the type of organisation that produced them. Multiple concepts can be tagged where more than one applies — for example, a jointly published document should receive all relevant sender types. Pre-print/Working Paper can be updated to Journal Article upon formal publication.
    - Book Chapter
      Book_Chapter: boolean // Return true if this paper reports on a contribution to an edited academic volume.
    - Conference & Presentation Material
      Conference_Presentation_Material: boolean // Return true if this paper reports on research or programme experience shared at conferences, webinars, or external events, including slides and presentation decks.
    - Government Report
      Government_Report: boolean // Return true if this paper reports on a report, brief, or document published by a government body at any level.
    - International Development Partner Report
      International_Development_Partner_Report: boolean // Return true if this paper reports on a report, brief, or document published by an international organisation or multilateral body (e.g. WHO, UNICEF, UN agencies, IOM, World Bank, Gavi).
    - Journal Article
      Journal_Article: boolean // Return true if this paper reports on a publication in an academic or professional journal.
    - NGO/Organisation Report
      NGO_Organisation_Report: boolean // Return true if this paper reports on a report, brief, or document published by a non-governmental organisation, research institution, or implementing partner.
    - Pre-print/Working Paper
      Pre-print_Working_Paper: boolean // Return true if this paper reports on preliminary findings, not yet formally published.

Thesis/Dissertation
Thesis_Dissertation: boolean // Return true if this paper reports on graduate-level academic research (e.g. MA, PhD).