Current landscape of HPV vaccination and the way towards elimination.

World Health Organization

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CERVICAL CANCER ELIMINATION

Global strategy to accelerate the elimination of cervical cancer

VISION: A world without cervical cancer

THRESHOLD: All countries to reach < 4 cases 100,000 women years

Estimated 45 million lives can be saved over next 100 years in LMICs
Canfell et al Lancet 2020

2030 CONTROL TARGETS

90%	70%	90%
of girls fully vaccinated with HPV vaccine by 15 years of age	of women screened with a high precision test at 35 and 45 years of age	of women identified with cervical disease receive treatment and care

SDG 2030: Target 3.4 – 30% reduction in mortality from cervical cancer

* Brisson et al. Lancet, 2020; Canfell et al. Lancet 2020

EFFECTIVENESS

Good news from the evidence front

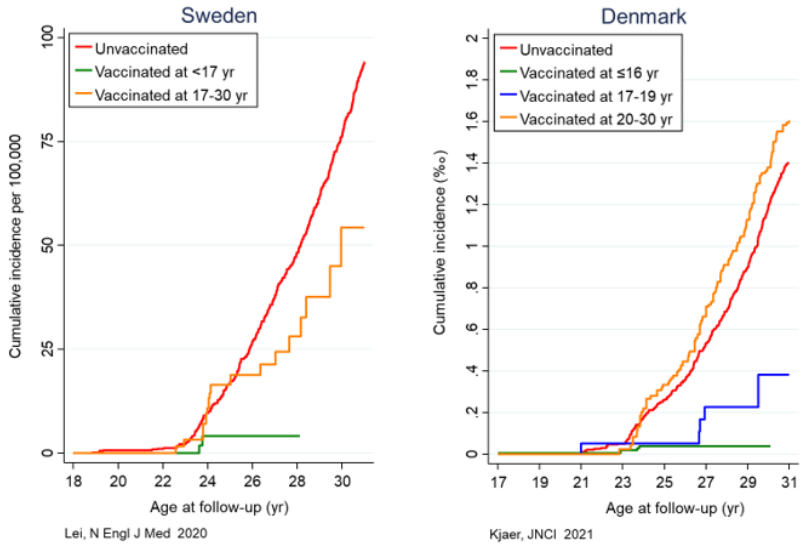


Figure1. Cumulative incidence of cervical cancer stratified by HPV vaccination status and age at vaccination (see legend), observed in linkage studies conducted in Sweden[14], Denmark[15] and Scotland[1], joining individual patient data from vaccination and cancer registries. The X-axis in the two plots on top expresses the years at follow-up, whereas in the plot at the bottom, expresses the years since start of screening invitation.
* For Scotland, restricted to girls who were completely vaccinated.

Arbyn et al. *NCI: Journal of the National Cancer Institute*, djae042, https://doi.org/10.1093/jnci/djae042

J Natl Cancer Inst. 2024 Jan 22:djad263. doi: 10.1093/jnci/djad263. Online ahead of print.

Invasive cervical cancer incidence following bivalent human papillomavirus vaccination: a population-based observational study of age at immunization, dose, and deprivation

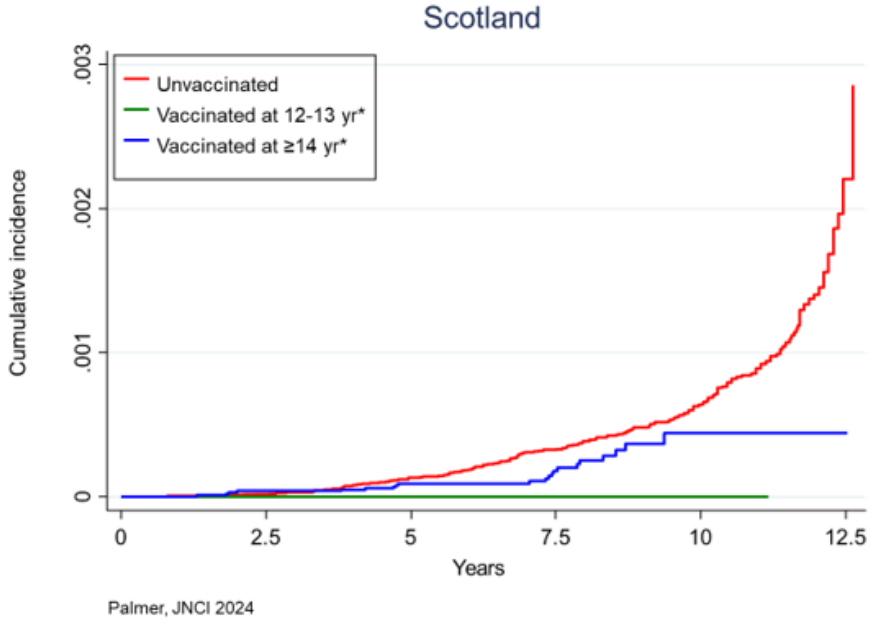
Scotland

Tim J Palmer [1 2], Kimberley Kavanagh [1 3], Kate Cuschieri [4], Ross Cameron [1], Catriona Graham [5], Allan Wilson [6], Kirsty Roy [1]

Affiliations + expand

PMID: 38247547 DOI: 10.1093/jnci/djad263

Results: No cases of invasive cancer were recorded in women immunized at 12 or 13 years of age irrespective of the number of doses. Women vaccinated at 14 to 22 years of age and given 3 doses of the bivalent vaccine showed a significant reduction in incidence compared with all unvaccinated women (3.2/100 000 [95% confidence interval (CI) = 2.1 to 4.6] vs 8.4 [95% CI = 7.2 to 9.6]).



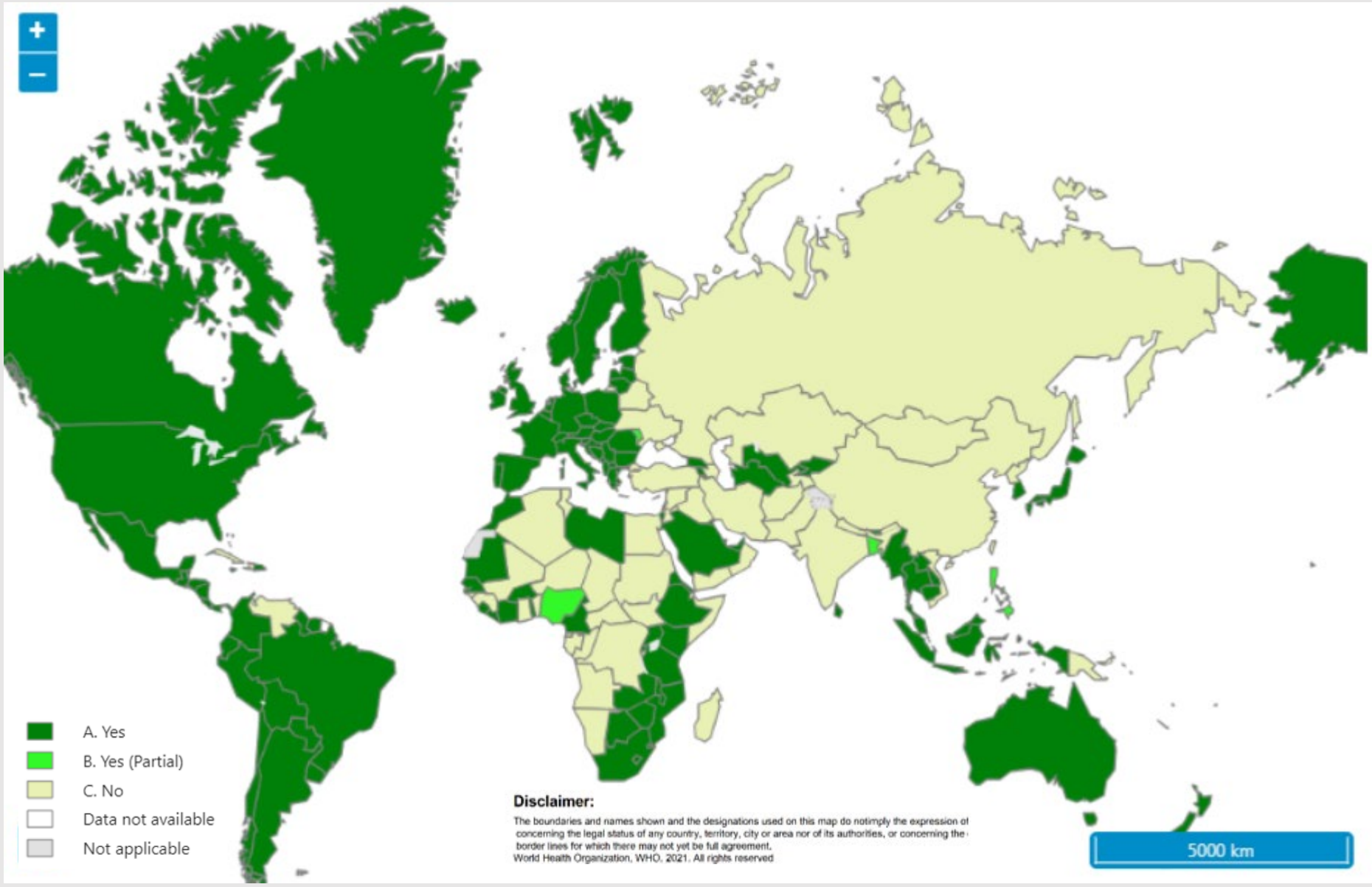
HPV VACCINATION WORLDWIDE

142 Countries introduced HPV vaccination in national programme

142 (73%) countries introduced HPV vaccination

52 (27%) countries did not introduce

2030 Target: 194 countries



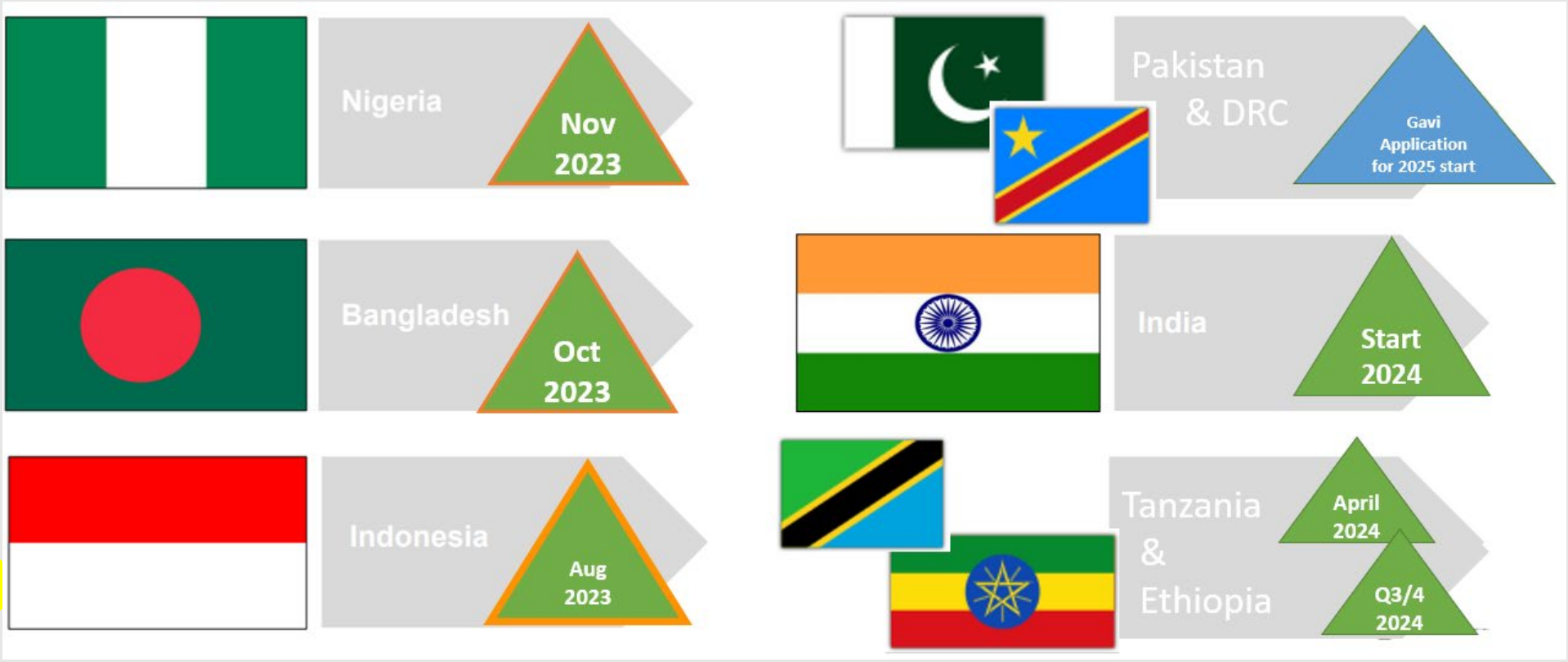
Date of slide: May 2024
Map production: Immunization Vaccines Biologicals (IVB), World Health Organization
Data Source: WHO HPV vax Intro Dashboard

HPV introduction in most populous countries

Global coverage will increase with

Leap from 33% to 48% of global cohort of girls with access to HPV by 2025

Many countries with MAC 9-14



Selected middle-income countries (MICs)* can receive HPV support for new introductions

Introduced

- Eswatini
- Nicaragua

Planning:

- Timor Leste
- Angola
- Cuba
- Kosovo
- Philippines (scale up)
- Tunisia
- Mongolia

Countries and economies eligible under the MICs Approach as of July 2022

Former-Gavi eligible countries			Never-Gavi eligible countries*		
Angola	Guyana	Sri Lanka	Algeria	Kosovo	Saint Lucia
Armenia	Honduras	Timor-Leste	Belize	Lebanon	Saint Vincent and the Grenadines
Azerbaijan	Indonesia	Ukraine	Cabo Verde	Maldives	Samoa
Bhutan	Kiribati	Uzbekistan	Dominica	Marshall Islands	Tonga
Bolivia	Moldova	Viet Nam	Egypt	Micronesia	Tunisia
Cuba	Mongolia		El Salvador	Morocco	Tuvalu
Georgia	Nicaragua		Eswatini	Occupied Palestinian territory	Vanuatu
			Fiji		Venezuela
			Grenada		
			Iran		
				Philippines	

New GAVI policy could support MICs that have not yet introduced HPV

36 Note that countries reta
*Includes World Bank c
a World Bank classifica
oard approval as eligible under the MICs Approach in the absence of

Gavi The Vaccine Alliance

Supply demand balance

Supply increases in recent years have led to a **significant reduction in the risk of global shortages**. In the short-term, under the base supply scenario, access risks still exist if target populations significantly expand; in the low supply scenario this could result in shortages. In the mid-long term, excess supply will require appropriate management.

	Base Supply	Low Supply
Demand Scenarios	**Short-Term (1-3)**	**erm)**
1. Base (w/MACs)		
2. Base (+ w/boys , MACs)		
3. Base (+w/boys, MACs, older age catch-up)		
4. 1-dose w/MACs		
5. 1-dose w/MACs (+boys)		

GLOBAL HEALTH

The New York Times

Millions of Girls in Africa Will Miss HPV Shots After Merck Production Problem

The company has told countries that it can supply only 18.8 million of the 29.6 million doses it was contracted to deliver this year.

*Single dose schedule supporting data assumed available since 2022 only for a limited number of products

- Insufficient supply — Supply <1.1X Demand
- Some risk of shortages — Supply <1.3X Demand
- No risk of shortages — Supply >1.3X Demand
- Excess supply — Supply > 2X Demand

Source: 2023 Market Study

SCHEDULE OPTIMIZATION RECOMMENDATIONS

Updated WHO recommendations* on HPV vaccine schedule can optimize vaccine coverage

Primary target: girls 9 to 14 years of age

2-dose schedule for all ages starting from 9 years old

Option: 1-dose schedule for 9 to 20-year-olds

Prioritize: *- Immunocompromised/HIV+ - 2 doses, ideally 3*
- Multi-Age-Catchup through 18 years at introduction

Secondary Targets: boys & older women/adults:

- "Introducing the vaccination of boys and older females should be carefully managed until the global supply situation is fully unconstrained"

2022, 97, 645–672 No 50

World Health Organization
Organisation mondiale de la Santé

Weekly epidemiological record
Relevé épidémiologique hebdomadaire

16 DECEMBER 2022, 97th YEAR / 16 DÉCEMBRE 2022, 97e ANNÉE
No 50, 2022, 97, 645–672
http://www.who.int/wer

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Human papillomavirus vaccines: WHO position paper (2022 update)

Introduction

In accordance with its mandate to provide normative guidance to Member States on health policy matters, WHO issues a series of regularly updated position papers[1] on vaccines and combinations of vaccines against diseases that have an international public health impact. These papers are concerned primarily with the use of vaccines in large-scale vaccination programmes.

The vaccine position papers are drafted by the WHO SAGE Secretariat; they summarize essential background information on diseases and vaccines and conclude with the current WHO position on the use of the vaccines worldwide. Before finalization, the position papers are reviewed by a large group of external subject-matter experts and end-users. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) and the evidence-to-recommendation tables are published alongside the position paper. The methods followed by SAGE[2] and the processes[3] for preparation of vaccine position papers are described on the WHO website. The position papers are intended for use by national public health officials and managers of immunization programmes. They may also be of interest to vaccine advisory groups, international funding agencies, health professionals,

Vaccins contre les papillomavirus humains: note de synthèse de l'OMS (mise à jour de 2022)

Introduction

Conformément à son mandat, qui prévoit qu'elle fournisse aux États Membres des orientations à caractère normatif en matière de politique sanitaire, l'OMS publie une série de notes de synthèse[1] régulièrement mises à jour sur les vaccins et les associations vaccinales contre les maladies ayant une incidence sur la santé publique internationale. Ces notes portent principalement sur l'utilisation des vaccins dans le cadre de programmes de vaccination à grande échelle.

Les notes de synthèse sur les vaccins sont rédigées par le secrétariat du SAGE de l'OMS; elles résument les informations essentielles sur les maladies et les vaccins associés et présentent en conclusion la position actuelle de l'OMS concernant l'utilisation de ces vaccins à l'échelle mondiale. Avant leur mise en forme définitive, elles sont examinées par un large groupe d'experts externes et d'utilisateurs finals. Les résultats de l'évaluation GRADE (Grading of Recommendations Assessment, Development and Evaluation) et les tableaux des données à l'appui des recommandations sont publiés en même temps que la note de synthèse. Les méthodes employées par le SAGE[2] et la procédure suivie[3] pour élaborer les notes de synthèse sur les vaccins sont décrites sur le site Web de l'OMS. Les notes de synthèse sont destinées aux responsables nationaux de la santé publique et aux administrateurs des programmes de vaccination, mais elles peuvent également présenter un intérêt pour les

[1] WHO vaccine position papers. Geneva: World Health Organization (www.who.int/teams/immunization-vaccines-and-biologicals/policies/position-papers, accessed August 2022).
[2] Guidance for the development of evidence-based vaccine-related recommendations. Geneva: World Health Organization; 2017 (www.who.int/publications/m/item/guidance-for-the-development-of-evidence-based-vaccine-related-recommendations, accessed August 2022).
[3] WHO position paper process. Geneva: World Health Organization; 2020 (www.who.int/publications/m/item/who-position-paper-process, accessed August 2022).

[1] WHO vaccine position papers. Genève: Organisation mondiale de la santé (www.who.int/teams/immunization-vaccines-and-biologicals/policies/position-papers, consulté en août 2022).
[2] Guidance for the development of evidence-based vaccine-related recommendations. Genève: Organisation mondiale de la santé; 2017 (www.who.int/publications/m/item/guidance-for-the-development-of-evidence-based-vaccine-related-recommendations, consulté en août 2022).
[3] WHO position paper process. Genève: Organisation mondiale de la santé; 2020 (www.who.int/publications/m/item/who-position-paper-process, consulté en août 2022).

645

* *Contains off label recommendations*

Source: https://www.who.int/publications/i/item/who-wer9750-645-672

OPTIMIZED SCHDEULES /1-DOSE USE WORLDWIDE

Impact of WHO optimized schedule recommendations (*May 2024*)
1-dose HPV vaccine schedule adopted in 48 countries (34%/

1-dose schedule

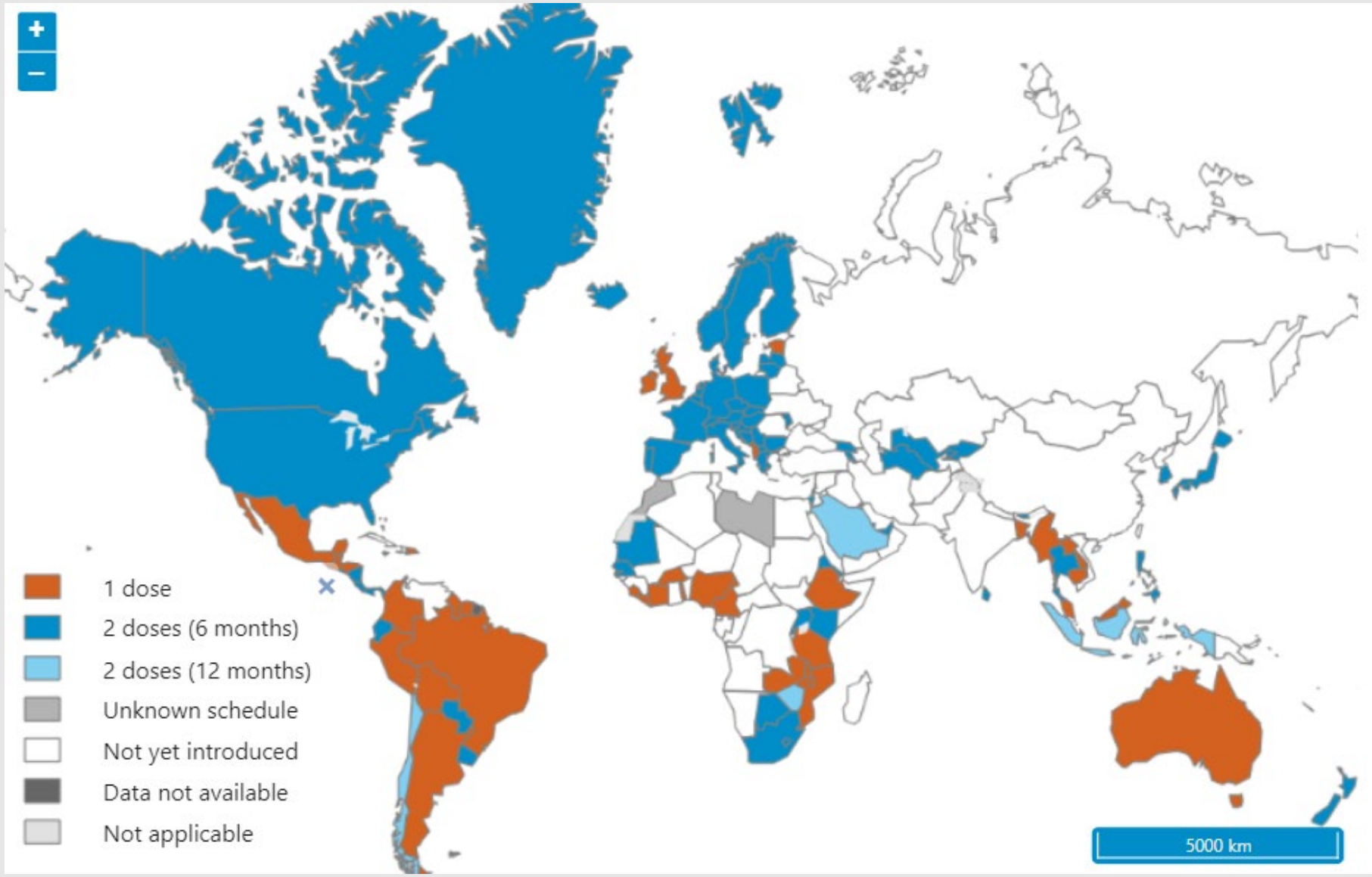
- 34% of all HPV countries
- HIC, UMIC & LMICs
- Many countries adopted 1-dose up to 20 years of age (some to 25 yr)

Effect on eligibility

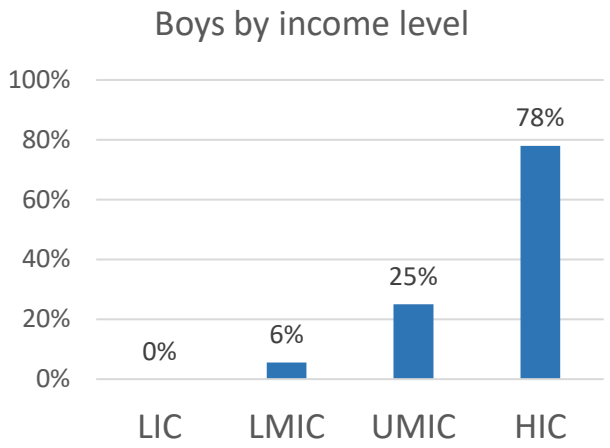
- Several countries widened age ranges for catch-up or included boys

2-dose schedule

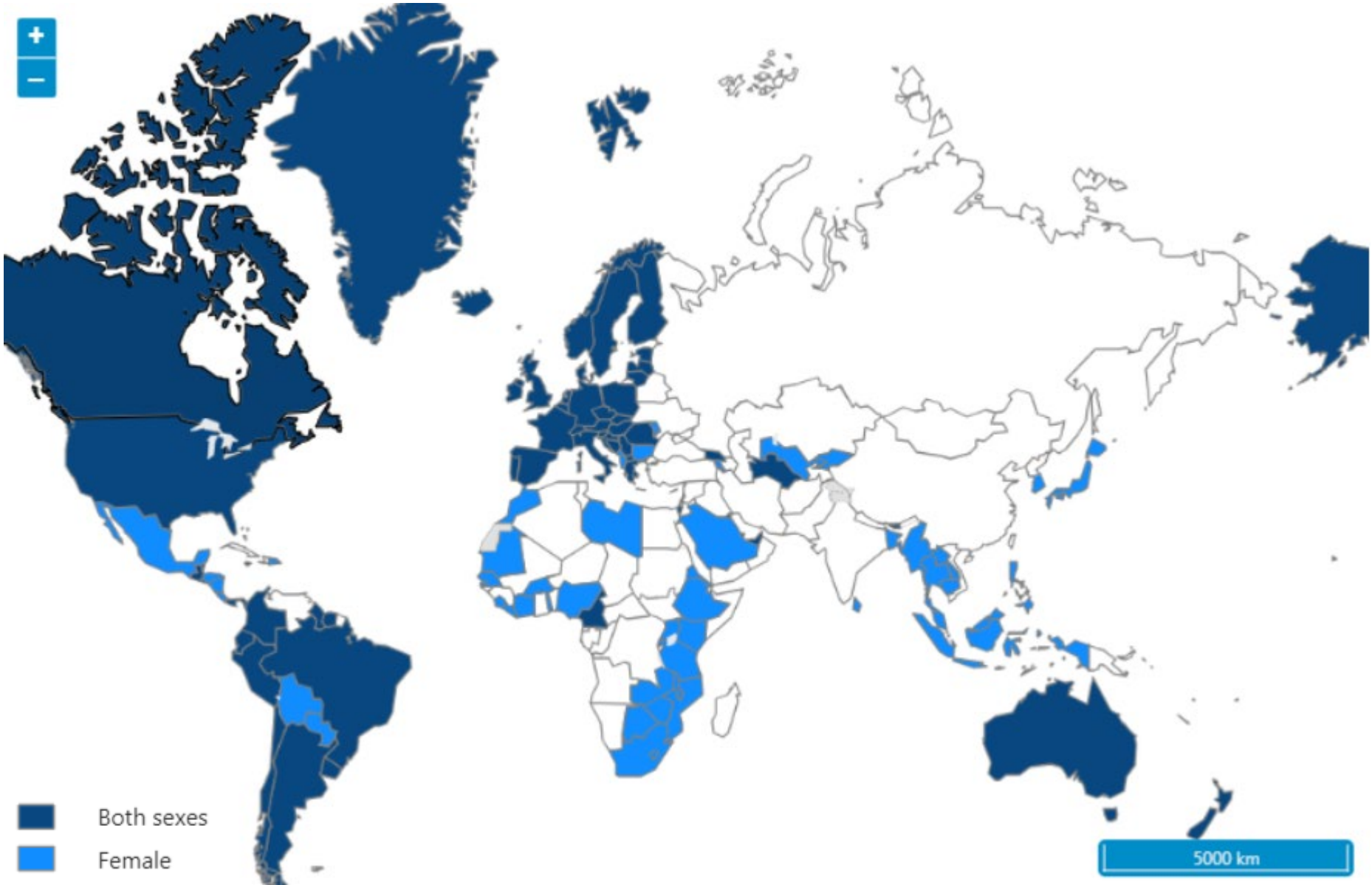
- many HICs switched to 2-dose schedule in 15 years & older



Gender neutral HPV programmes expanded



HPV Sex	No. of countries
Female	68
Both sexes	74



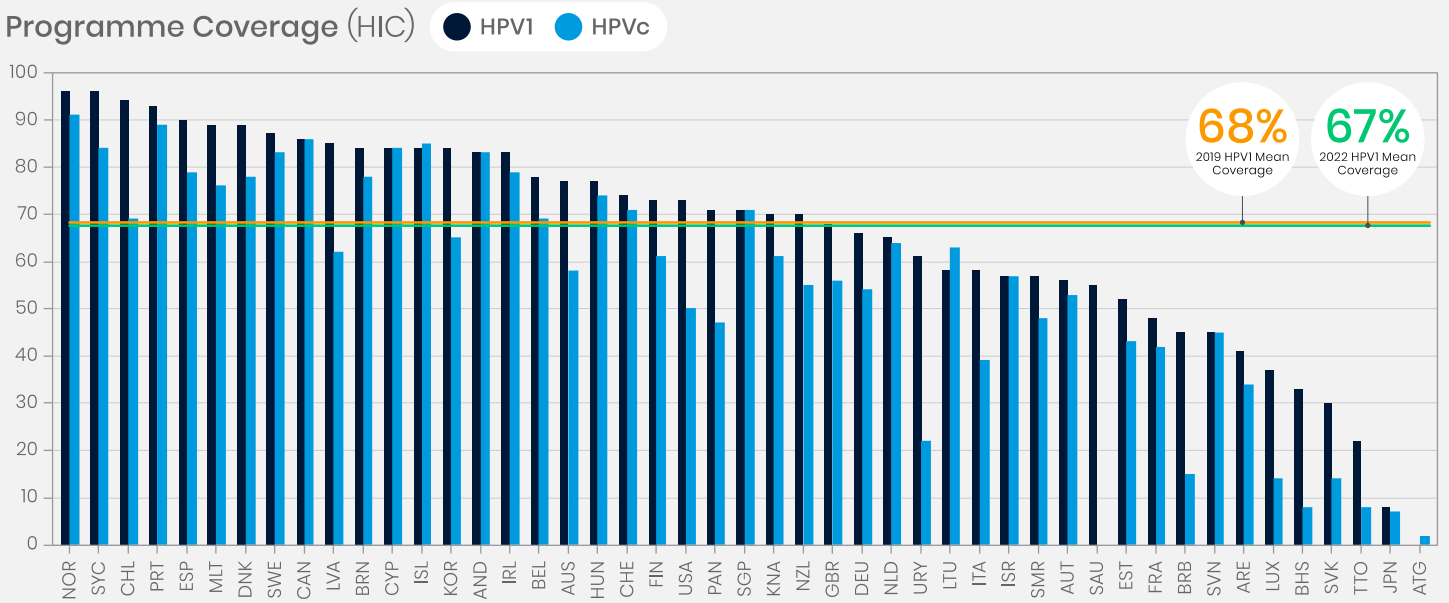
HPV vaccine coverage is still low in L&MIC compared with 2019

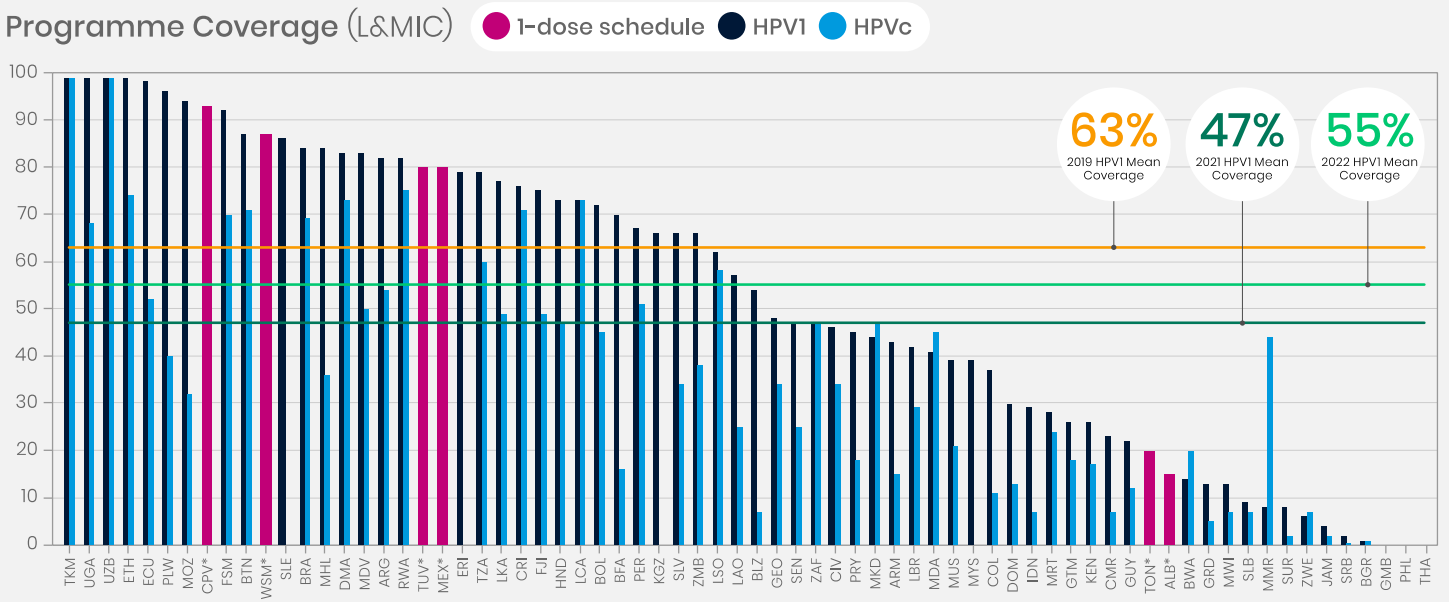
While average coverage improved in L&MIC in 2022, it is still below 2019 levels. HIC continue to show stable programme performance

- In L&MIC mean first coverage at 55%, while recovered from 47% in 2021, is still lower than that in 2019 (63%).
- Meanwhile, HIC continue to show stable coverage (mean 67%) comparable to pre-pandemic levels.

Urgent action is required to further improve HPV vaccine coverage and catching up missed girls to raise levels of protection

By the end of 2022, 6 countries reported to have switched to a single dose schedule.





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What drives vaccine uptake?

Behavioural and social drivers (BeSD) of HPV vaccination

- **Tools have been developed with global expert and partner inputs**
- Harmonized with existing validated BeSD survey and interview guides

Next steps:

- Field-testing in multiple languages in diverse settings (Tanzania ✓)
- Data collection for validation
- Finalization and dissemination
- Supporting guidance, templates, and frameworks will be available

BeSD of HPV vaccination: Draft constructs

Thinking and feeling	Motivation	Social processes	Practical issues (Health facility)	Practical issues (School)
Perceived risk	Intention to get child vaccinated ✪	Social responsibility ▲	Preference on vaccination site ▲ (Specific to countries without HPV vax)	
Awareness ▲		Peer norms	Received recall	Received recall
Confidence in vaccine benefits ✪		Family norms ✪	Took child for vaccination	Ease of consent ▲
Confidence in vaccine safety		Religious leader norms	Know where to get vaccination ✪	
Information exposure ▲		Community leader norms	Vaccine availability	
Specific concerns ▲		Teacher norms ▲ (School)	Ease of access	
First advisor ▲		Health worker recommendation	Affordability of vaccination ✪	
Trusted advisor ▲		Decision autonomy ▲	Affordability of indirect costs ✪	
Confidence in health workers		Child's role in decision ▲	Reasons for low ease of access	Reasons for low ease of access
		Mother's travel autonomy (Health facility)	Service satisfaction	
			Service quality	Service quality

✪ Priority from BeSD of childhood vaccination
▲ New construct for BeSD (not in published version of BeSD tools)

Existing tools on BeSD and WHO Position Paper: https://iris.who.int/handle/10665/354459

Catch-up strategies (up to May 2024)

- 36% of countries (51/141) reported active catch-up strategies in 2024. 65% were both in females and males (33/51)

	Countries w/ Female CUp	Max age Female CUp 15-19 yrs	Max age Female CUp 20+ yrs
High income	53% (31/59)	58% (18/31)	42% (13/31)
LMIC	24% (20/82)	90% (18/20)	10% (2/20)
Upper middle income	34% (14/41)	86% (12/14)	14% (2/14)
Lower middle income	20% (6/30)	100% (6/6)	0% (0/6)
Low income	0% (0/11)	-	-
TOTAL	**36%** (51/141)	71% (36/51)	29% (15/51)

PRELIMINARY RESULTS. Does not include special indications such as MSM or HIV in older populations

Prioritization Framework for Secondary Target Populations

If feasible, resources allow and does not divert resources from secondary cervical cancer prevention

Consider extending the HPV programme with the following secondary target options *(in order of efficiency & impact)*

1. Girls 15 – 20 yr (*one time catch up*)
2. Women 21 - 25 yr (*one time catch up*)
3. Boys 9 yr (*Routine cohort)*
4. Boys 10 - 20 yr *(one time catch up)*
5. Women 26 - 30 yr *(one time catch up)*

Short term investment (1-5 yr)

Long term investment (100 yr)

Considerations when coverage in Girls Routine is low (eg 40%)

1. Invest first in increasing coverage among primary target Girls & catch-up older girls
2. Boys 9 yr (*Routine cohort) and/or catch up* 10 - 20 yr

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Thank you

[WHO HPV Vaccine Introduction & Country Coverage Dashboard]