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VIEW-hub Report: Global Vaccine Introduction and Implementation

www.VIEW-hub.org

Johns Hopkins Bloomberg School of Public Health

International Vaccine Access Center (IVAC)

Contact: Kirthini Muralidharan (kmuralidharan@jhu.edu)



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The appendix includes a description of VIEW-hub, support and funding for VIEW-hub, and how to cite VIEW-hub as a source

VACCINE INTRODUCTION DASHBOARD

The following section provides contextual historic information about Hib vaccine, PCV, Rotavirus vaccine and IPV introduction in low-, middle-, and high-income countries, as well as Gavi-supported countries. It also provides a summary snapshot of the cumulative number of countries that have introduced each vaccine to date (globally and for Gavi countries only).

Year of first vaccine introduction

Vaccine	High-income	Middle-income	Low-income	Gavi-Supported
Hib	1989 (Iceland)	1994 (2 countries)	1997 (Gambia)	2001 (2 countries)
PCV	2000 (US)	2008 (5 countries)	2009 (Rwanda)	2009 (2 countries)
Rotavirus	2006 (3 countries)	2006 (5 countries)	2012 (Rwanda)	2008 (Bolivia)
IPV	1955 (2 countries)	1959 (Hungary)	2014 (Nepal)	2014 (Nepal)
HPV	2006 (4 countries)	2009 (2 countries)	2011 (Rwanda)	2011 (Rwanda)
Typhoid			2021 (2 countries)	2019 (Pakistan)

Total number of countries that have introduced each vaccine, by program type

Vaccine	Global Introductions (194 countries)			Total
	Universal	Special Risk Populations*	Subnational	
Hib	192	0	1	193
PCV	140	3	5	148
Rotavirus	111	0	4	114
IPV**	190	0	4	194
HPV	107	0	6	113
Typhoid	3	0	1	4

Vaccine	Gavi Introductions (73 countries)			Total
	Universal	Special Risk Populations*	Subnational	
Hib	73	0	0	73
PCV	57	0	3	60
Rotavirus	52	0	1	53
IPV**	70	0	3	71
HPV	25	0	5	30
Typhoid	2	0	1	3

*This program type targets special populations at high risk and will hereforth be referred to as "risk programs". Note: The definition of high-risk populations may vary by country.

**IPV introduction defined as the inclusion of at least one dose of IPV into the child immunization schedule.

EXECUTIVE SUMMARY

The VIEW-hub Global Vaccine Introduction and Implementation report displays data and figures on the global introduction status of nine vaccines: Haemophilus influenzae type b (Hib) containing vaccine, pneumococcal conjugate vaccine (PCV), rotavirus vaccine, inactivated polio vaccine (IPV), typhoid conjugate vaccine (TCV), second dose of a measles-containing vaccine (MCV2), measles and rubella containing vaccines (MR), human papillomavirus vaccine (HPV) and COVID-19 vaccine. This report contains enhanced content and figures generated from data available from VIEW-hub (www.VIEW-hub.org), which is an interactive platform developed and maintained by IVAC. Support for antigens other than SARS-CoV-2 is provided by Gavi, The Vaccine Alliance, the Bill & Melinda Gates Foundation, the World Health Organization and the ROTA Council; support for COVID-19 vaccine is provided by the World Health Organization, the Coalition for Epidemic Preparedness Innovations and the Asian Development Bank.

The VIEW-hub report contains summaries for all vaccines except COVID-19 vaccine, both globally and subset for the 73 Gavi countries. The summaries include the number of countries that have introduced each vaccine or plan to in the future, historical trends in the rate of global vaccine introduction, vaccine coverage and access, current product and dosing schedule (the latter for PCV, rotavirus vaccine and IPV). Additions to the VIEW-hub Report in the last year include TCV (April 2021), MCV2 and MR (both December 2021). Additions to the View-hub website also include COVID-19 vaccine (July 2021).

BACKGROUND

Through the VIEW-hub interactive data visualization tool (www.VIEW-hub.org), users can instantly visualize data on vaccine introductions, product usage, dosing schedules, access, coverage, impact studies, and more for nine vaccines. The data on www.VIEW-hub.org are continuously updated as information is received to permit real-time reporting.

Custom queries and maps, exportable data and graphics, country-specific dashboards and a map gallery are just some of the interactive features users can access. Tracking vaccine introduction progress and the collation of a wide spectrum of vaccine use data all in one location facilitates users in strategizing ways to accelerate and optimize vaccine implementation.

In 2016, VIEW-hub replaced IVAC's previous Vaccine Information Management System (VIMS) developed in 2008, which was a web-based database of key information related to vaccine introduction. VIEW-hub expanded the number of vaccines, scope and functionality to serve the evolving needs of global vaccine stakeholders and decision makers. Quarterly VIEW-hub Reports replaced the quarterly VIMS Global Vaccine Introduction Reports after the launch of VIEW-hub.

METHODS

This report has been prepared using data and maps generated in VIEW-hub, a data visualization tool developed and maintained by the International Vaccine Access Center at the Johns Hopkins Bloomberg School of Public Health for use by IVAC and its affiliated partners and projects. Information in VIEW-hub was gathered from internationally recognized sources, such as the World Health Organization (WHO), UNICEF, Gavi, vaccine manufacturers, ministries of health, and news media.

Current Introduction Statuses for Hib, Pneumococcal Conjugate, Rotavirus, Inactivated Polio, Typhoid Conjugate, Second dose Measles containing, Measles-Rubella and Human Pappillomavirus Vaccines

- Data on historical years of vaccine introduction are gathered from the WHO. Information on current introduction status are gathered from a variety of sources, such as WHO, UNICEF, Gavi, vaccine manufacturers, ministries of health, and news media. Forecasted introduction dates are from WHO and Gavi's Strategic Demand Forecast v12. For more information on sources, see the full data dictionary within VIEW-hub (www.VIEW-hub.org) or email Kirthini Muralidharan at kmuralidharan@jhu.edu.

Coverage Estimates

- Vaccine coverage is calculated as the number of surviving infants globally covered by the vaccine in countries and subnational regions within countries that have introduced the vaccine. In the absence of coverage data for the vaccine, DTP3 coverage is used as a proxy,

Access Estimates

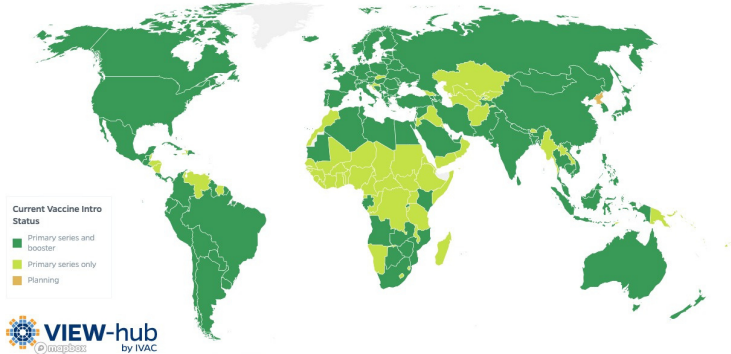
- Vaccine access is calculated by the number of surviving infants globally that live in countries or subnational regions within countries that have introduced the vaccine.

Vaccine Introduction by Income Level

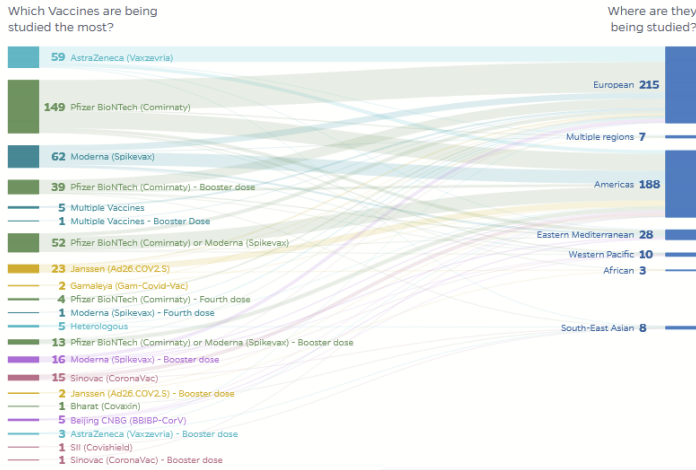
- Countries were classified using 2021 World Bank income classifications (2020 GNI data).
Year of introduction
- Forecasted introduction was determined through WHO reports, news media, and Gavi's Strategic Demand Forecast v12.

Projected introduction dates for Gavi countries are taken from the most recently available Gavi Strategic Demand Forecast and WHO sources. For non-Gavi countries, WHO and a variety of other sources are used. Information on a particular country's Gavi application status or projected introduction date may be sensitive and should not be used for public circulation without prior consent from VIEW-hub personnel.

COVID-19 VACCINES



VIEW-hub
by IVAC



WHO Emergency Authorized	
ASTRAZENECA/SK BIOSCIENCE CO. LTD, REPUBLIC OF KOREA	
Product Name	Manufactured in
CHAdOx1-S [recombinant]	Republic of Korea
Type of Vaccine	# of Doses
Adenovirus-based	2
Efficacy	
70%	
Cold Chain Requirements	
Stored between 2 degrees Celsius and 8 degrees Celsius for at least 6 months	
Approval Status	
Emergency/conditional use in 5 countries	

WHO Emergency Authorized	
BIONTECH MANUFACTURING GMBH	
Product Name	Manufactured in
COMIRNATY/BNT1 6202/Pfizer-BioNTech COVID-19 vaccine	Germany
Type of Vaccine	# of Doses
mRNA	2
Efficacy	
95%	
Cold Chain Requirements	
Refrigerated between 2 to 8 degrees Celsius for up to 5 days after opening. Stored between -80 to -60 degrees Celsius until expiration date.	
Approval Status	
Emergency/conditional use authorization in 105 countries.	

WHO Emergency Authorized	
SINOVAC LIFE SCIENCES CO., LTD	
Product Name	Manufactured in
CoronaVac	China
Type of Vaccine	# of Doses
Inactivated SARS-CoV-2 virus	2
Efficacy	
50%	
Cold Chain Requirements	
Stored between 2 degrees Celsius and 8 degrees Celsius	
Approval Status	
Emergency/conditional use in 26 countries	

WHO Emergency Authorized	
BHARAT BIOTECH	
Product Name	Manufactured in
Covaxin	India
Type of Vaccine	# of Doses
Inactivated SARS-CoV-2 virus	2
Efficacy	
78%	
Cold Chain Requirements	
Stored between 2 degrees Celsius and 8 degrees Celsius for up to 6 months	
Approval Status	
Emergency authorization in 16 countries.	

WHO Emergency Authorized	
SERUM INSTITUTE OF INDIA	
Product Name	Manufactured in
COVISHIELD (CHAdOx1-S [recombinant])	India
Type of Vaccine	# of Doses
Adenovirus-based	2
Efficacy	
70%	
Cold Chain Requirements	
No dilution or reconstitution is required. Store in refrigerator (2 to 8°C). Shelf life is 9 months. Dosage: Each vial contains 0.5 ml doses	
Approval Status	
Emergency/conditional use in 18 countries. List of countries can be accessed here	

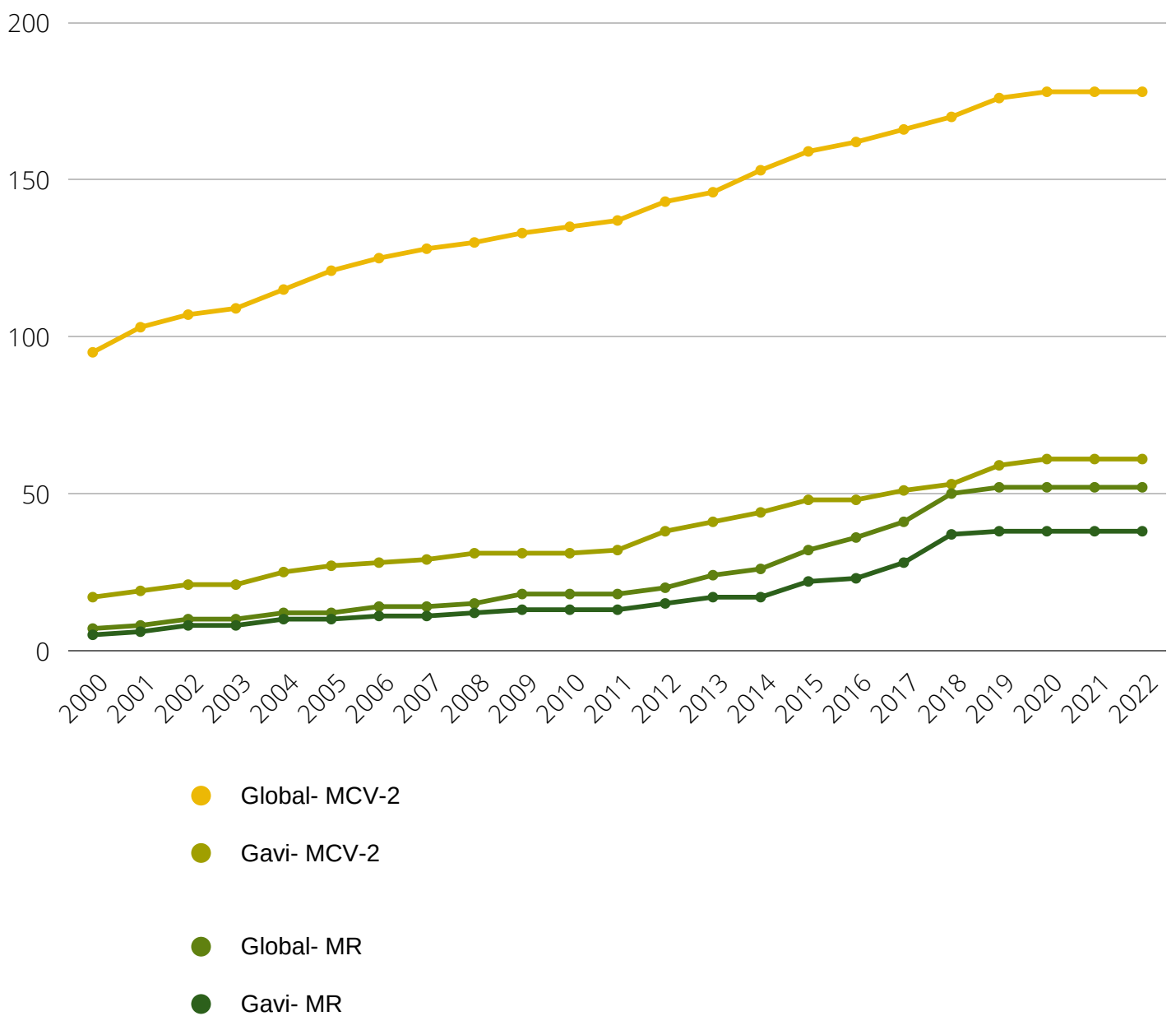
WHO Emergency Authorized	
JANSSEN-CILAG INTERNATIONAL NV	
Product Name	Manufactured in
Janssen COVID-19 vaccine/Ad26.COV2.S [recombinant]	Belgium
Type of Vaccine	# of Doses
Adenovirus-based	1
Efficacy	
66%	
Cold Chain Requirements	
Two years stored frozen at -25°C to -15°C (-13°F to 5°F), or the shelf life of the vaccine of six to 4.5 months stored between 2° C and 8° C (36°F to 46°F)	
Approval Status	
Emergency/conditional use in 79 countries.	

VIEW-hub now includes information on COVID-19 vaccines. Maps can be filtered by COVAX status, income strata, and region to show how COVID-19 vaccine rollout is progressing around the world. The module also includes information on which series of vaccines (primary and/or booster) are being used around the world and which sub-populations are being targeted for vaccination. For easy reference, the different COVID-19 vaccines are also described, including their approval status, cold chain requirements, and country of manufacture.

Studies on COVID-19 Vaccine efficacy, effectiveness and impact are also being tracked and summarized. Explore where studies are taking place, what vaccines, populations and outcomes are being studied and more!

MEASLES VACCINE

Measles Vaccine Introduction by Year



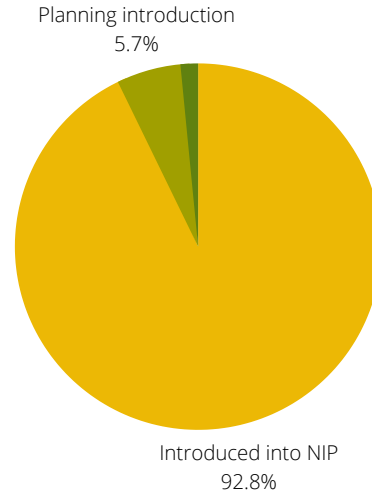
MCV-2 Vaccine Introduction Status

As of July 2022, globally, 180 countries have introduced MCV-2 into their national immunization program. Four countries have announced plans to add MCV-2 to their national immunization program. Three countries are yet to make a decision regarding introduction.

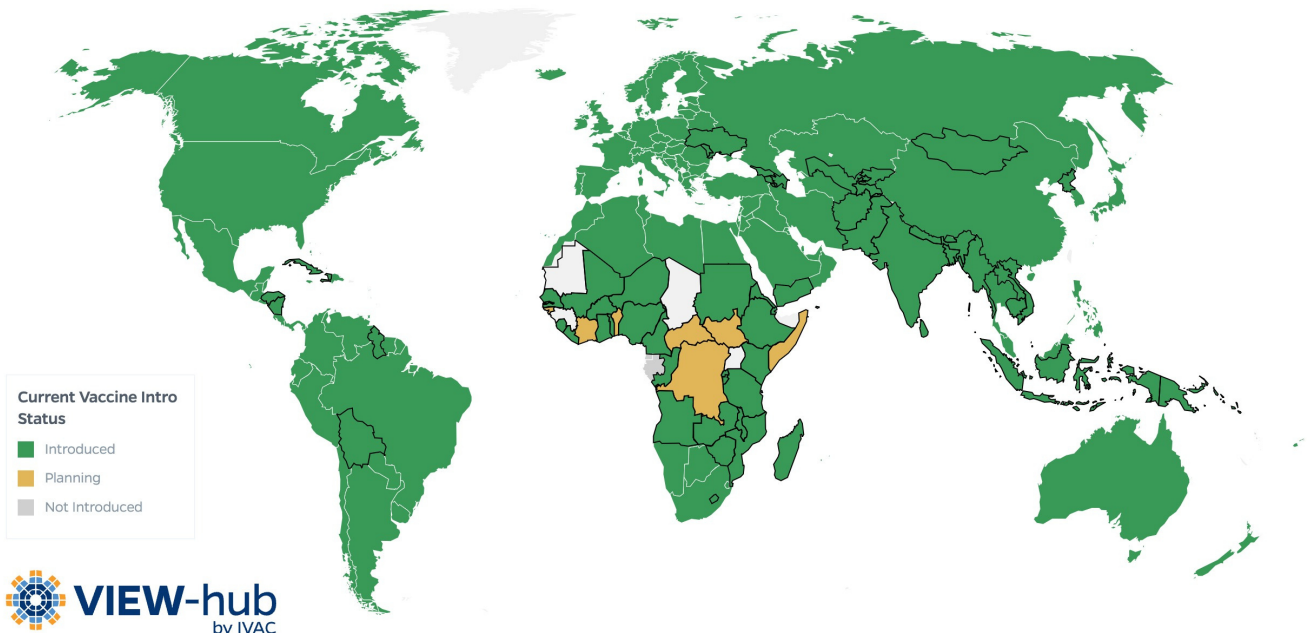
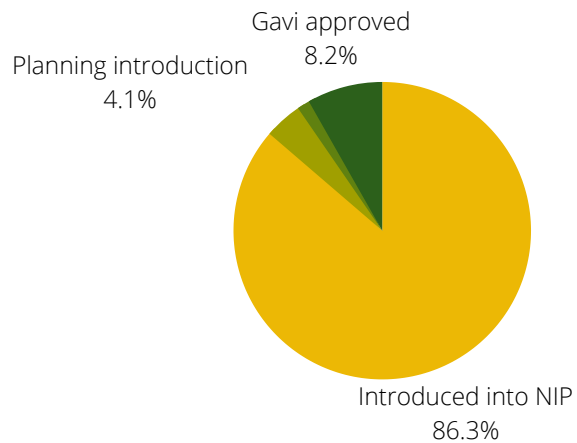
63 Gavi countries have introduced MCV-2 into their national immunization program, one of which has introduced subnationally. 30 countries have been approved, with or without clarification, for Gavi support to introduce. Three have announced plans to add MCV-2 to their national immunization program. One has yet to make a decision regarding introduction.

A map of the countries that have introduced MCV-2 is below.

Global



Gavi



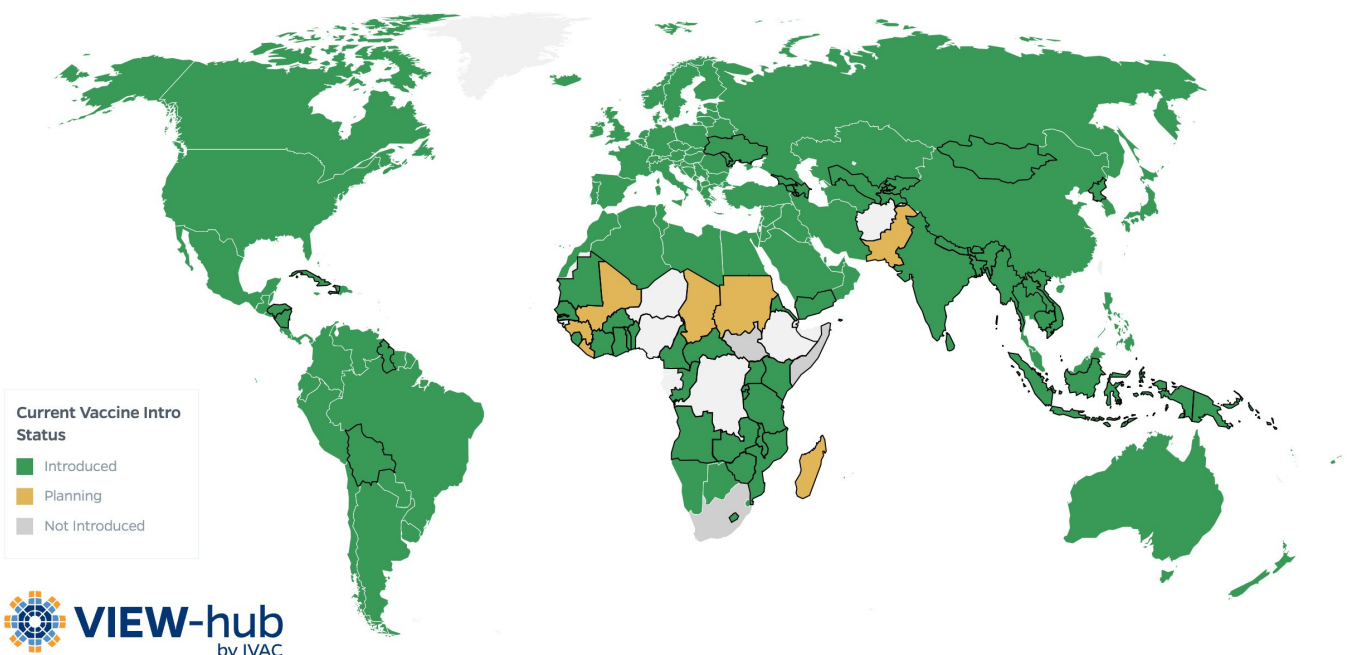
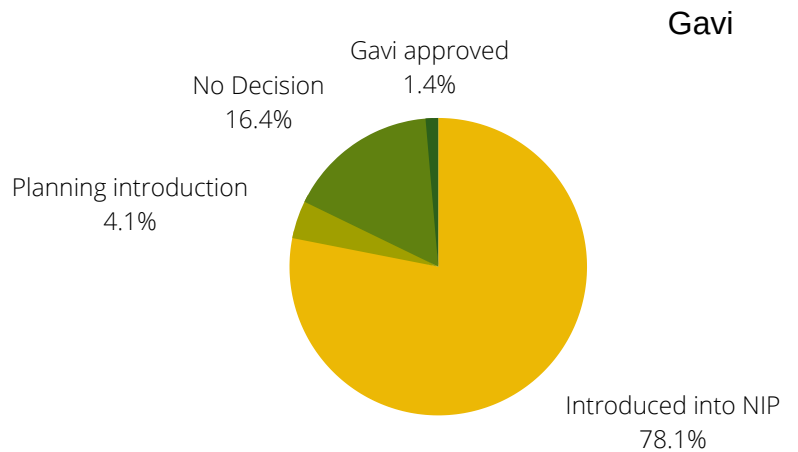
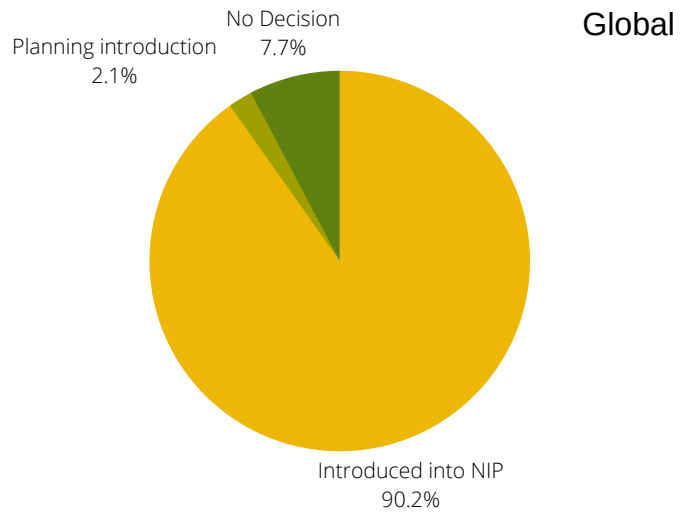
The countries outlined in black indicate countries approved for Gavi support.

Measles Rubella Vaccine Introduction Status

As of July 2022, globally, 175 countries have introduced MR into their national immunization program. Six countries have announced plans to add MR to their national immunization program. Fifteen countries are yet to make a decision regarding introduction.

57 Gavi countries have introduced MR into their national immunization program. Five countries have been approved, with or without clarification, for Gavi support to introduce. Three have announced plans to add MR to their national immunization program. Twelve have yet to make a decision regarding introduction.

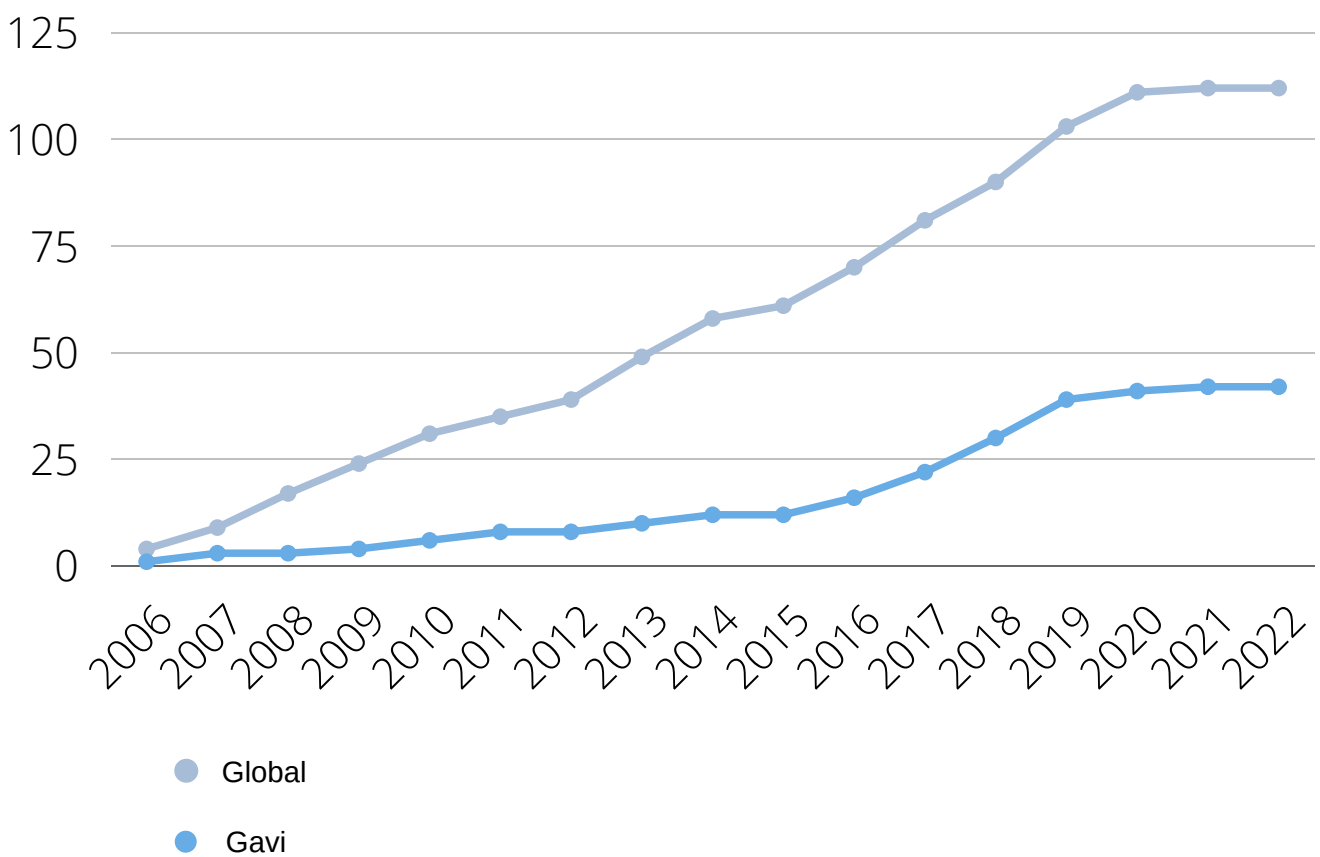
A map of the countries that have introduced MR is below.



The countries outlined in black indicate countries approved for Gavi support.

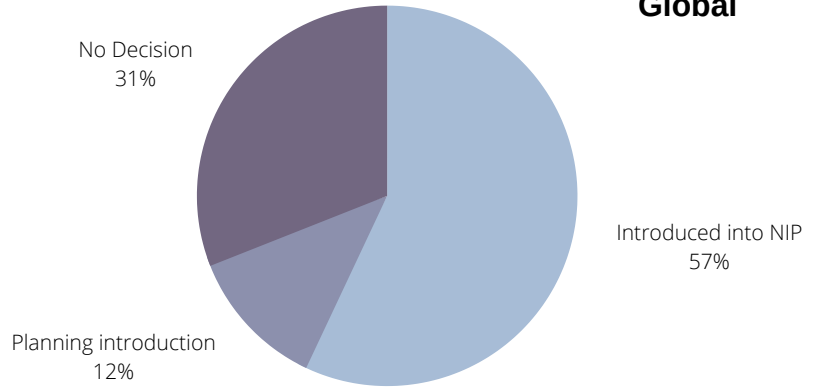
HUMAN PAPILLOMAVIRUS VACCINE

HPV Introduction by Year

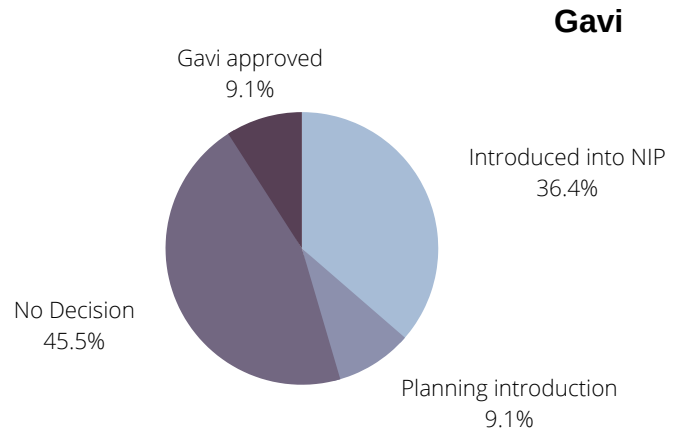


HPV Vaccine Introduction Status

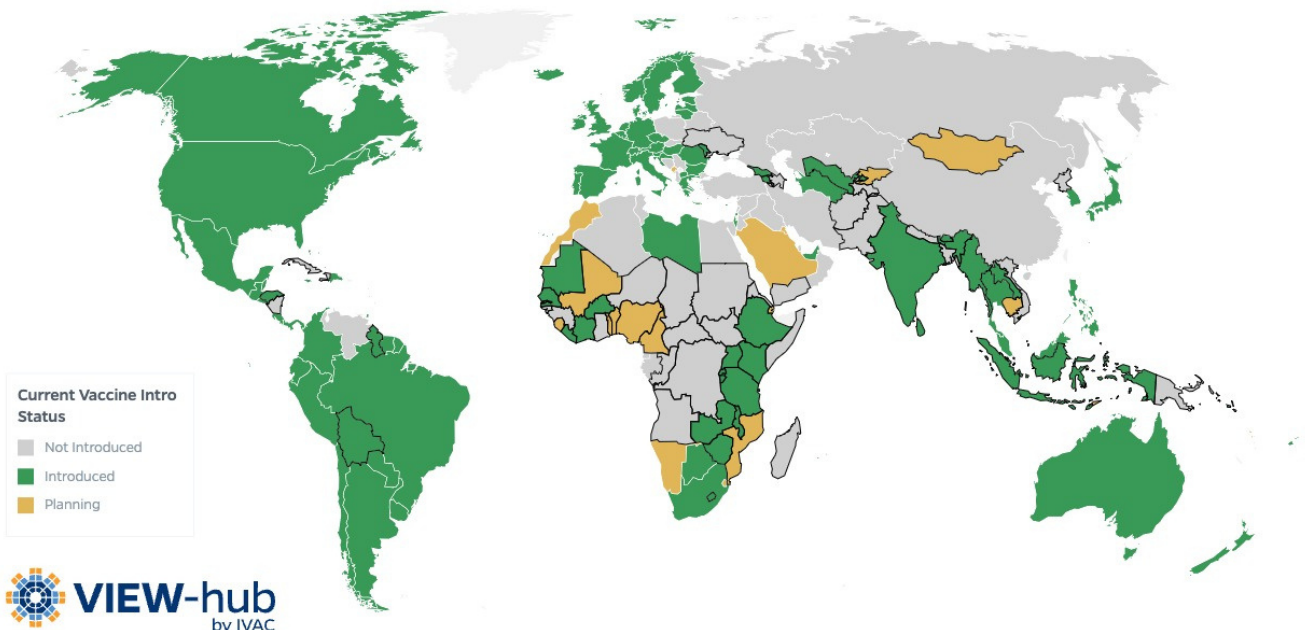
As of July 2022, globally, 113 countries have introduced HPV into their national immunization program; additionally, 27 countries have introduced demonstration projects. 24 countries have announced plans to add HPV to their national immunization program. 55 countries are yet to make a decision regarding introduction.



27 Gavi countries have introduced HPV into their national immunization program, four of which have introduced subnationally. 37 countries have been approved, with or without clarification, for Gavi support to introduce. Three have announced plans to add HPV to their national immunization program.

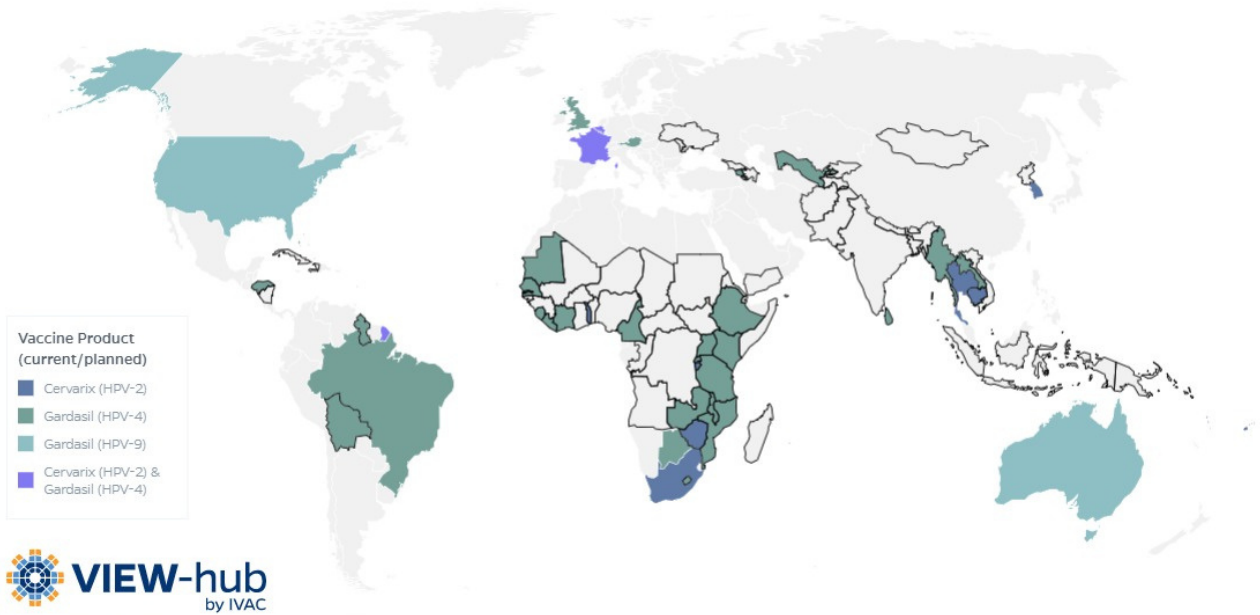


A map of the countries that have introduced HPV is below.

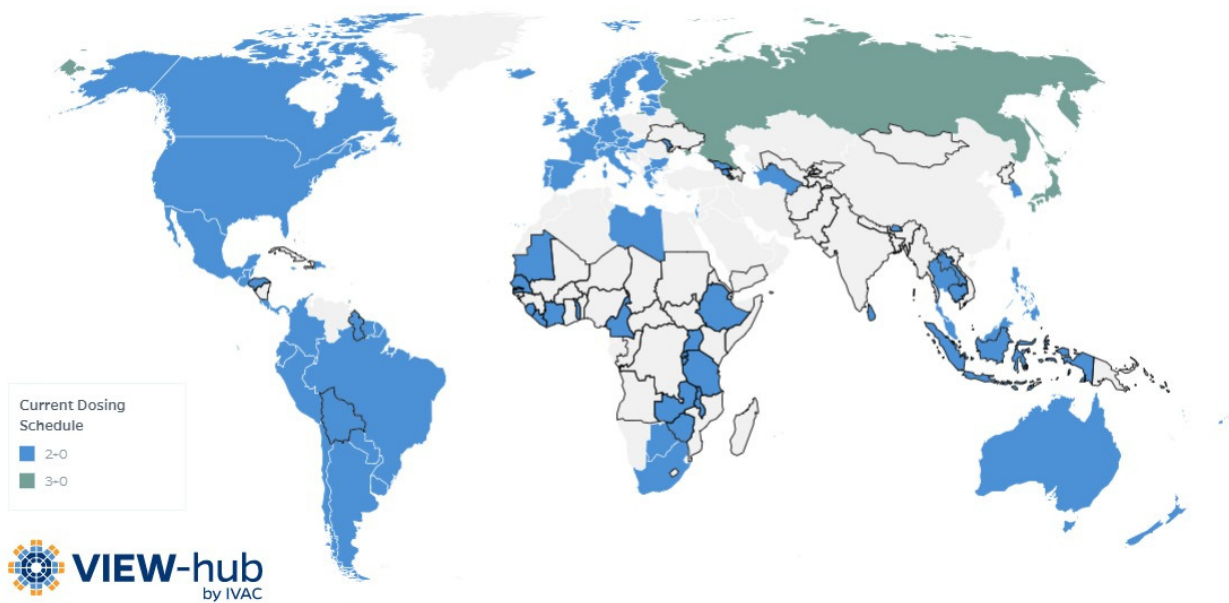


The countries outlined in black indicate countries approved for Gavi support.

HPV - Current Product



HPV - Current Dosing Schedule

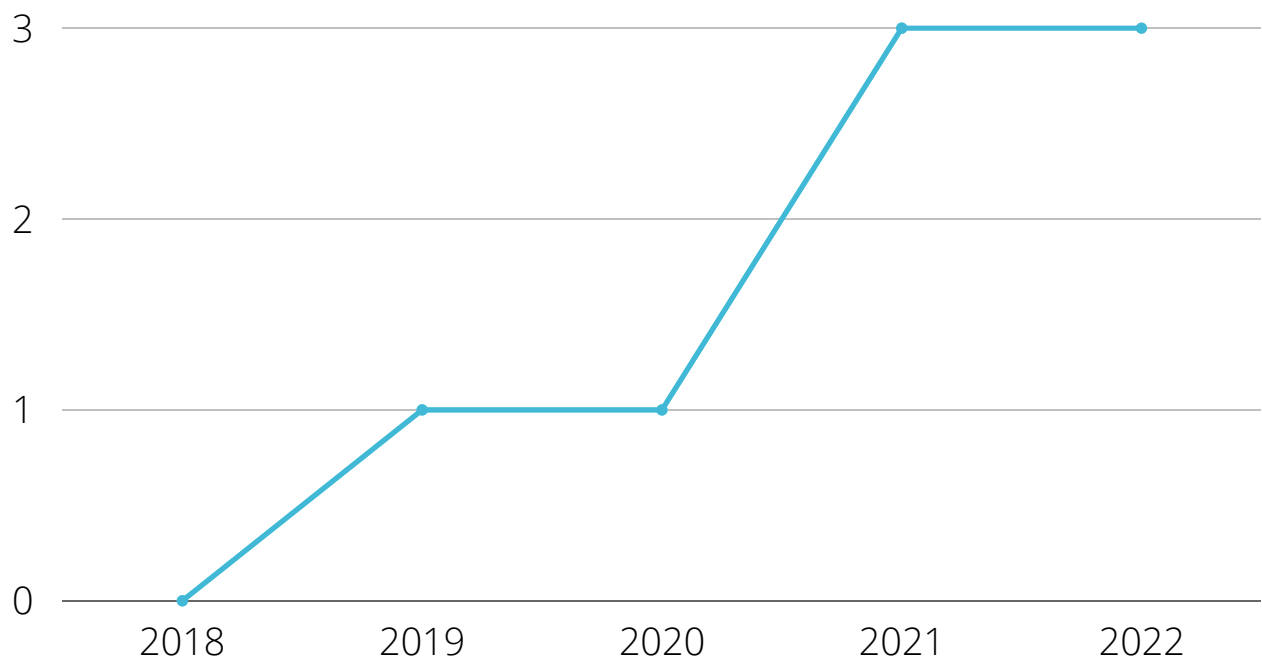


The countries outlined in black indicate countries approved for Gavi support.

[See the HPV page on VIEW-hub for more information](#)

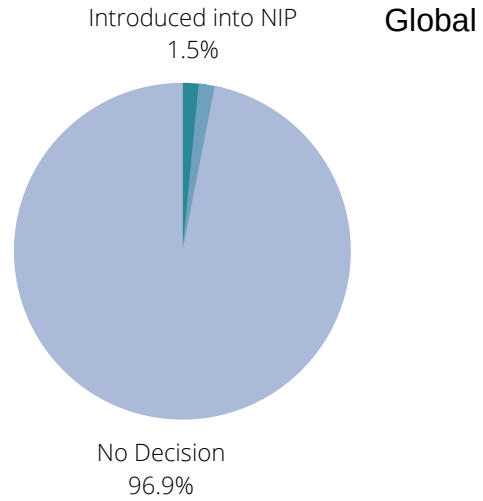
TYPHOID CONJUGATE VACCINE

Typhoid Conjugate Vaccine Introduction by Year

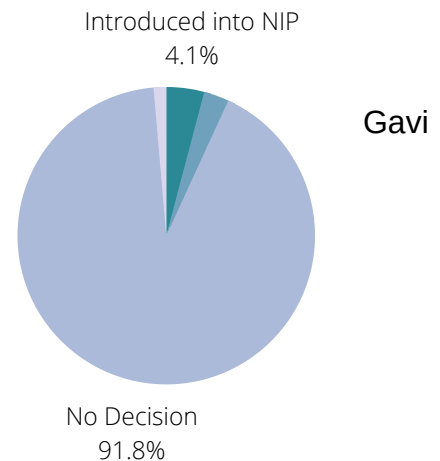


Typhoid Conjugate Vaccine Introduction Status

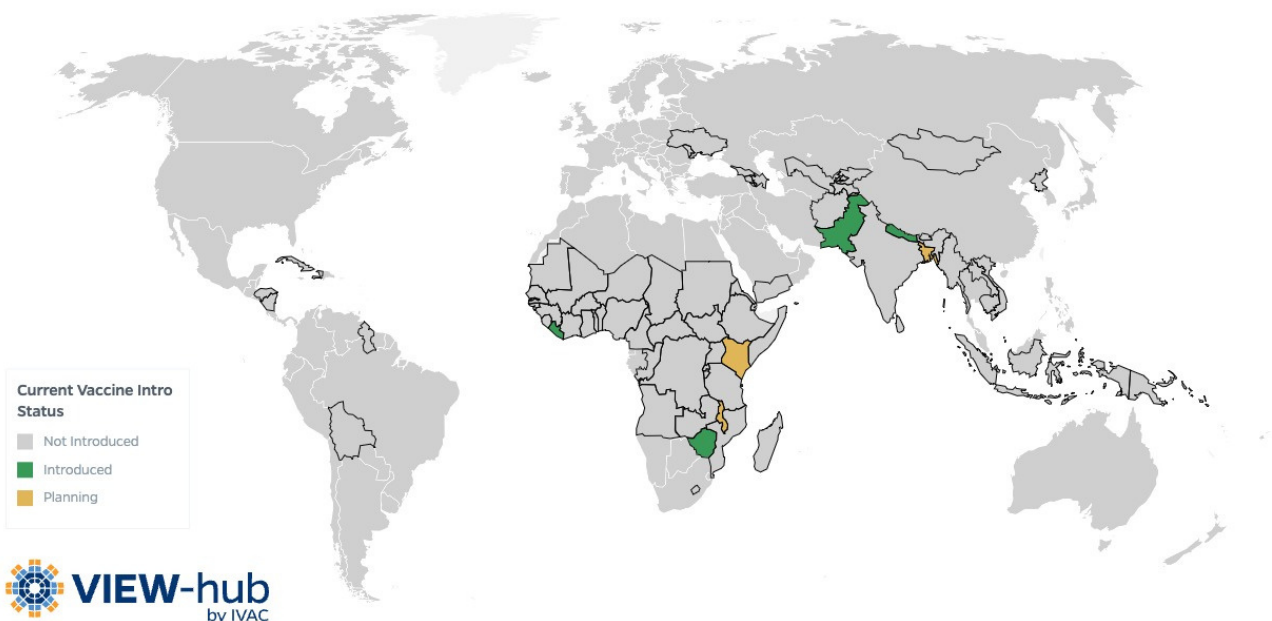
As of July 2022, globally, four countries have introduced typhoid conjugate vaccine into their national immunization program; Pakistan in a phased manner and Liberia, Zimbabwe, and Nepal universally. Two countries have announced plans to add TCV to their national immunization program. 187 countries are yet to make a decision regarding introduction.



Three Gavi countries have introduced TCV into their national immunization program, Pakistan has introduced subnationally. Five countries have been approved, with or without clarification, for Gavi support to introduce. One has announced plans to add TCV to their national immunization program. 64 have yet to make a decision regarding introduction.

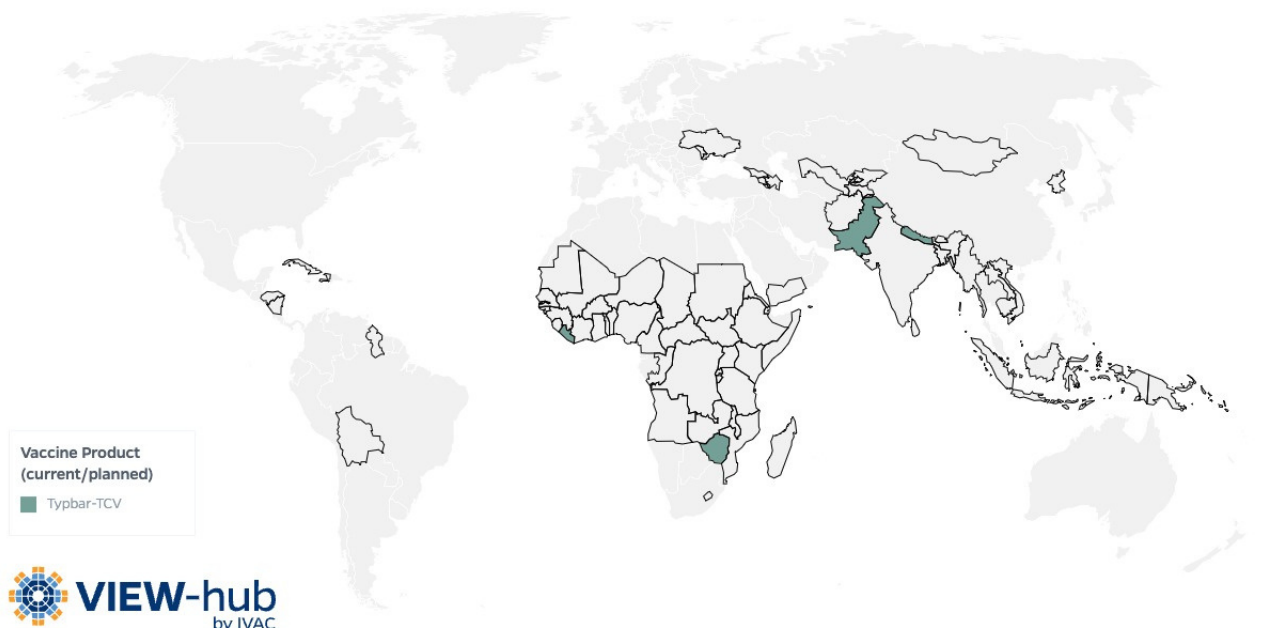


A map of the countries that have introduced TCV is below.

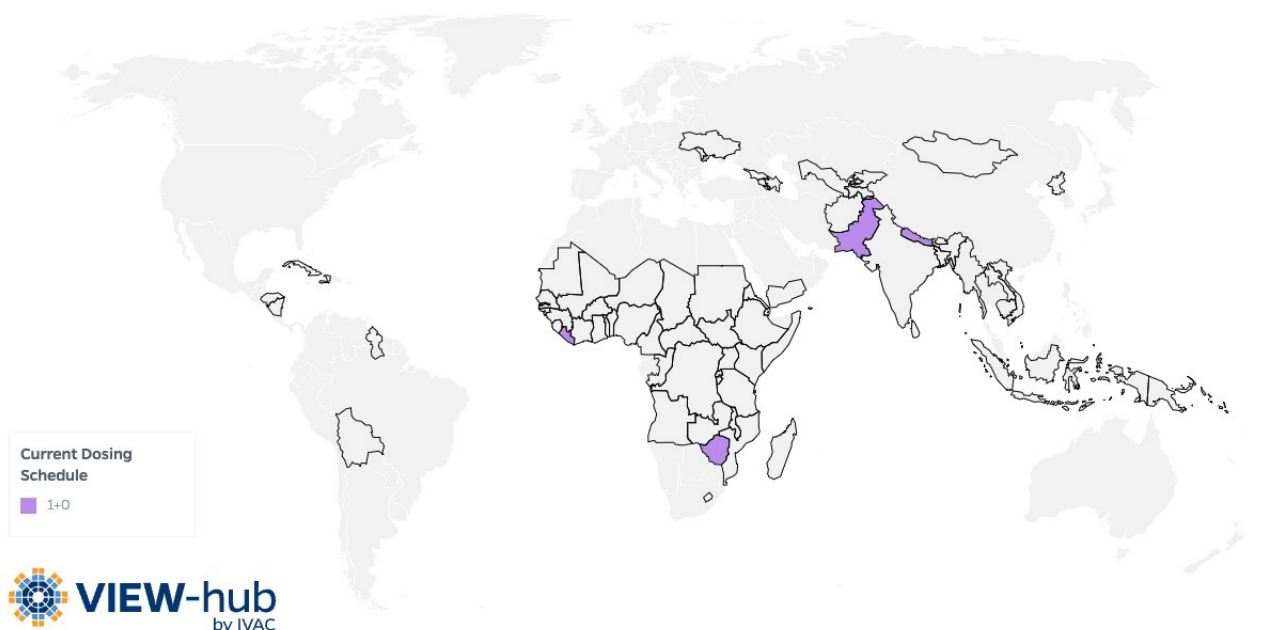


The countries outlined in black indicate countries approved for Gavi support.

TCV- Current Product



TCV - Current Dosing Schedule

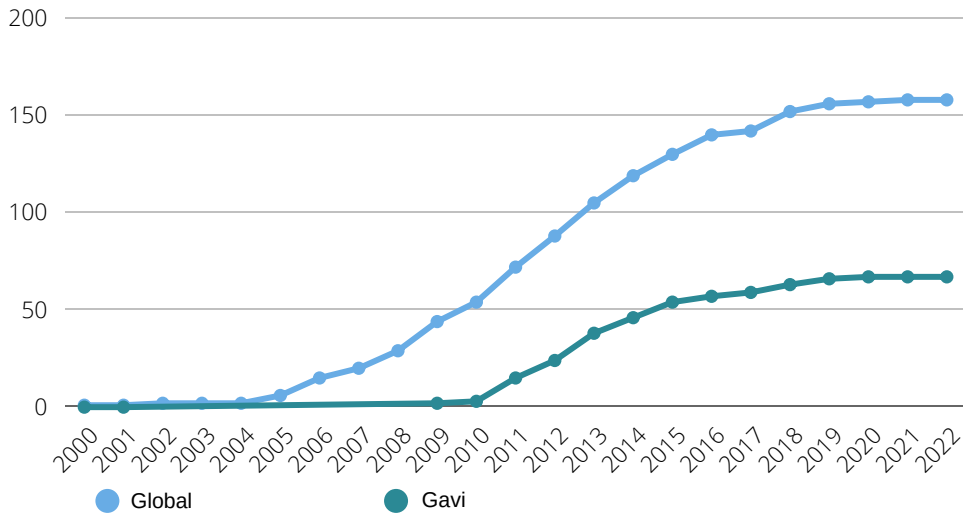


The countries outlined in black indicate countries approved for Gavi support.

[See the TCV page on VIEW-hub for more information](#)

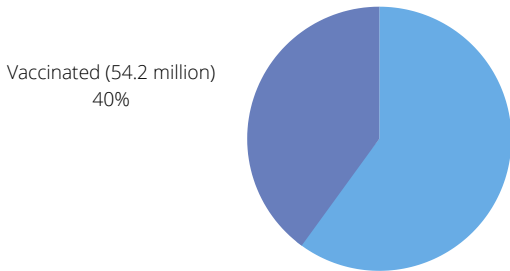
PNEUMOCOCCAL CONJUGATE VACCINE

PCV Introduction by Year

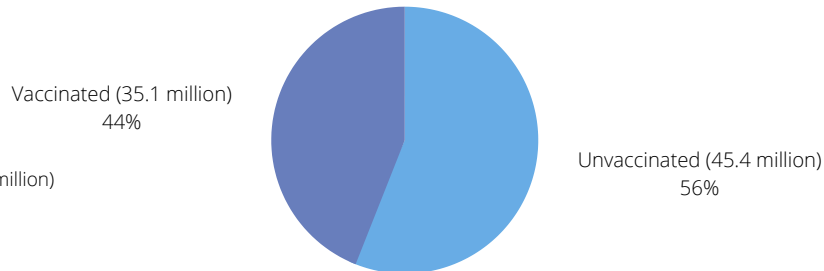


Coverage estimates are calculated using 2021 WHO/UNICEF estimates of national immunization coverage. Information on how these estimates are calculated is included in the Methods section.

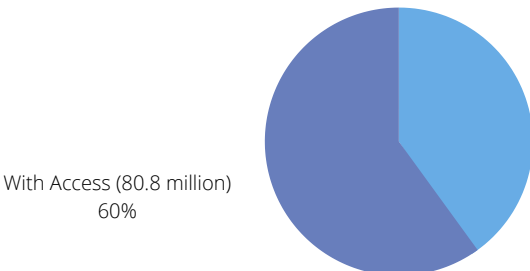
Global Coverage



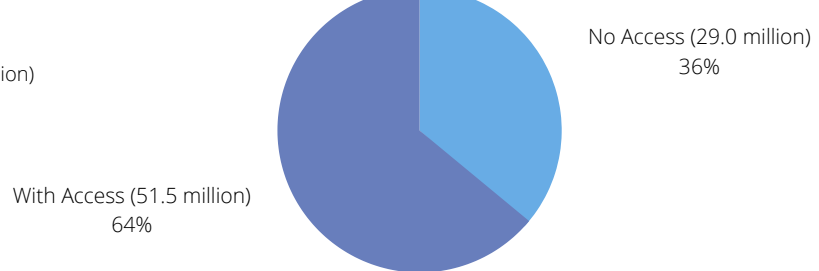
Gavi Coverage



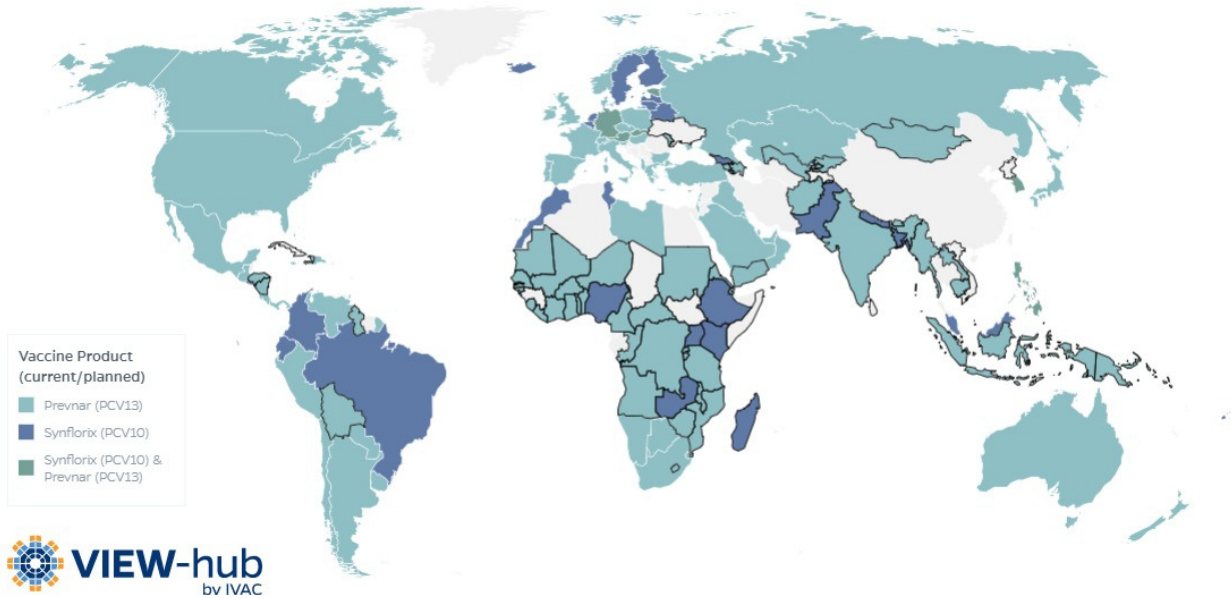
Global Access



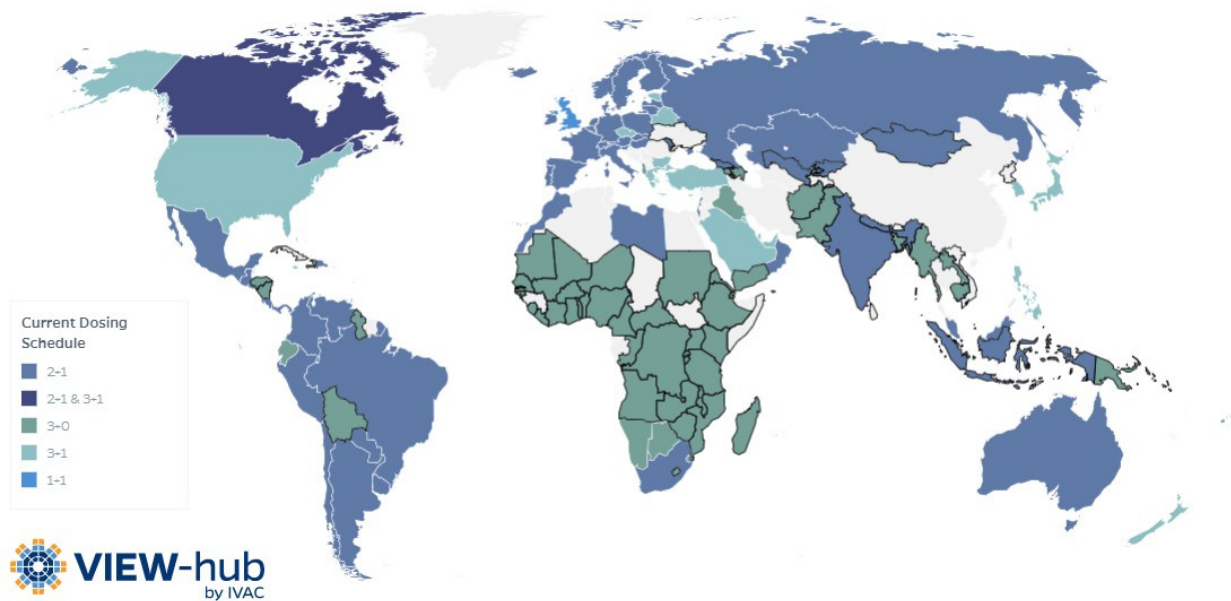
Gavi Coverage



PCV - Current Product



PCV - Current Dosing Schedule

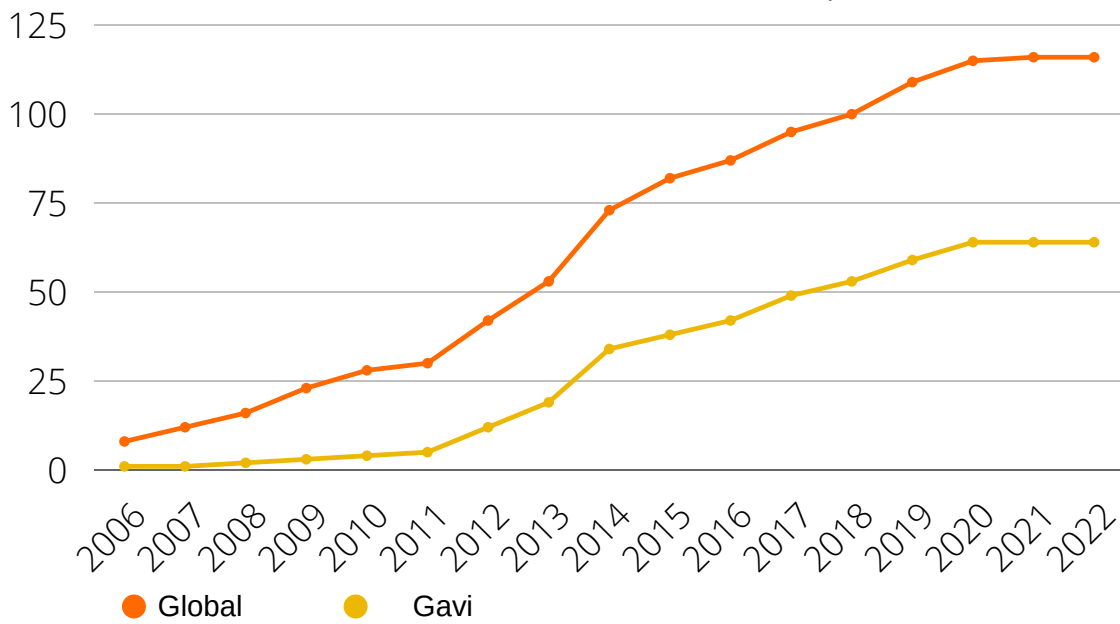


The countries outlined in black indicate countries approved for Gavi support.

See the PCV page on VIEW-hub for more information

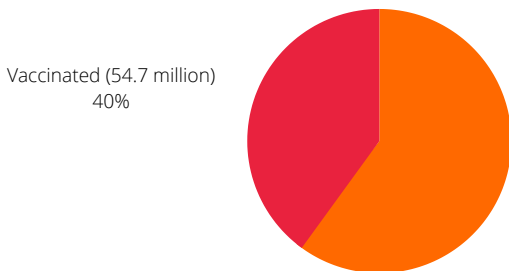
ROTAVIRUS VACCINE

Rotavirus Introduction by Year

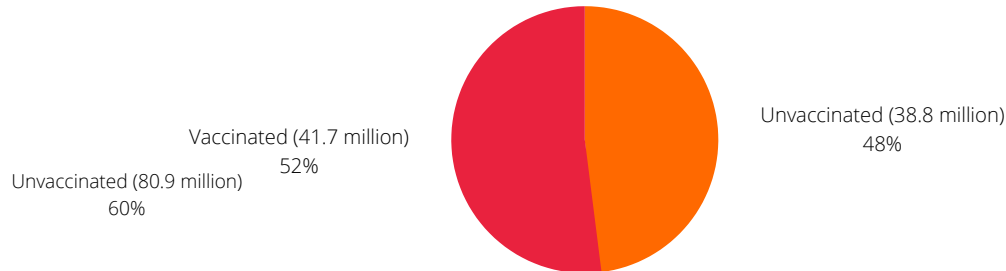


These estimates are calculated using 2021 WHO/UNICEF estimates of national immunization coverage. Information on how these estimates are calculated is included in the Methods section.

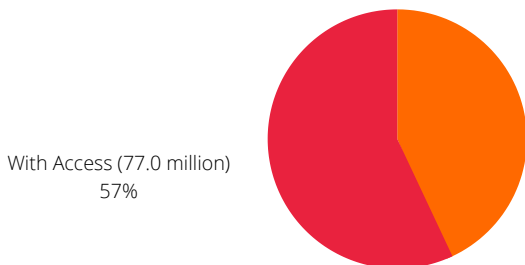
Global Coverage



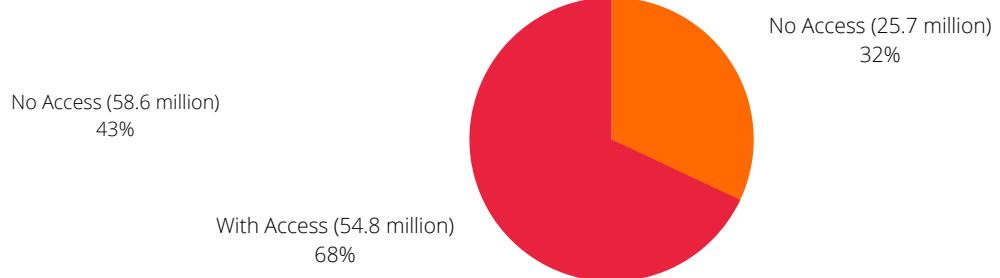
Gavi Coverage



Global Access

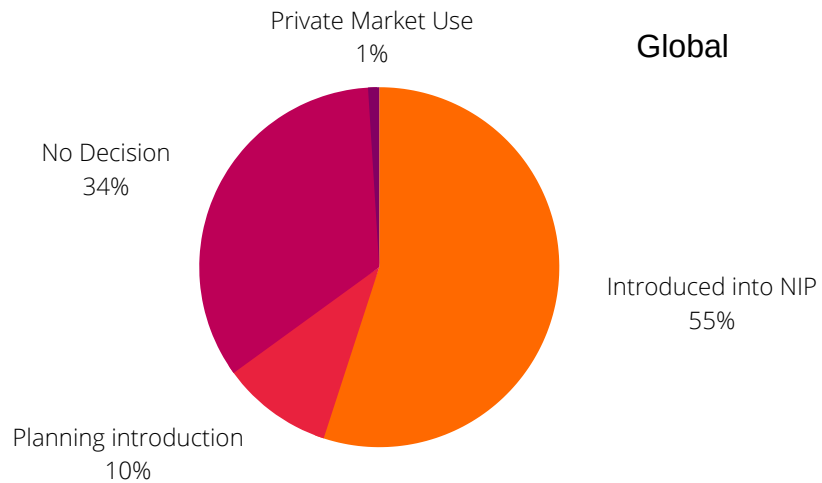


Gavi Access

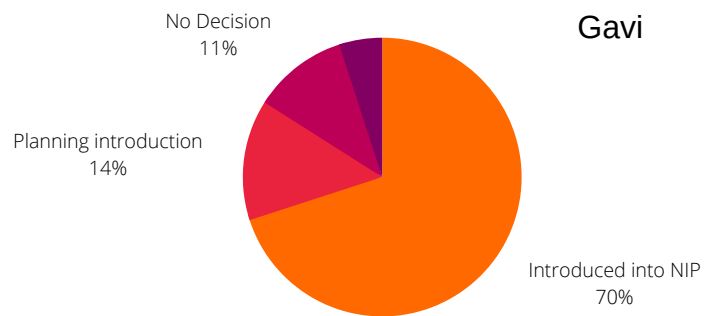


Rotavirus Vaccine Introduction Status

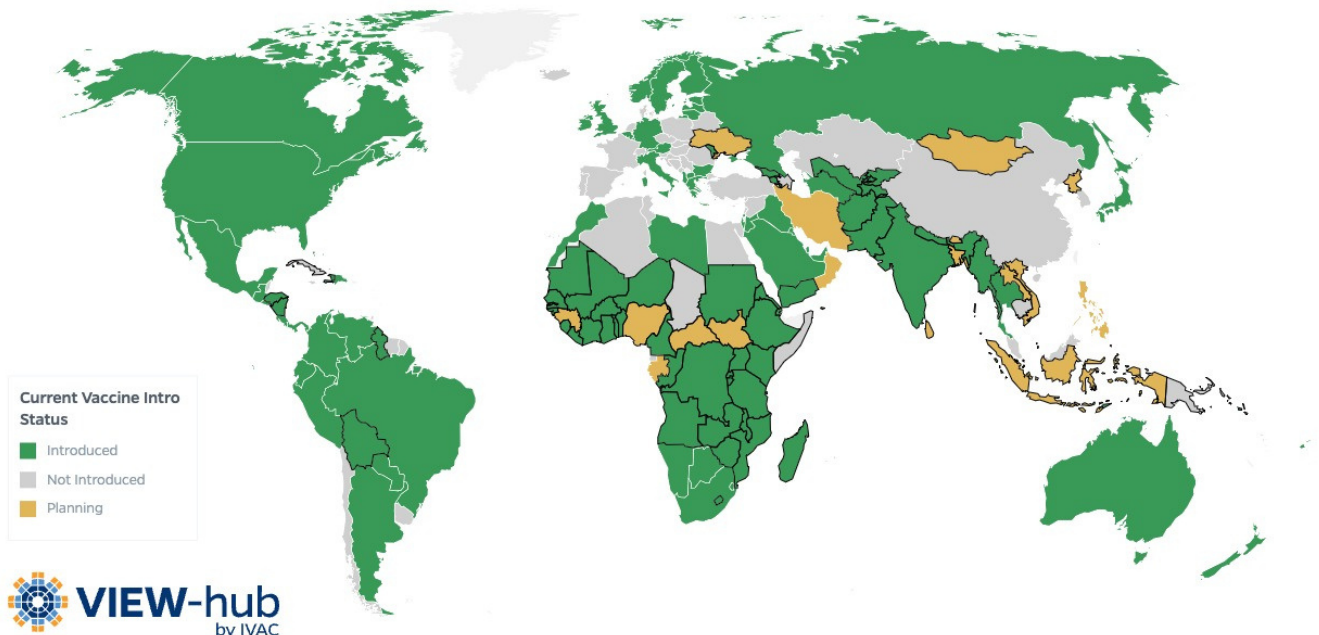
As of July 2022, 114 countries have introduced RV into their National Immunization Program; four of these countries have introduced subnationally. Eighteen countries have announced plans to introduced RV into their NIP. 62 countries have yet to make a decision regarding introduction.



53 Gavi countries have introduced rotavirus vaccine into their National Immunization Program. 54 countries are approved, with or without clarification, for Gavi support to introduce. Thirteen countries have announced plans to introduce rotavirus vaccine into their NIP. Seven countries have yet to make a decision regarding introduction.

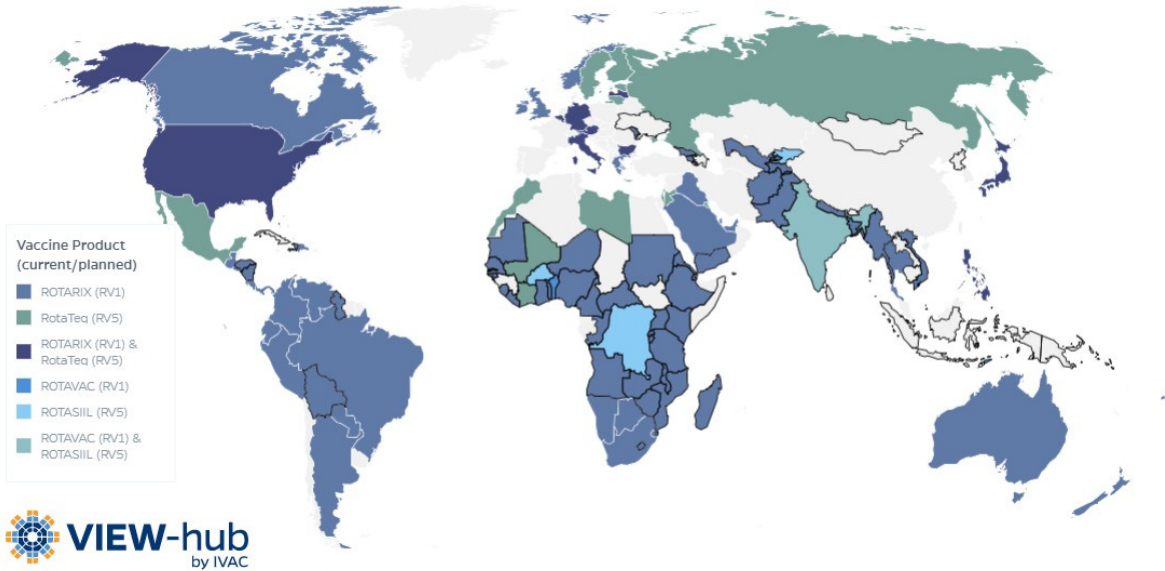


A map of countries that have introduced rotavirus vaccine is below.

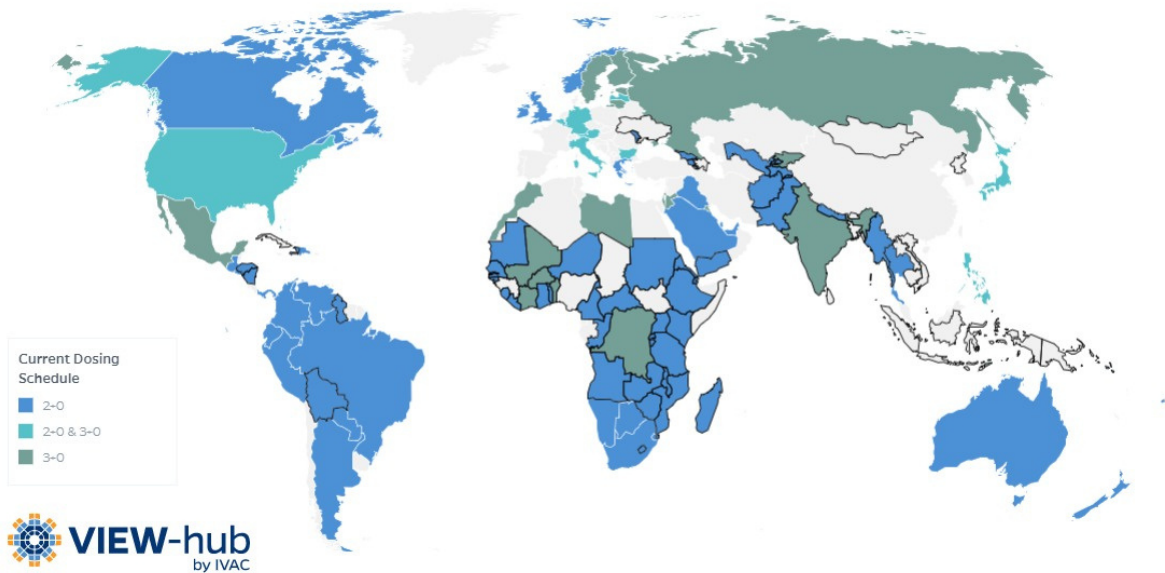


The countries outlined in black indicate countries approved for Gavi support.

Rotavirus Vaccine - Current Product



Rotavirus Vaccine - Current Dosing Schedule

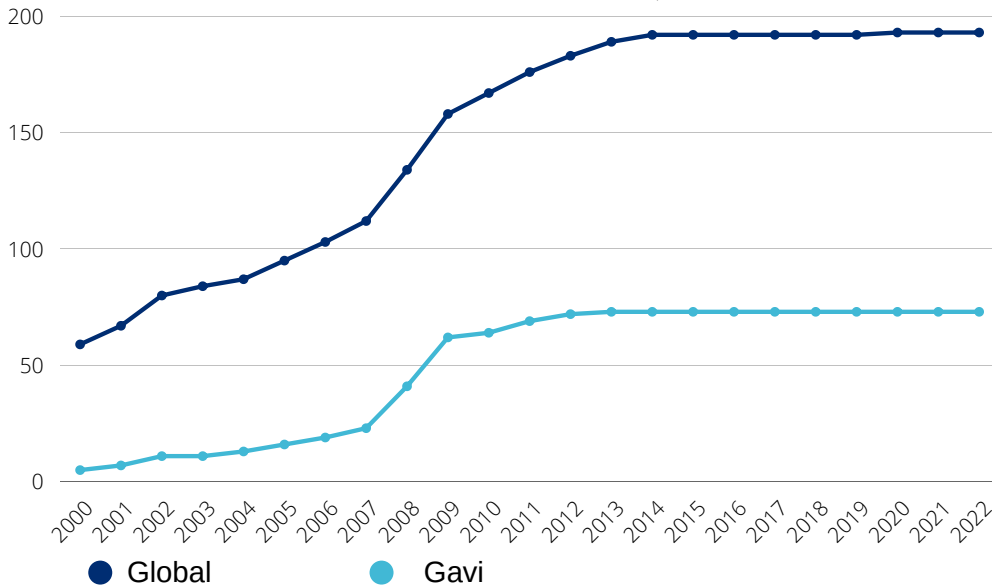


The countries outlined in black indicate countries approved for Gavi support.

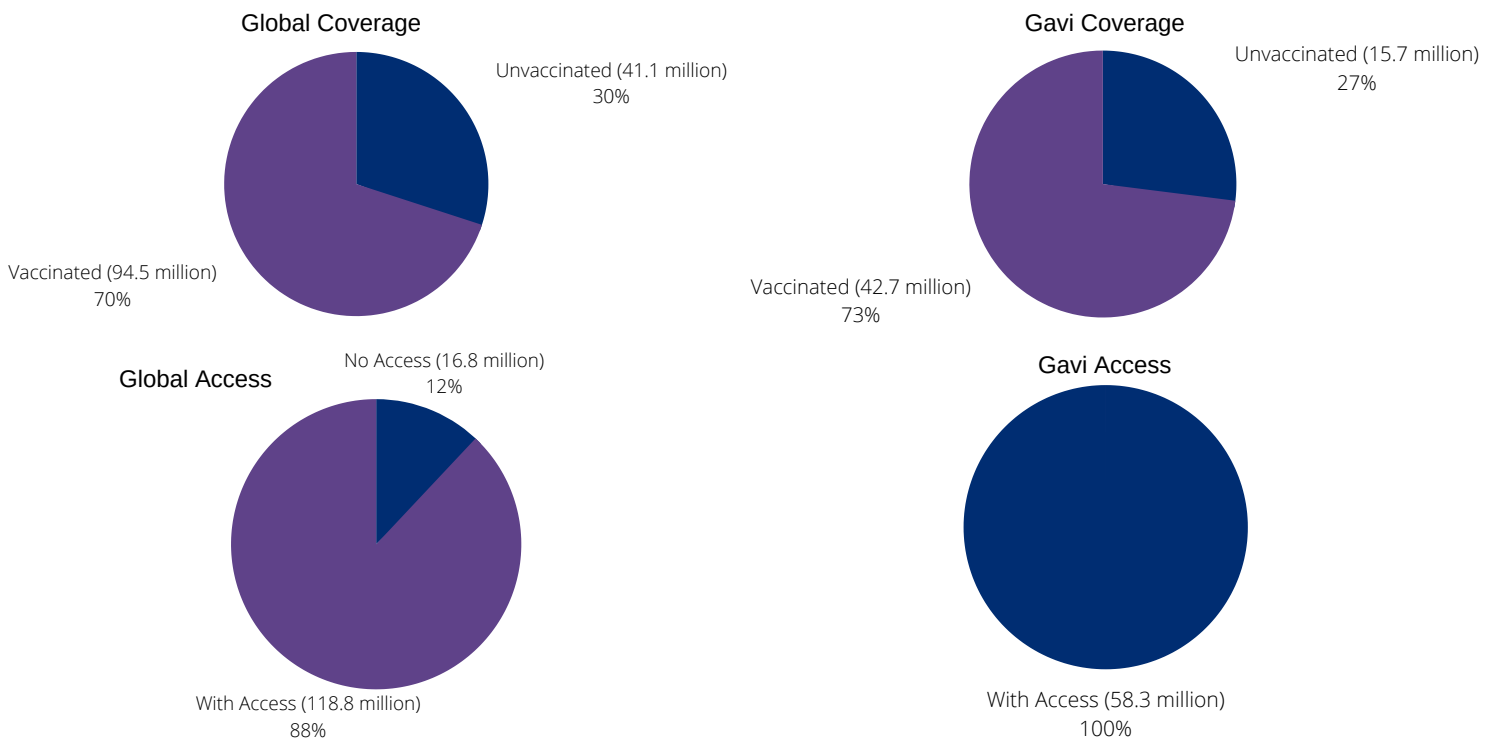
See the RV page on VIEW-hub for more information

HIB-CONTAINING VACCINE

Hib Introduction by Year



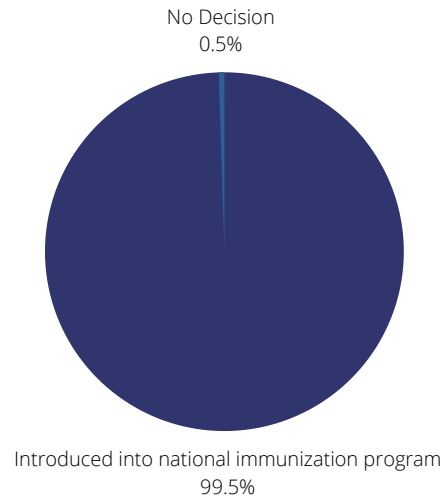
These estimates are calculated using 2021 WHO/UNICEF estimates of national immunization coverage. Information on how these estimates are calculated is included in the Methods section.



HIB-CONTAINING VACCINE

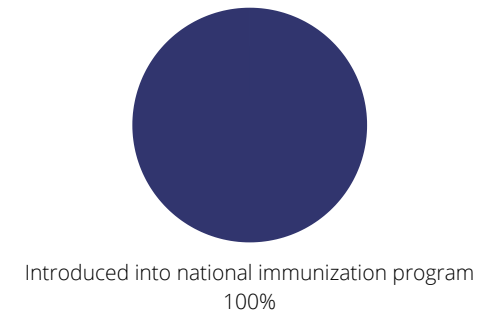
Hib Vaccine Introduction Status

As of July 2022, 193 countries have introduced a Hib-containing vaccine into their National Immunization Program, Belarus introduced subnationally and Russia introduced to at risk populations. One country (China) has yet to make a decision regarding introduction.



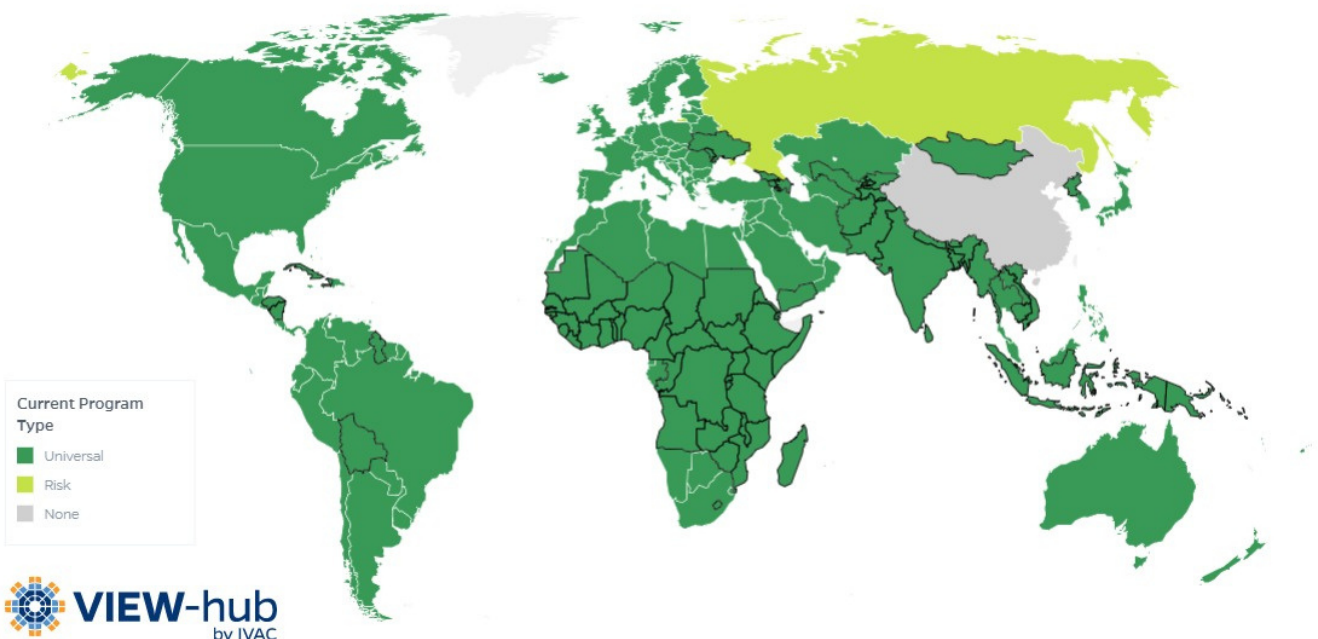
Global

73 Gavi countries have introduced Hib-containing vaccine into their National Immunization Program.



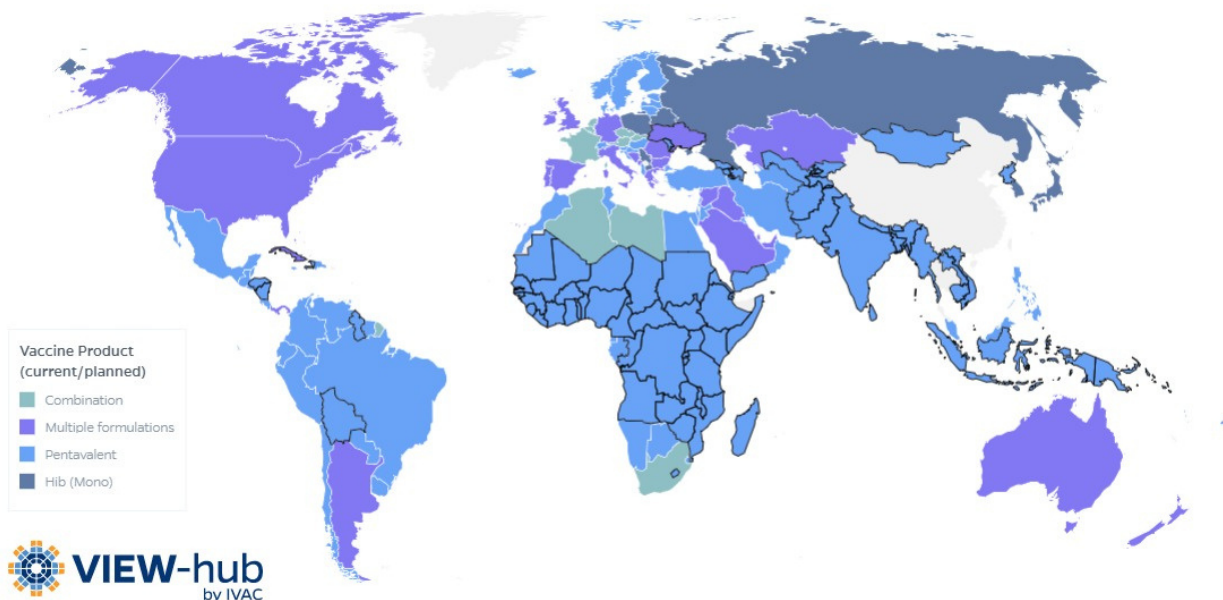
Gavi

A map of countries that have introduced Hib is below.

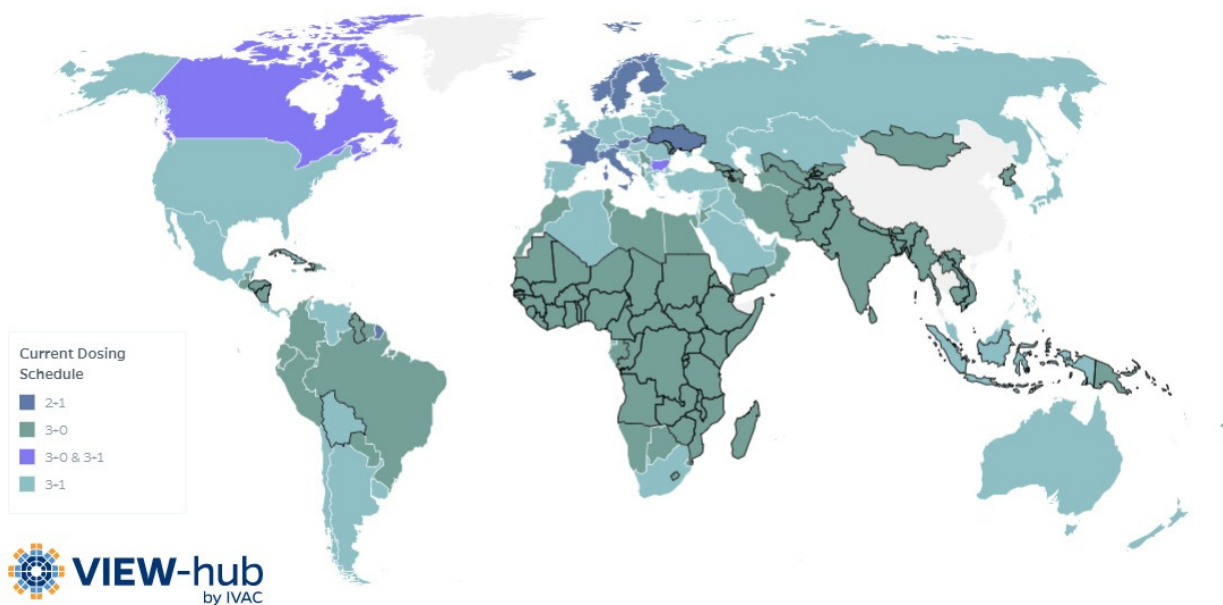


The countries outlined in black indicate countries approved for Gavi support.

Hib - Current Product



Hib - Current Dosing Schedule

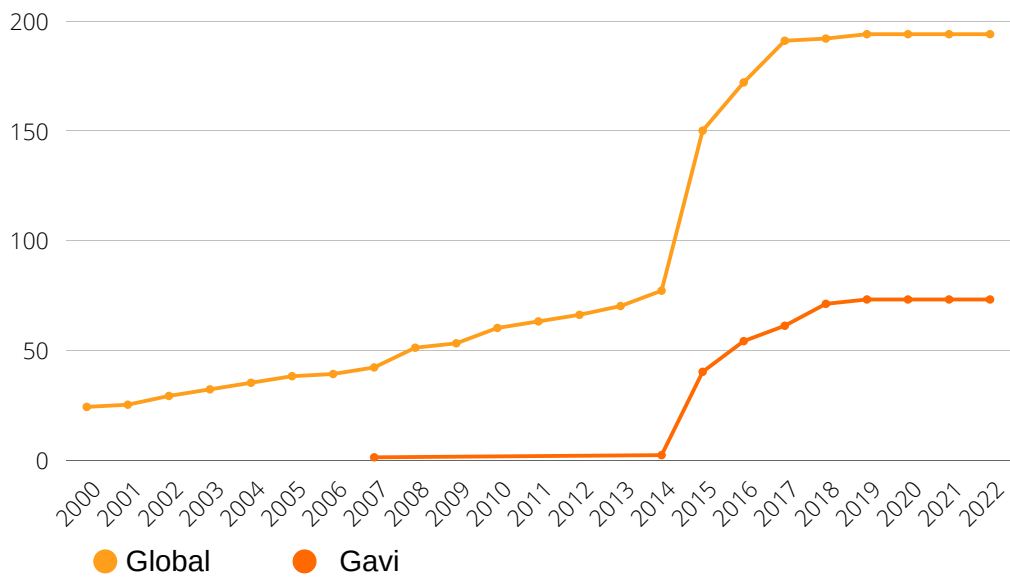


The countries outlined in black indicate countries approved for Gavi support.

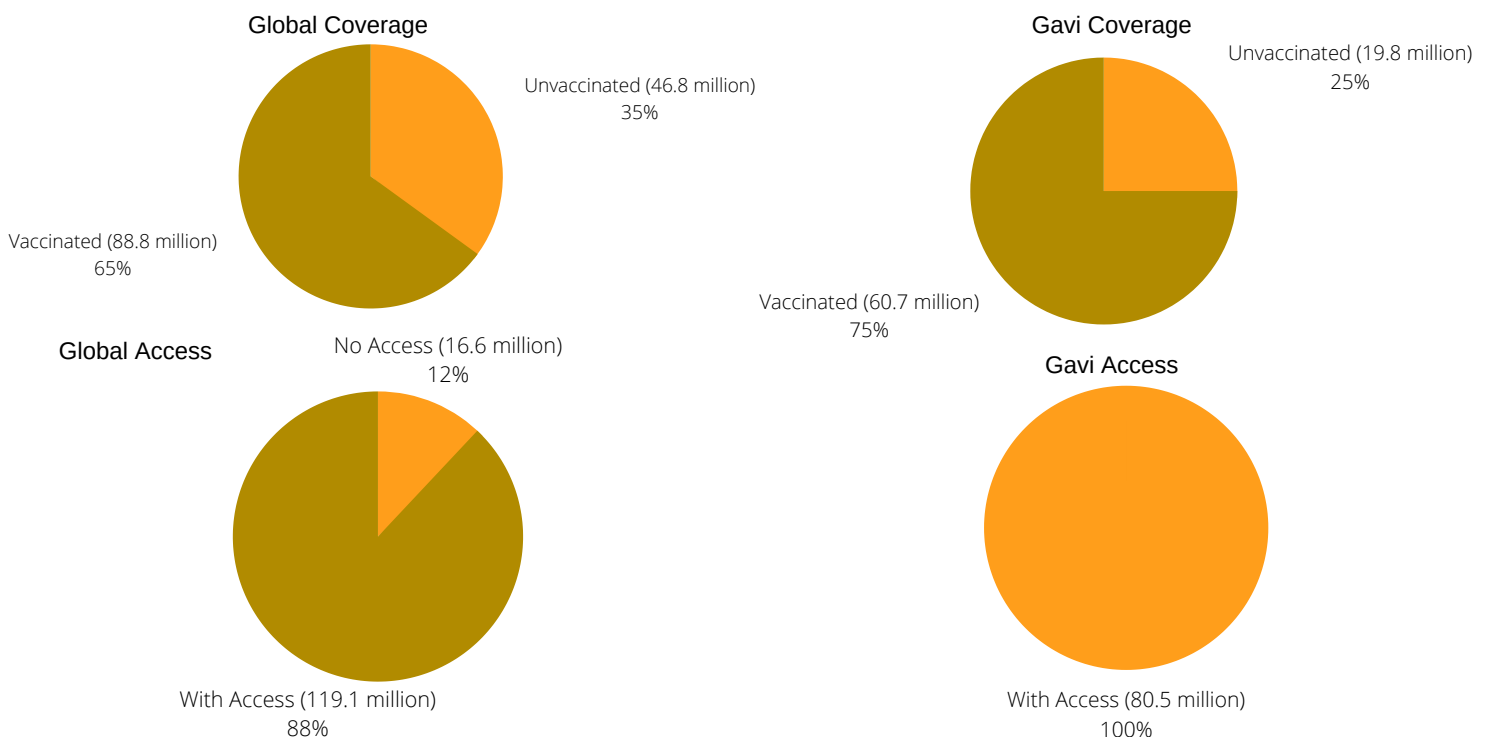
See the Hib page on VIEW-hub for more information

INACTIVATED POLIO VACCINE

IPV Introduction by Year

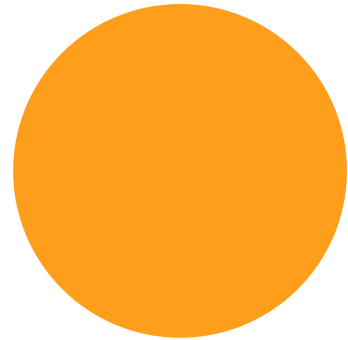


These estimates are calculated using 2021 WHO/UNICEF estimates of national immunization coverage. Information on how these estimates are calculated is included in the Methods section.



IPV Vaccine Introduction Status

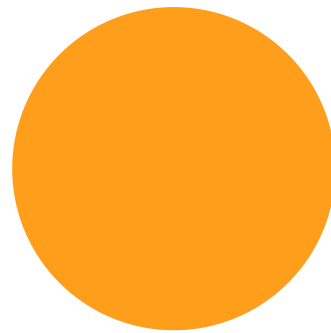
As of July 2022, 194 countries have introduced IPV into their national immunization program; among these, four countries have introduced subnationally.



Global

Introduced into national immunization program
100%

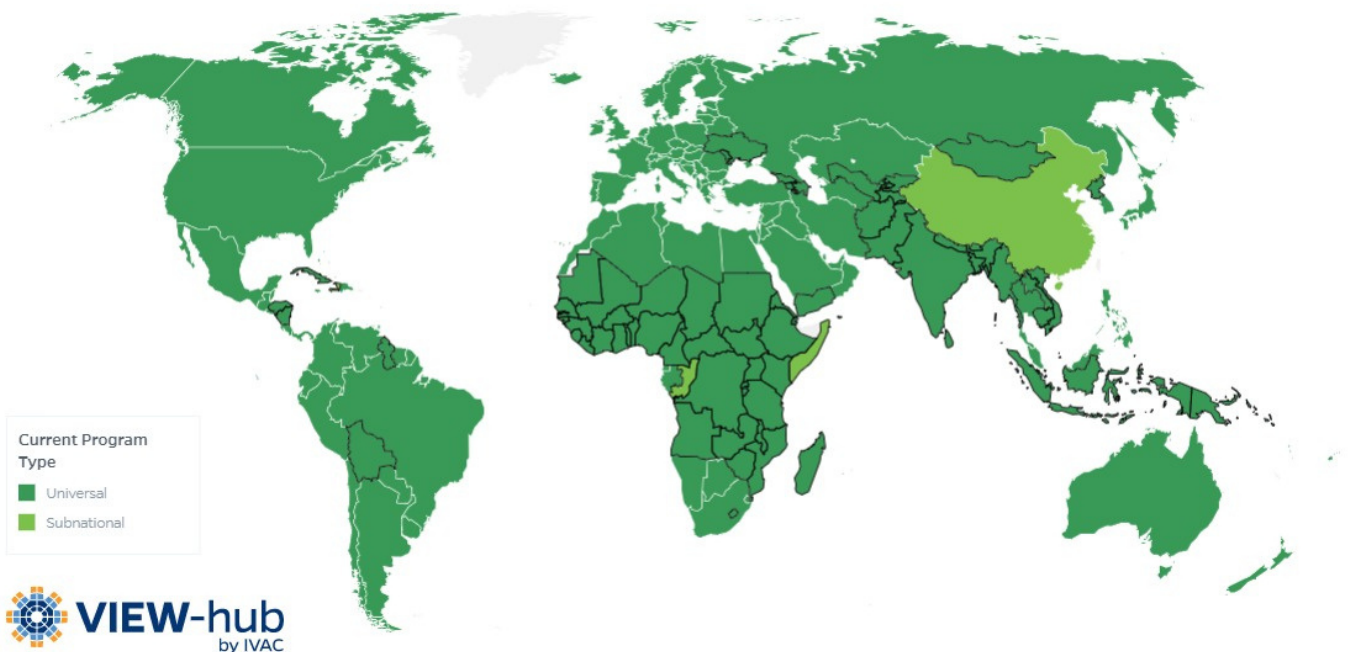
73 Gavi countries have introduced IPV into their national immunization program, three of which have introduced subnationally.



Gavi

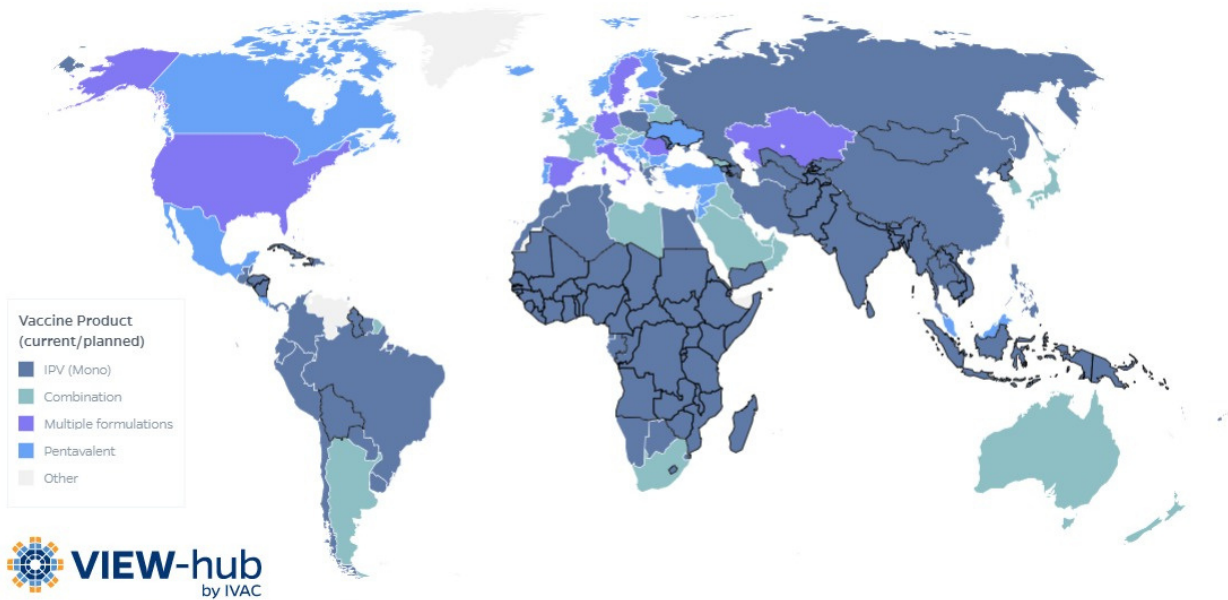
Introduced into national immunization program
100%

A map of countries that have introduced IPV is below.

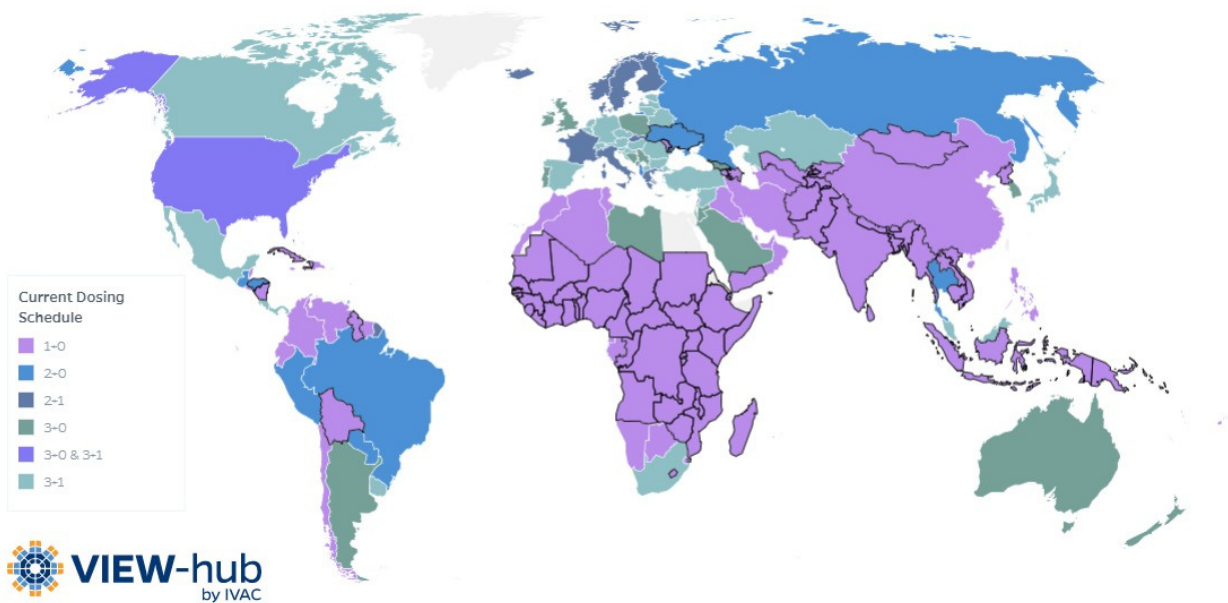


The countries outlined in black indicate countries approved for Gavi support.

IPV - Current Product



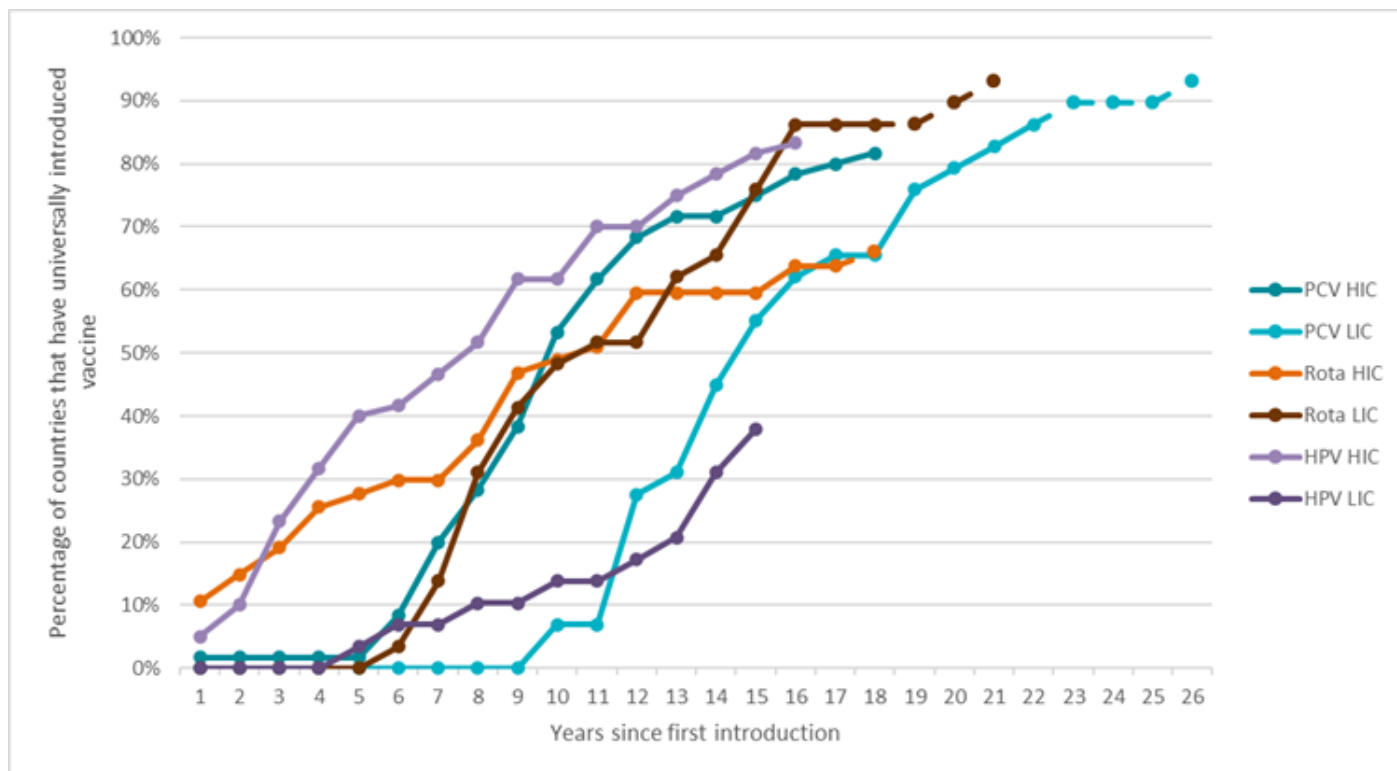
IPV - Current Dosing Schedule



The countries outlined in black indicate countries approved for Gavi support.

[See the IPV page on VIEW-hub for more information](#)

VACCINE INTRODUCTION: BY INCOME GROUP



Note: Limited projections are available for vaccine introductions in High Income Countries

The line graph shows the proportion of high- and low-income countries that have introduced or are projected to introduce PCV, rotavirus, or HPV vaccine in the target population over time. Year of first introduction for PCV is 2000, for rotavirus vaccine is 2006 and for HPV is 2006.

The gap between low- and high-income in the proportion of countries that have introduced is wider for HPV than either PCV or rotavirus vaccine: after 15 years since first introduction, less than 40% of low-income countries have introduced HPV compared to over 80% of high-income countries; for PCV after 20 years, 80% of both low- and high-income countries have introduced; for rotavirus vaccine after 18 years, a greater proportion of low-income countries (over 85%) have introduced than high-income countries (approximately 65%).

SOURCES

<p>Gavi Eligibility Status</p>	<p>Gavi, The Vaccine Alliance. Gavi Eligible Countries. 2016. Last accessed Jan 2016 at http://www.gavialliance.org/support/apply/countries-eligible-for-support/</p>
<p>DTP3 Coverage Rate</p>	<p>WHO/UNICEF Estimates of National Immunization Coverage. 2019 data as of 15 Jul 2020. Retrieved from: http://www.who.int/immunization/monitoring_surveillance/data/en/</p>
<p>Surviving Infants</p>	<p>United Nations Population Division. World Population Prospects (WPP): 2019 Revision. Retrieved from: http://esa.un.org/unpd/wpp/</p>
<p>Projected Introduction Dates</p>	<p>This information comes from a variety of sources, primarily the most recent Gavi Strategic Demand Forecast and WHO regional projections. For more information, please contact Kirthini Muralidharan at kmuralidharan@jhu.edu.</p>
<p>Dates of Introduction</p>	<p>This information comes from a variety of sources, such as Gavi, WHO, UNICEF, ministries of health, the news media, and IVAC partners/contacts. For more information, please contact Kirthini Muralidharan at kmuralidharan@jhu.edu. It is cross-referenced with WHO information (below). World Health Organization. Immunization Repository. Includes data on introductions through the end of Dec 2020, as of Jan 2021.</p>
<p>Current Vaccine Use Status and Program Type</p>	<p>This information comes from a variety of sources, such as Gavi, WHO, UNICEF, ministries of health, news media, and IVAC partners/contacts. For more information, please contact Kirthini Muralidharan at kmuralidharan@jhu.edu</p>

SELECTED KEY TERMS

Approved: the application meets all the criteria and is approved for Gavi support.

Approved with clarification: the application lacks specific pieces of data, which must be provided generally within a month. Data must be received before the application is considered officially approved for Gavi support.

Children with access: the number of children (based on surviving infants 2015) who live in a country that has introduced the vaccine into the national immunization program. This does not include countries with widespread market use or high-risk programs. For regional introductions, those regions that have introduced may be included and the regions which have not introduced excluded.

Children vaccinated: the number of surviving infants who received the vaccination based on the 2018 coverage rates of countries who have introduced. The WHO/UNICEF estimates of national immunization coverage (WUENIC) coverage rates are used for this figure.

Introduced into national immunization program: the vaccine has been incorporated into the national government's immunization program, either for all children or for special populations at high-risk of disease, and it may include programs that are being phased in over time. This status can apply to any country, regardless of Gavi eligibility. For IPV, this status covers all countries that have introduced at least one dose of IPV into its child national immunization schedule.

Subnational introductions: the vaccine has been introduced into the vaccination schedule for a geographic subset of the country. This status can apply to any country, regardless of Gavi eligibility.

Gavi application submitted under review: the country has submitted a New and Underused Vaccines Support (NVS) application for this vaccine and is awaiting Gavi evaluation.

Gavi approved/approved with clarification: the country's application to Gavi for New and Underused Vaccines Support (NVS) financing for this vaccine has been approved or approved with clarifications.

SELECTED KEY TERMS (CONT.)

Gavi conditional approval to introduce: the application to Gavi for New and Underused Vaccines Support (NVS) for this vaccine does not fulfill specific or significant application requirements. Missing requirements must be provided in a subsequent round to complement the original application. If the conditions are not met within the given timeframe after the first submission, re-submission of a new application is required.

Gavi resubmission: the New and Underused Vaccines Support (NVS) application for this vaccine is incomplete and a full application should be submitted in a future round.

Gavi plan to apply: the country has made a public statement (through government or other recommending body on vaccines) that they plan to introduce the vaccine and apply for Gavi New and Underused Vaccines Support (NVS), but has not yet submitted an application.

No decision: the country has not indicated a firm decision to introduce the vaccine into its national immunization program or to apply for Gavi New and Underused Vaccines Support (NVS) for the vaccine.

Non-Gavi planning introduction: a country that is not eligible for Gavi support has plans to introduce the vaccine into its national immunization program and has taken steps to initiate its program, such as contacting the vaccine manufacturer OR a country that is eligible for Gavi support and plans to introduce without it.

Planning introduction: the combination of countries that have announced plans to apply for Gavi support, Gavi countries that have announced plans to introduce the vaccine without Gavi support, or non-Gavi countries that have announced a plan to introduce.

Risk: program for this vaccine only covers children in special populations at high-risk for disease; this may include children with health conditions, those of vulnerable socioeconomic statuses or ethnic groups, or those living in regions of high risk.

Widespread coverage through private market: most (over half) of the target population is receiving the vaccine through private market use.

For any definitions not provided above, please refer to the data dictionary in VIEW-hub at <https://view-hub.org/resources>.

APPENDIX

This report has been generated using data and maps from VIEW-hub, developed and maintained by the International Vaccine Access Center (IVAC) at the Johns Hopkins Bloomberg School of Public Health for use by IVAC and its affiliated projects and partners. VIEW-hub is a publicly-accessible interactive platform that allows real-time visualization of data on vaccine introduction, use, and impact. Information was gathered from internationally-recognized sources, such as WHO, Gavi, UNICEF, vaccine manufacturers, ministries of health, and news media.

Please note that all forecasted dates in this report rest on assumptions and actual dates may vary. Vaccine introduction dates do not imply an obligation by Gavi to support coverage.

Disclaimer: The presentation of VIEW-hub maps in this report is not by any means an expression of IVAC's opinion regarding the legal status of countries/territories, their governing authorities, or their official boundaries. On VIEW-hub's website, country borders which are not in full agreement are displayed with dotted lines, which may be difficult to visualize at the global view presented in this report.

Definitions and sources are available within VIEW-hub at www.VIEW-hub.org.

This report and the PowerPoint slides with the report graphics can be found at: www.VIEW-hub.org/resources. All maps shown in this report were generated on VIEW-hub and can be replicated/updated on the site.

Any data on projected introduction dates should not be reproduced or disseminated without prior consent from VIEW-hub personnel.

If data are used in a presentation, please cite VIEW-hub accordingly:

Source: International Vaccine Access Center (IVAC), Johns Hopkins Bloomberg School of Public Health. VIEW-hub Report: Global Vaccine Introduction and Implementation, June 2021. www.jhsph.edu/ivac/view-hub. Accessed: [Day Month Year].

If you have any questions, please contact Kirthini Muralidharan at kmuralidharan@jhu.edu.

THANK YOU

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For any VIEW-hub related inquiries, please contact Kirthini Muralidharan at kmuralidharan@jhu.edu.