



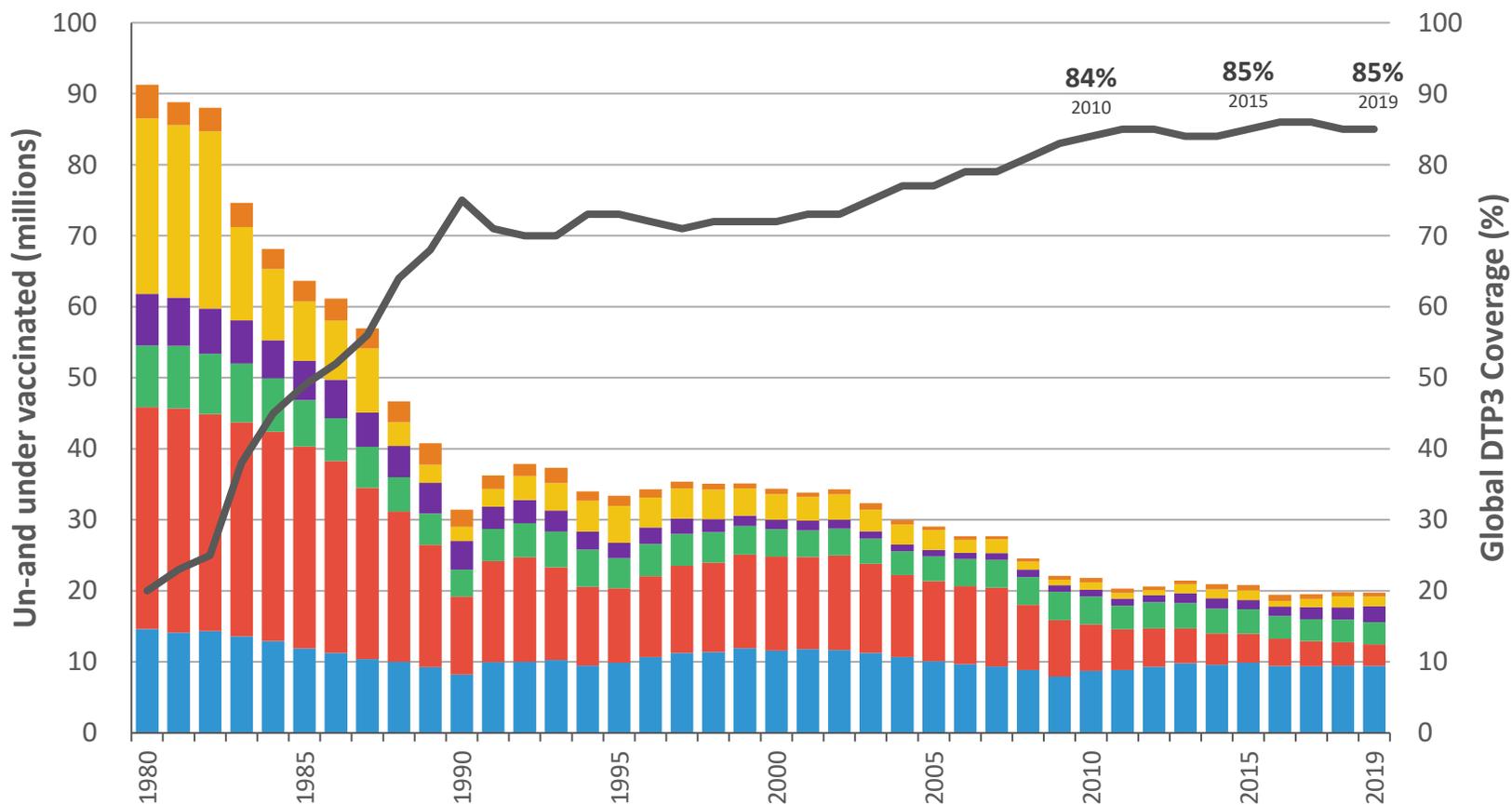
Impact of COVID-19 on Coverage and Equity

Samir V. Sodha, MD, MPH
WHO/IVB
February 24, 2021

Outline

- **Immunization Coverage and Equity**
 - **Before COVID-19**
 - **After COVID-19**
- **Surveillance: Impact of COVID-19**
- **Considerations for research moving forward**

Almost 9 out of 10 children reached in 2019, but almost 20 million children un-or under vaccinated



Coverage of a third dose of vaccine protecting against diphtheria, tetanus, and pertussis (DTP-3) remains at 85% in 2019, leaving 19.7 million children vulnerable to vaccine preventable diseases

The key goal of the Immunization Agenda 2030 is to make vaccination available to everyone, everywhere, by 2030.

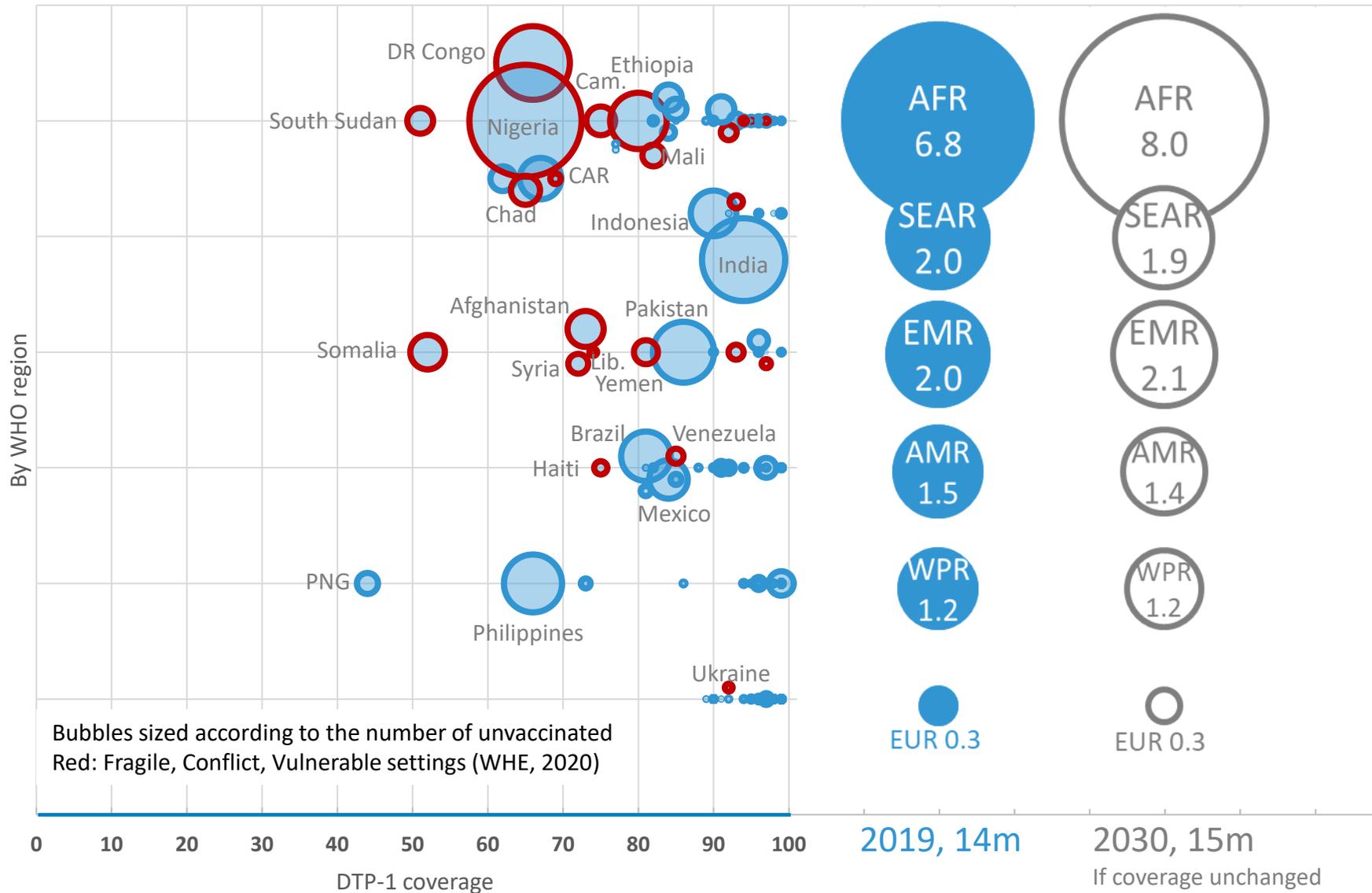
While immunization is probably the most successful public health intervention, reaching 85% of infants is not enough. Coverage has plateaued over the last decade, leaving almost 20 million children unprotected. Almost half of these live in the African Region.

Un-or under vaccination is measured through the lack of DTP-3 in this analysis

19.7 million un-and under vaccinated children in 2019, by WHO region



The African Region and countries affected by conflict are home to large numbers of “zero-dose children*”



The 14 million children who didn't receive an initial dose of basic vaccines often lack access to immunization services and other health services.

Zero-dose children live disproportionately in the African continent and in countries affected by conflict. They are also likely to lack access to other health and welfare services and are subject to multiple deprivations.

Middle income countries such as the Philippines, Brazil, Mexico and Angola also have sizeable numbers of zero-dose kids.

If coverage is unchanged, by 2030, projected population increases in Africa will mean that 15 million children may be left out.

** Zero dose children defined as those lacking DTP1*

COVID-19 in 2020



30 January 2020: public health emergency of international concern (PHEIC) declared

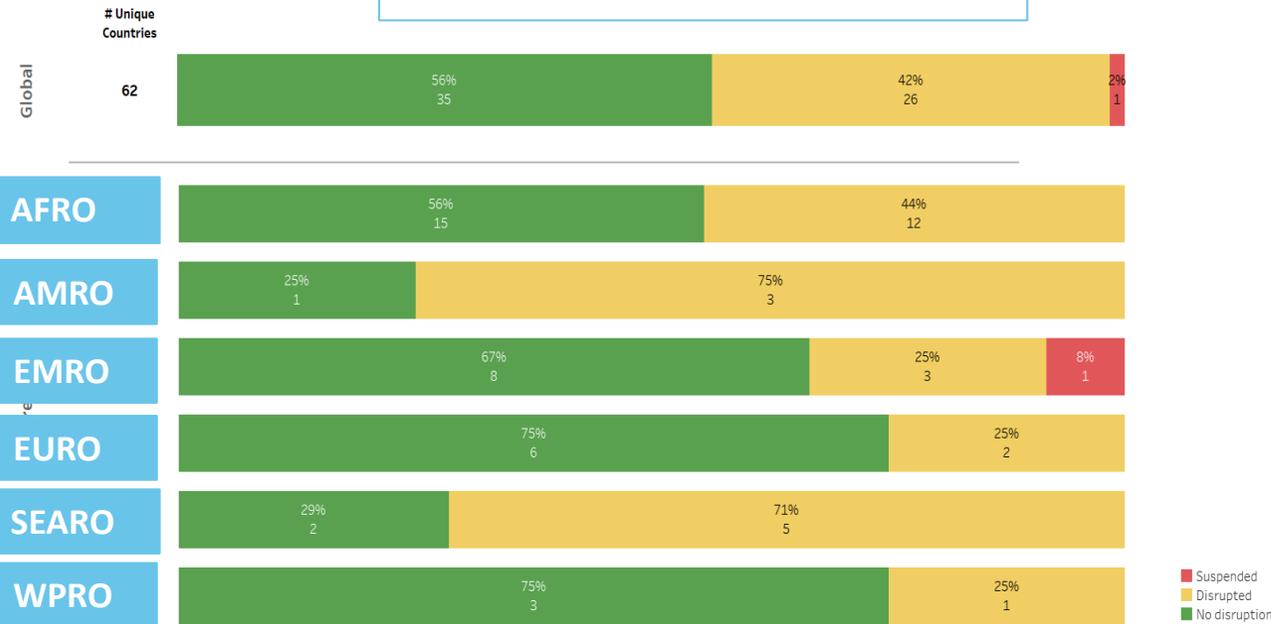
26 March 2020: WHO publishes *Guiding Principles for Immunization during COVID-19 Pandemic*

Reported Immunization Service Disruptions due to COVID-19, May 2020



FIXED POST ACTIVITIES

Based on single calculated status per *country*
National respondents only



OUTREACH ACTIVITIES



Respondents = 260
 # Countries/territories = 82

Source: Immunization Pulse Poll 2, Question 7. Displayed percentages are of the calculated single status for disruption level in a country based on the majority response from that country. The data collected are subject to limitations inherent to voluntary self-reporting, self-selection bias, not all countries responded, countries with only one response vis-à-vis countries with many, possibility of fraudulent responses and not having a sampling frame to make inferences. Furthermore, the information about each country does not represent official reporting from Member States to WHO or UNICEF. Thus, the results presented here need to be interpreted with caution and do not represent in any way a WHO or UNICEF position regarding any country or territory for which one or more replies were received.

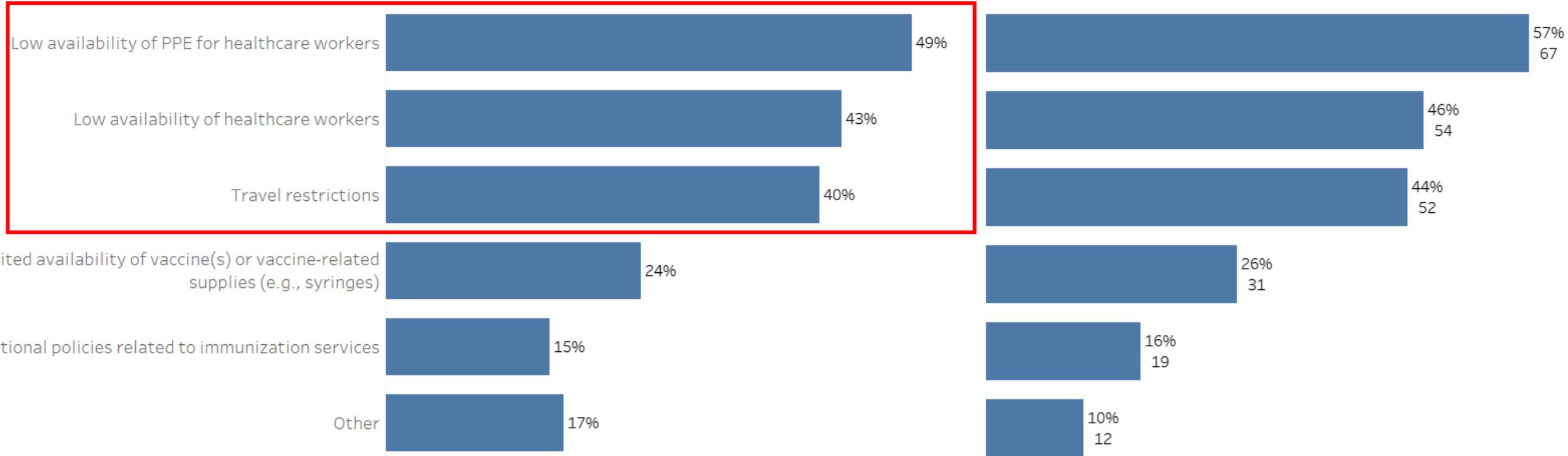
Global Reasons Reported for Disruption to Immunization, May 2020

All respondents



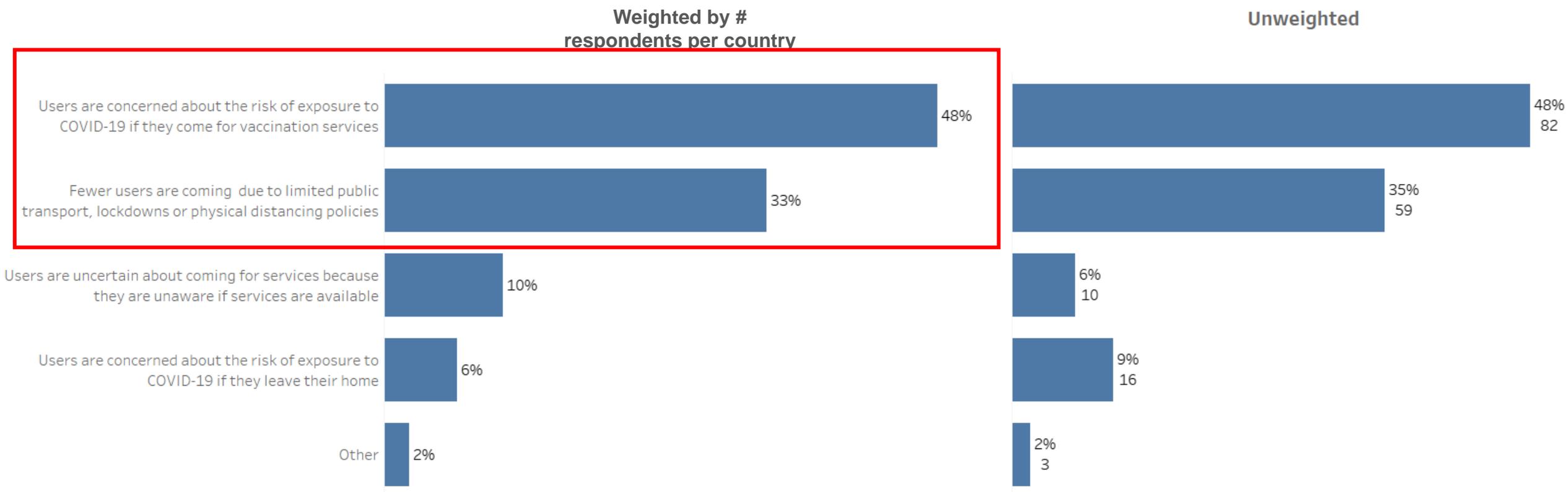
Weighted by # respondents per country

Unweighted



Source: Immunization Pulse Poll 2, Question 9. Includes both national & sub-national respondents. Results weighted by # respondents per country. The data collected are subject to limitations inherent to voluntary self-reporting, self-selection bias, not all countries responded, countries with only one response vis-à-vis countries with many, possibility of fraudulent responses and not having a sampling frame to make inferences. Furthermore, the information about each country does not represent official reporting from Member States to WHO or UNICEF. Thus, the results presented here need to be interpreted with caution and do not represent in any way a WHO or UNICEF position regarding any country or territory for which one or more replies were received.

Global Reasons Reported for Disruption to Demand for Immunization, May 2020

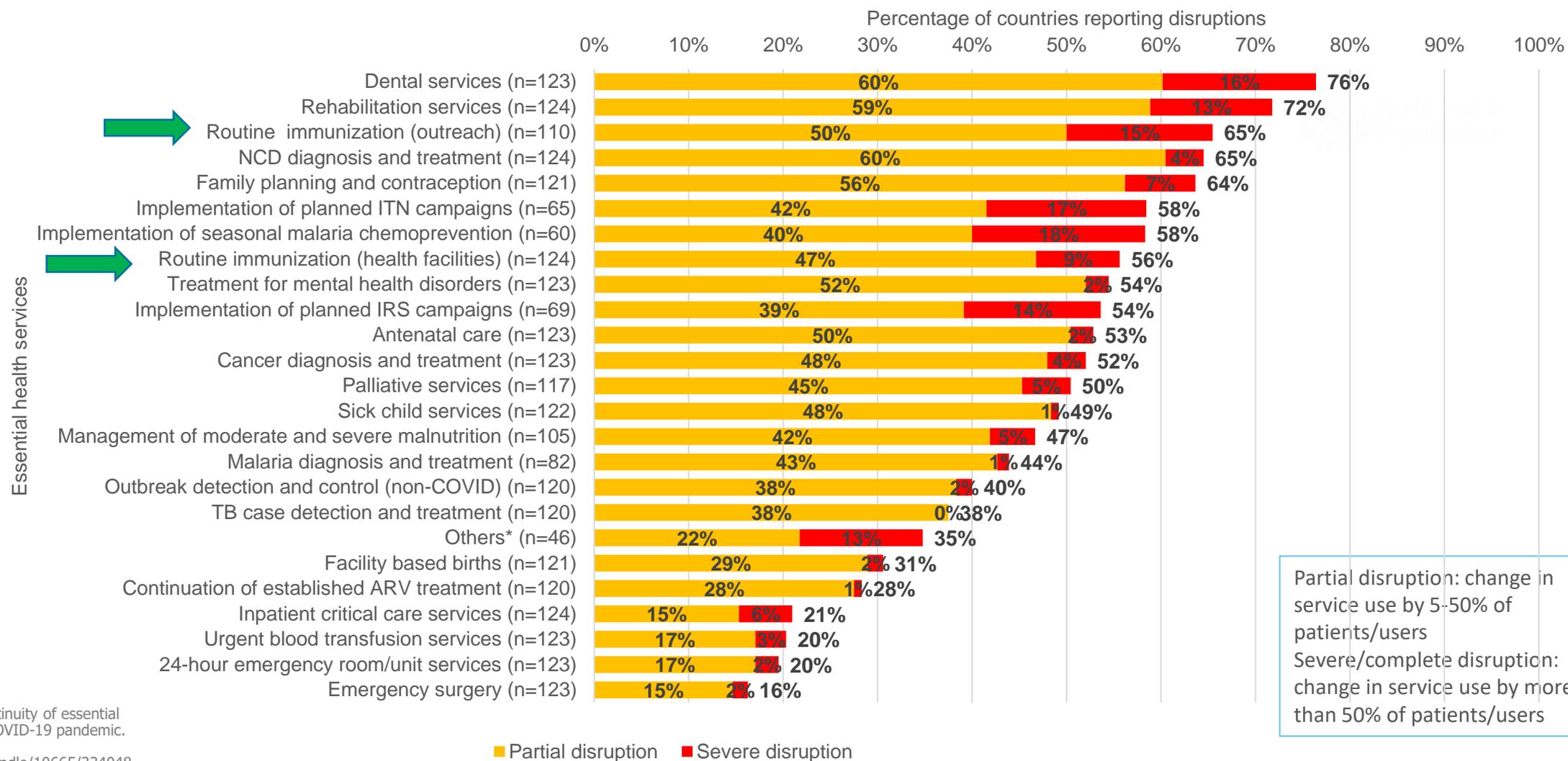


Source: Immunization Pulse Poll 2, Question 11. Includes both national & sub-national respondents. Results weighted by # respondents per country.

The data collected are subject to limitations inherent to voluntary self-reporting, self-selection bias, not all countries responded, countries with only one response vis-à-vis countries with many, possibility of fraudulent responses and not having a sampling frame to make inferences. Furthermore, the information about each country does not represent official reporting from Member States to WHO or UNICEF. Thus, the results presented here need to be interpreted with caution and do not represent in any way a WHO or UNICEF position regarding any country or territory for which one or more replies were received.

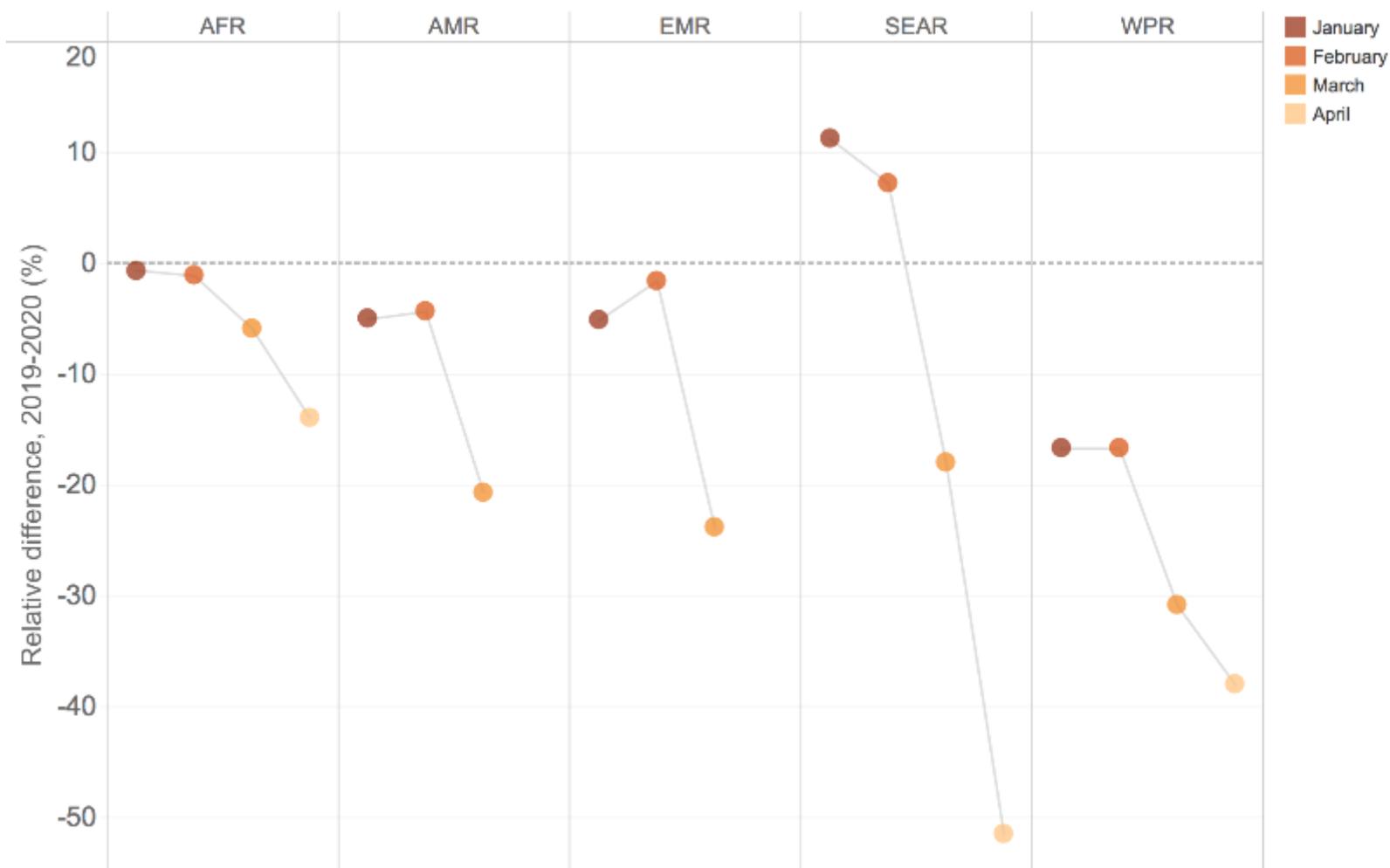
Countries Reported Disruptions in all 25 Tracer Services

Percentage of countries reporting disruptions to 25 tracer services



Source: Pulse survey on continuity of essential health services during the COVID-19 pandemic. Interim report, WHO, 2020. <https://apps.who.int/iris/handle/10665/334048>

Immunization services across the world affected by COVID-19 pandemic



Total countries

47 35 21 11 27

Countries reported
(% surviving infants
represented)

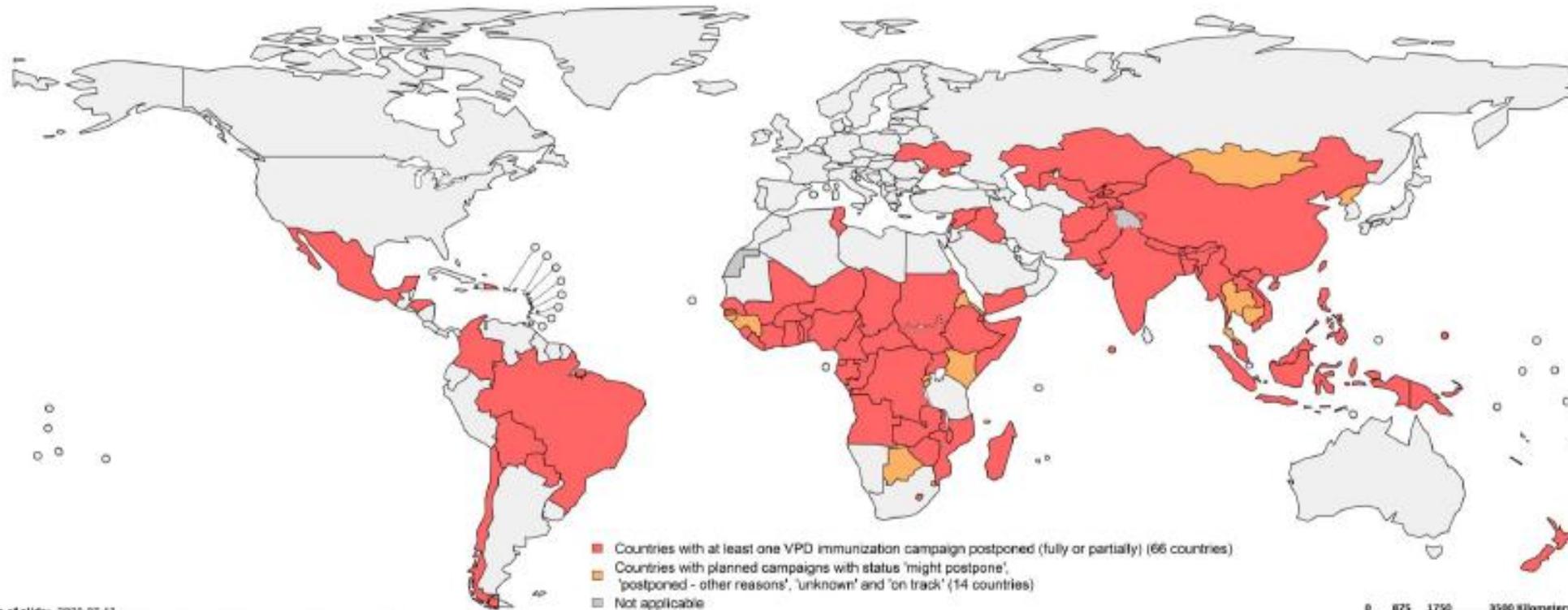
Jan: 42 (94)	Jan: 20 (23)	Jan: 5 (54)	Jan: 9 (99)	Jan: 5 (13)
Feb: 41 (84)	Feb: 20 (23)	Feb: 5 (54)	Feb: 9 (99)	Feb: 5 (13)
Mar: 41 (84)	Mar: 20 (23)	Mar: 5 (54)	Mar: 9 (99)	Mar: 5 (13)
Apr: 34 (75)	Apr: 0 (0)	Apr: 0 (0)	Apr: 5 (24)	Apr: 4 (11)

In 2020, disruptions to the routine immunization program linked to the COVID-19 pandemic and its response measures are widespread and have affected countries in all WHO regions. Preliminary and incomplete data received from many countries suggest steep drops in the number of administered doses in March and especially April of this year, compared to last year.

While countries have made efforts to continue providing immunization services, most outreach activities have been suspended and demand for vaccination has declined linked to fear of SARS-CoV 2 transmission in health care facilities and physical distance measures, including lockdowns and reduced transportation.

Pulse polls suggest that special efforts are being made to monitor the levels of disruption in immunization services in order to better plan vaccination catch-up activities

66 Countries with ≥ 1 Vaccination Campaign Postponed due to COVID-19, 15 May 2020



Date of slide: 2020-07-13

Map production: Immunization, Vaccines and Biologicals (IVB), World Health Organization (WHO)

Data source: WHO/IVB Repository, 15th May 2020

Disclaimer:

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
World Health Organization, WHO, 2020. All rights reserved.

0 875 1750 3500 kilometers

Infection Prevention and Control for Immunization

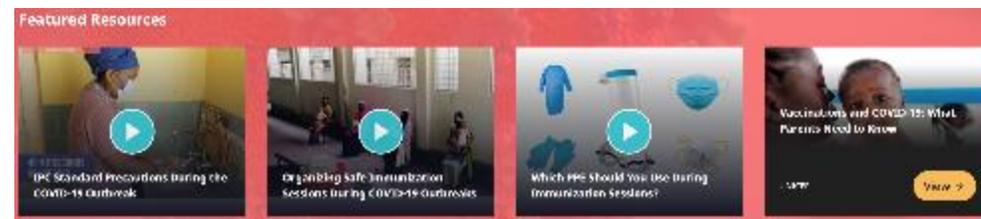


Interactive Webinar, 27 May 2020- 'IPC for immunization during COVID-19

- 873 registrants from >100 countries
- Session recording, slides, resources, Q&A available on <https://boostcommunity.org/news/8982>

Three videos on IPC for Immunization in COVID-19 context (English, French, Spanish)

- IPC Standard Precautions During the COVID-19 Outbreak (<https://watch.immunizationacademy.com/en/videos/527>)
- Organizing Safe Immunization Sessions During COVID-19 Outbreaks (<https://watch.immunizationacademy.com/en/videos/605>)
- Which PPE Should You Use During Immunization Sessions? (<https://watch.immunizationacademy.com/en/videos/608>)



Costs of COVID-19 IPC Measures: Routine Immunization Outreach



Operational cost per dose of delivering immunization through outreach services during COVID-19 could increase by:

- **11-14% by adding handwashing stations and hand sanitizer at outreach sites**
- **45-61% through adding PPE (masks, gloves, goggles)**
- **9-42% to add staff to support crowd control and infrared temperature screening**
- **40-119% to increase the frequency of outreach with smaller session sizes**
- **10-11% due to increased outreach volumes to compensate for reductions in facility-based coverage**

Overall, implementing these measures results in an estimated cumulative increased operational cost per dose ranging from 20% to 129%

Ref: Analysis by Thinkwell. <https://thinkwell.global/wp-content/uploads/2020/07/Cost-of-outreach-vaccination-in-the-context-of-COVID-19-20-July-2020.pdf>

Costs of COVID-19 IPC Measures: Campaigns



Operational cost per dose of immunization campaign held during COVID-19 could increase by:

- **5-20% through adding PPE and IPC measures**
- **10-26% to support physical distancing and screening**
- **8-32% due to additional per diems resulting from changes in delivery strategy**
- **10-40% when operational costs such as transport and social mobilization are increased**

Overall, implementing these measures results in an estimated cumulative increased operational cost per dose ranging from 49% to 154%

Ref: Analysis by Thinkwell. <https://thinkwell.global/wp-content/uploads/2020/05/COVID-19-impact-on-campaigns-9-June-2020.pdf>

WHO Guidance for Planning and Implementing Catch-up Vaccination



www.who.int/immunization/programmes_systems/policies_strategies/catch-up_vaccination/en/

WORKING DRAFT – August 2020

Leave No One Behind: Guidance for Planning and Implementing Catch-up Vaccination



Closing Immunization Gaps Caused by COVID-19
DRAFT – 11 August 2020



World Health Organization

www.who.int/immunization

Countries ▾ Newsroom ▾ Emergencies ▾ Data ▾ About Us ▾

Immunization, Vaccines and Biologicals

Immunization, Vaccines and Biologicals

- Vaccines and diseases
- Global Vaccine Action Plan
- WHO policy recommendations
- National programmes and systems
 - Policy and strategies
 - Service delivery
 - Linking with other interventions
 - Sustainability
 - Financing and planning
- Surveillance
- Standards and standards development
- Regulation

Catch-up vaccination

Timely vaccination is key to rendering population immunity against vaccine-preventable diseases (VPDs), ensuring populations are fully protected against life-threatening illnesses as early as possible, and preventing large outbreaks of VPDs. However, scheduled vaccinations may be missed for a number of context-specific reasons (e.g. difficulty accessing health services and other health system barriers, health worker practices, stock outs, beliefs held by caregivers and community members about vaccination, etc.).

No one should miss out on the right to the protection that vaccines offer, simply because they are unable to access services in time.

A catch up vaccination strategy (which includes a clearly defined catch up vaccination policy and catch up schedule) is an essential part of a well-functioning national immunization programme and should be implemented on a continuous basis.

Catch-up vaccination refers to the action of vaccinating an individual, who for various reasons (e.g. delays, stockouts, access, feasibility, service interruptions, etc.), is thought not to have received doses of vaccines for which they are eligible, per the national immunization schedule.

Catchup vaccination can be conducted through regular routine immunization service delivery (fixed, outreach, mobile, school-based), periodic identification of routine immunization (IRI) activities, or through innovative local strategies that ensure individuals have the opportunity to receive routine immunizations for which they are overdue and eligible.

The importance of having a catch-up vaccination strategy is more pronounced when there is an extended interruption of routine immunization services or delay of mass vaccination campaigns (e.g., due to vaccine shortages or system disruptions caused by outbreak, natural disaster, acute conflict, population displacements, insecurity, etc.). While every effort must be made to keep immunization services functioning during an emergency, unavoidable disruptions can result in a significant accumulation of susceptible individuals and may require additional, specially planned catch-up efforts to address large immunization gaps.

Leave No One Behind: Guidance for Planning and Implementing Catch-up Vaccination

WHO has developed guidance to assist national immunization programmes to establish or refine a catch-up vaccination strategy, as an essential component of the routine immunization programme.

Closing Immunization Gaps caused by COVID-19

This PPT resource outlines considerations for prioritizing strategies for restoring immunization services and and planning catch-up strategies, specifically in the context of COVID-19 and makes reference, where applicable, to more comprehensive resources available.

Closing Immunization Gaps Caused by COVID-19 (PPT) pdf, 27/08/20

Related guidance on immunization during COVID 19

Guiding principles for immunization activities during the COVID-19 pandemic: interim guidance 26 March 2020

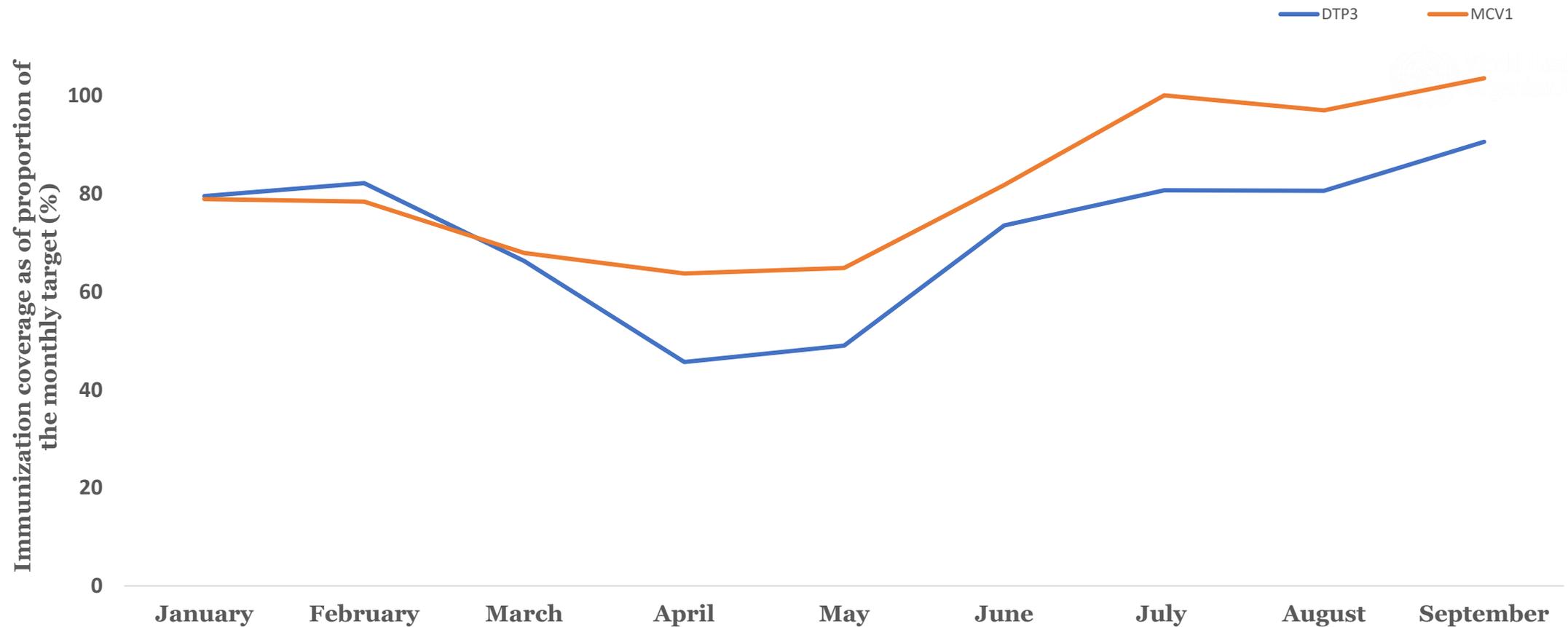
Immunization in the context of COVID-19 pandemic - FAQs 15 May 2020

Framework for decision-making implementation of mass vaccination on campaigns in the context of COVID-19 20 May 2020

Maintaining essential health services: operational guidance for the COVID-19 context 1 June 2020

Full text WHO technical guidance on COVID-19

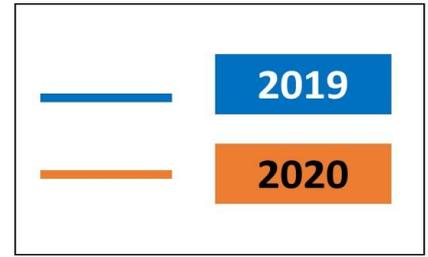
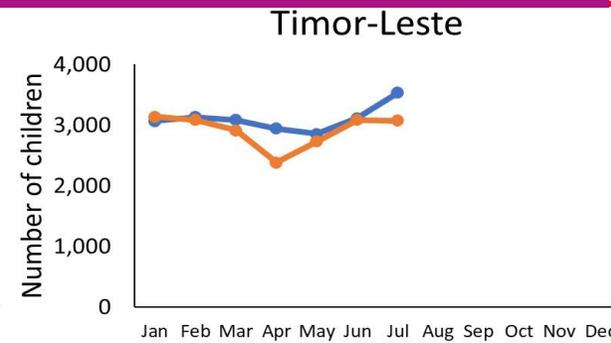
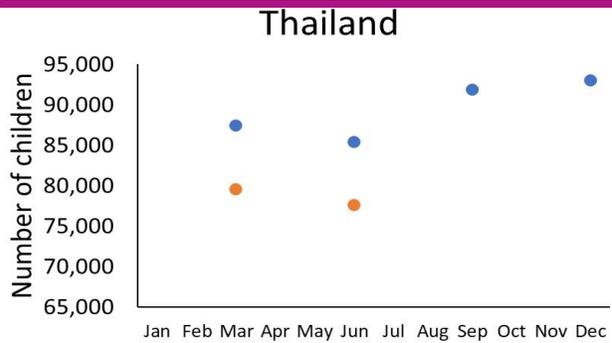
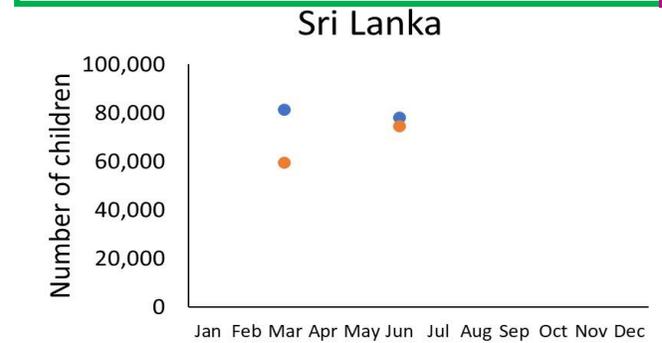
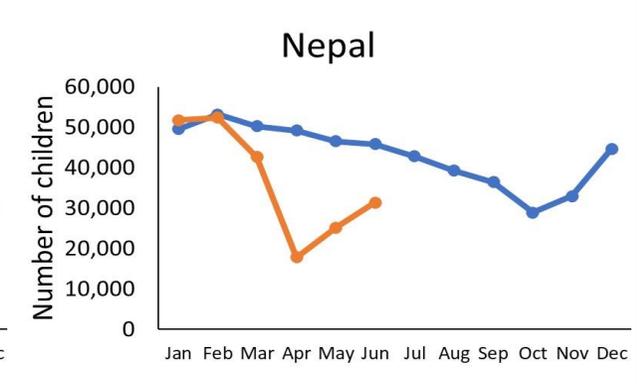
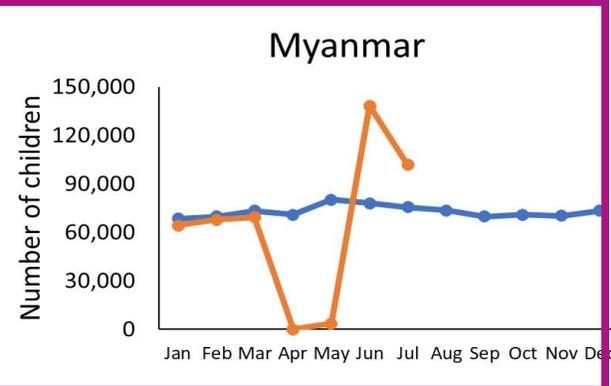
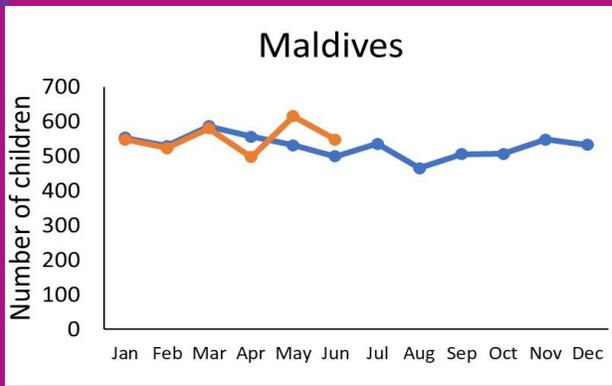
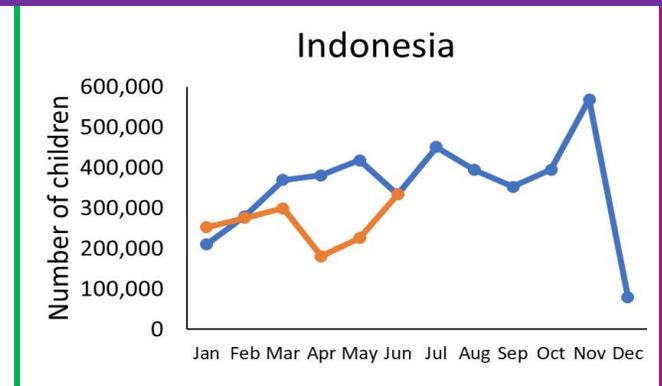
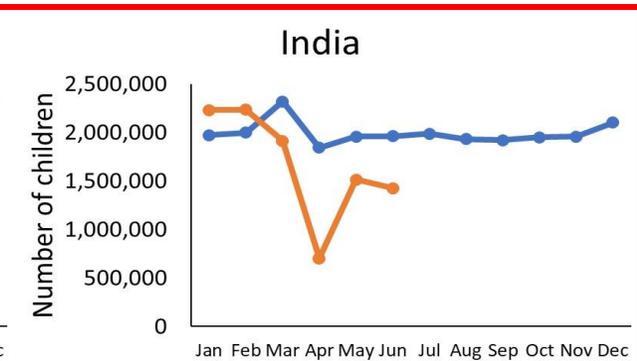
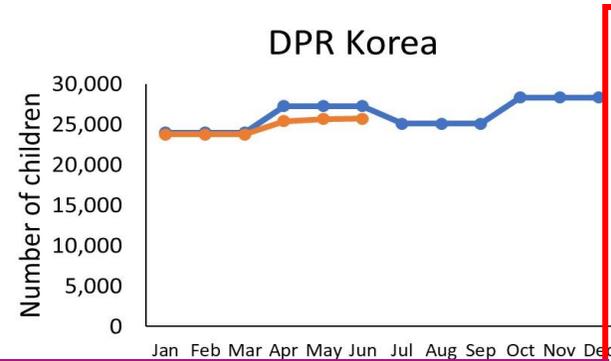
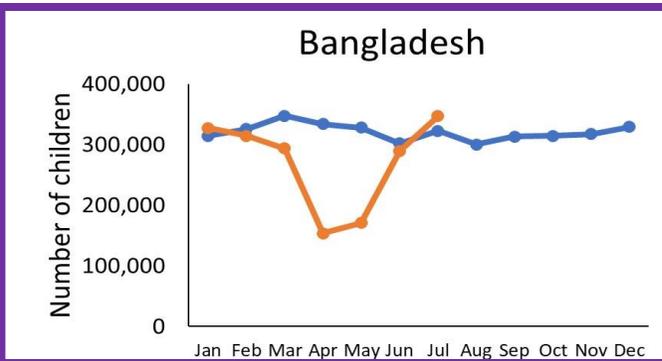
Average DTP3 and MCV1 coverage in priority countries,* Eastern Mediterranean Region, January-September 2020



DTP: Diphtheria, Tetanus and Pertussis: **MCV:** Measles containing vaccine

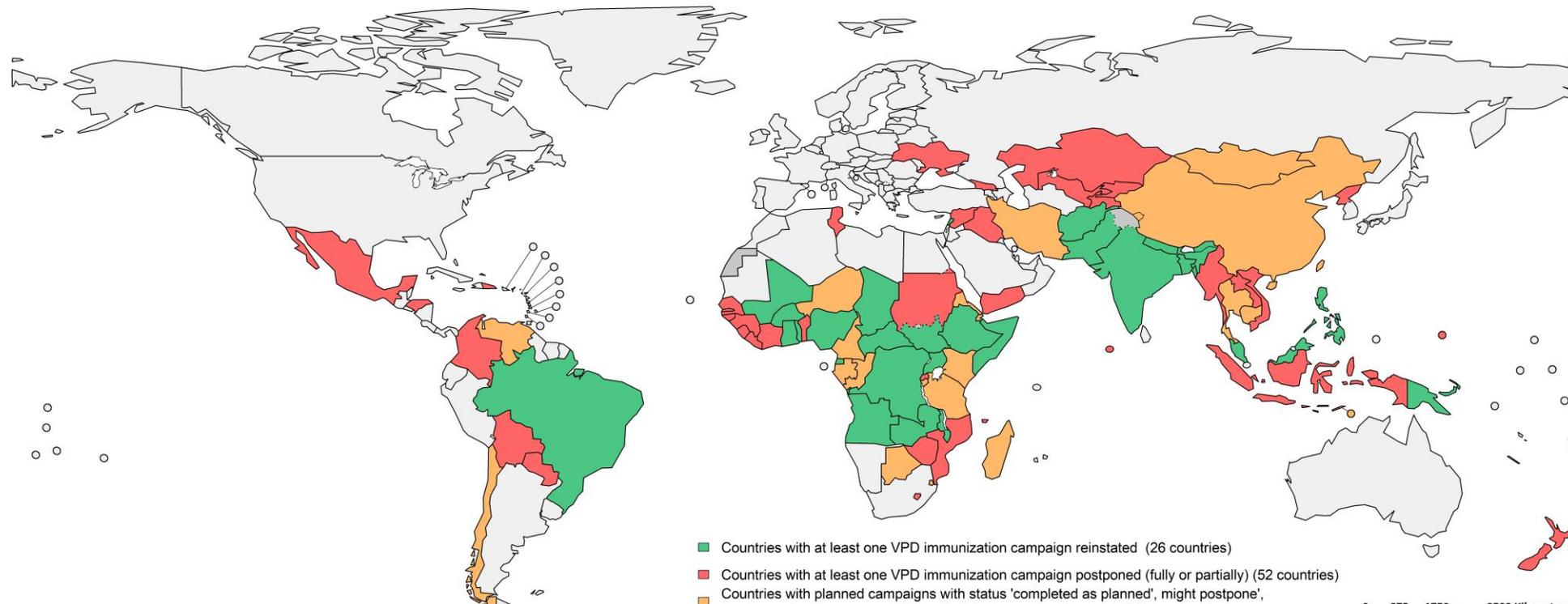
*Afghanistan, Iraq, Jordan, Pakistan, Somalia, Syria, Yemen (based on provisional monthly data reported to WHO EMRO)

Monthly Comparison of DTP3 Coverage in Countries, Southeast Asia Region, 2019 and 2020



*Quarterly data available for Sri Lanka and Thailand ; Q1 Q2, Q3 and Q4 data plotted against end of each quarter respectively
 Source: Monthly routine immunization data from member states

52 Countries with ≥ 1 Vaccination Campaign Postponed due to COVID-19, 1 February 2021



- Countries with at least one VPD immunization campaign reinstated (26 countries)
- Countries with at least one VPD immunization campaign postponed (fully or partially) (52 countries)
- Countries with planned campaigns with status 'completed as planned', 'might postpone', 'postponed - other reasons', 'cancelled', 'unknown' and 'on track' (20 countries)
- Countries with no campaign
- Not applicable

0 875 1750 3500 Kilometers

Date of slide: 2021-02-01

Map production: Immunization, Vaccines and Biologicals (IVB), World Health Organization (WHO)

Data source: WHO/IVB Repository, 1st February 2021

Disclaimer:

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area nor of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement. World Health Organization, WHO, 2021. All rights reserved

Utilized Strategies



Photos courtesy of Facebook: EPI-BENI

Institutional vaccination

Vaccination in strategic places, like pharmacies, stadiums, day care centers, cultural centers, banks, schools, work areas, grocery stores

Vaccination according to sex and ID number

Adaptation of vaccination centers and vaccination complying with security measures



Ex: Ministry of Health, Brazil

Vaccination in cars

Follow-up on vaccination and calling on absentees

Integration with other health and government programs

Health worker referrals



Photos courtesy of Facebook: EPI-BENI

Vaccination in the community

Work with community leaders

Use of social media

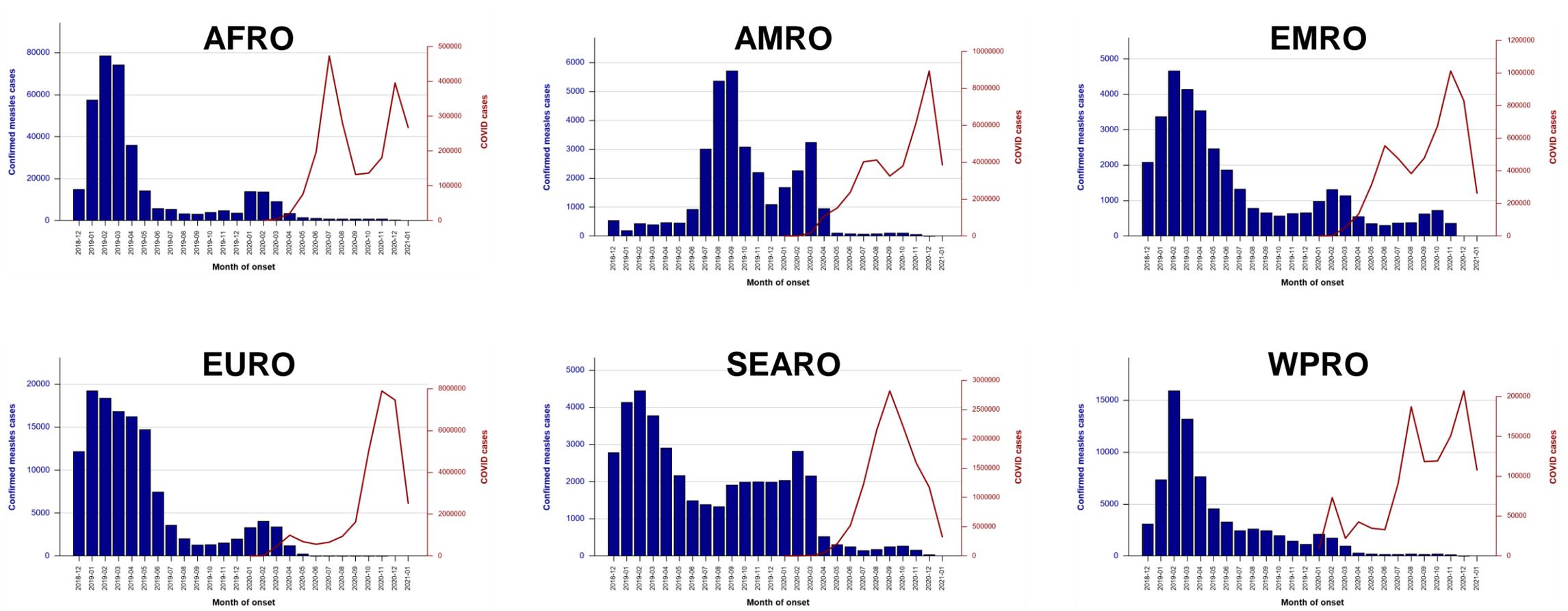
Changes in opening hours



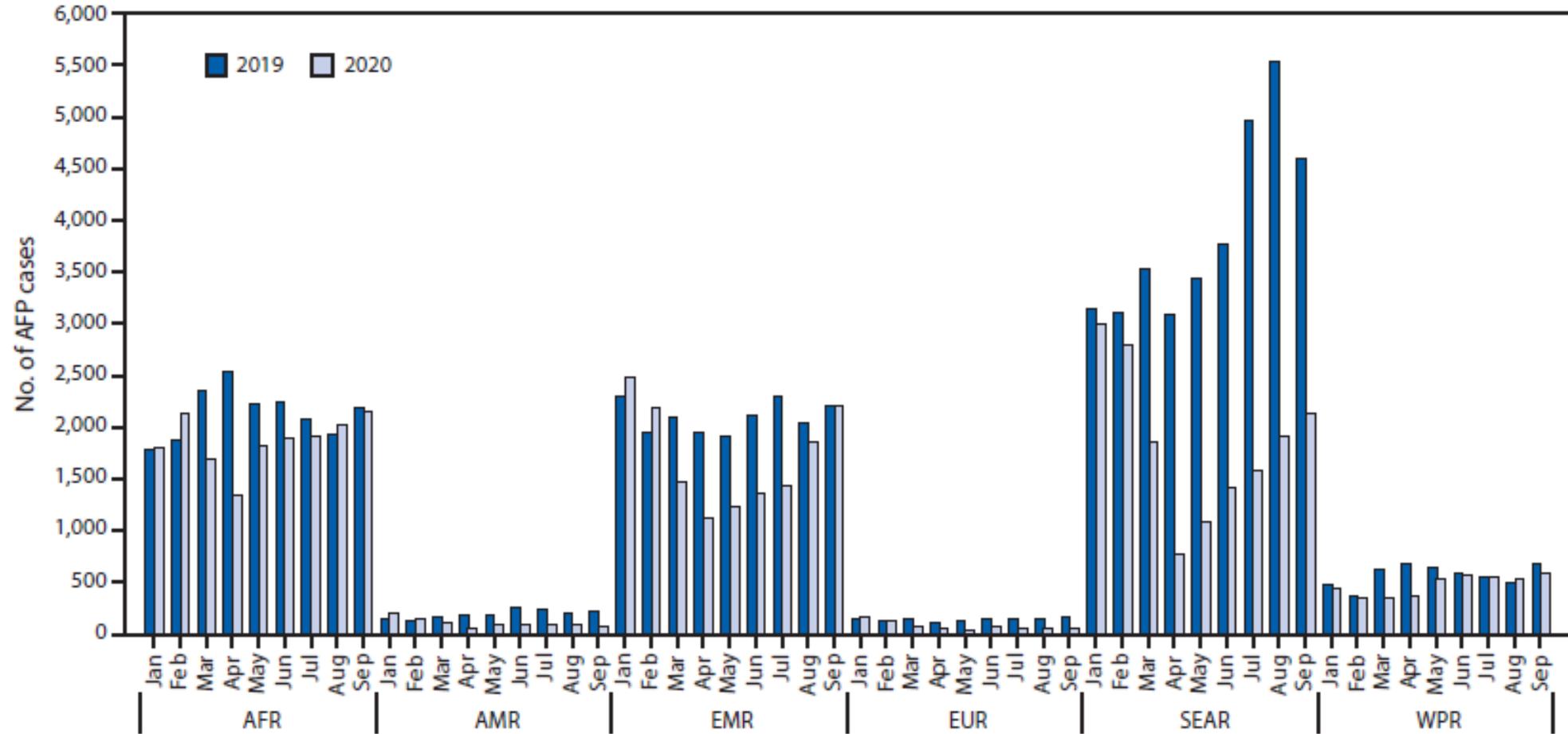
Vaccination at home

Results from the Sixth Survey on the NIP Situation in the Region of the Americas, IM/PAHO Focal Points, August 2020

Confirmed Measles and COVID-19 Cases by WHO Region



Monthly Reported Acute Flacid Paralysis Cases by WHO Region, 2019 and 2020



Abbreviations: AFR = African Region; AMR = Region of the Americas; EMR = Eastern Mediterranean Region; EUR = European Region; SEAR = South-East Asia Region; WPR = Western Pacific Region.

Reasons for Decline in Vaccine-Preventable Disease Cases

- **Real decline?**
 - **Possible decreased disease spread from COVID-19 interventions (e.g. movement restrictions, physical distancing, group size limits)**
 - **Possible post-outbreak burn out of susceptibles for measles after high burden years in 2018-2019**
- **Weaker surveillance**
 - **Fewer cases seeking in-person medical care → less samples for testing**
 - **Delayed shipping and limited supplies for testing samples**
 - **Diversion of surveillance personnel (field, lab, data) toward COVID-19 surveillance**

Summary

- **Disruptions to immunization services and surveillance due to COVID-19 reported widely in all regions**
- **More severe disruptions with outreach and campaigns (underserved populations likely more impacted)**
- **Recovery and rebuilding dependent on infection prevention and control measures and innovations (additional costs must be considered)**
- **Variable levels of recovery and catch up across countries**

Reflections on Equity and Resiliency



- **Historical emphasis on equity of coverage**
 - **Focus on providing immunization services to more underserved communities**
 - **Interventions often based on vulnerable delivery strategies (outreach, campaigns)**
- **Equity of resiliency**
 - **COVID-19 disruptions reveal inequitable vulnerabilities beyond coverage**
 - **Equal coverage in two communities may not be equitable if one is more vulnerable to disruption**
- **Equity focus needs to balance coverage goals with need to build resiliency**

Learning Agenda and Research Needs



- **Disruptions**
- **Build back better**
- **COVID-19 vaccine introduction impact**



Disruption Questions

- **More accurate description of magnitude and duration of disruptions particularly at subnational level**
- **Factors that led to service delivery disruptions**
- **Factors that led to changes in demand**

Build Back Better Questions

- **Factors that led to faster recoveries to baseline**
- **Factors that led to faster catch up after reaching baseline**
- **Impact of demand interventions to rebuild confidence**
- **Impact and scalability of innovations (*e.g.* drive-thru immunization)**
- **Factors that led to greater resiliency**

COVID-19 Vaccine Impact Questions

- **Negative impacts to coverage and equity**
 - **Immunization service disruptions?**
- **Positive impacts to coverage and equity**
 - **Use of digital technologies (*e.g.* information systems)**
 - **Cold chain investments**
 - **Service delivery innovations (*e.g.* drive-thru vaccination)**

Learning agenda to build back better from COVID-19*



Objective 1

Enhance coordination and alignment among global partners



Objective 2

Produce and share learning products



Objective 3

Promote country leadership and elevate country voices



USAID
FROM THE AMERICAN PEOPLE



Learning agenda to build back better from COVID-19*



 Objective 1

Enhance coordination and alignment among global partners

Survey to assess landscape of ongoing activities:

<https://www.jhsph.edu/ivac/projects/momentum-country-and-global-leadership-program-mcgl-usaid/>



Thank you



World Health
Organization

WHO

20, Avenue Appia
1211 Geneva

Switzerland