

October 7th, 2022

# SeroTracker: An updated snapshot of serosurveys and seroprevalence trends in the EURO region

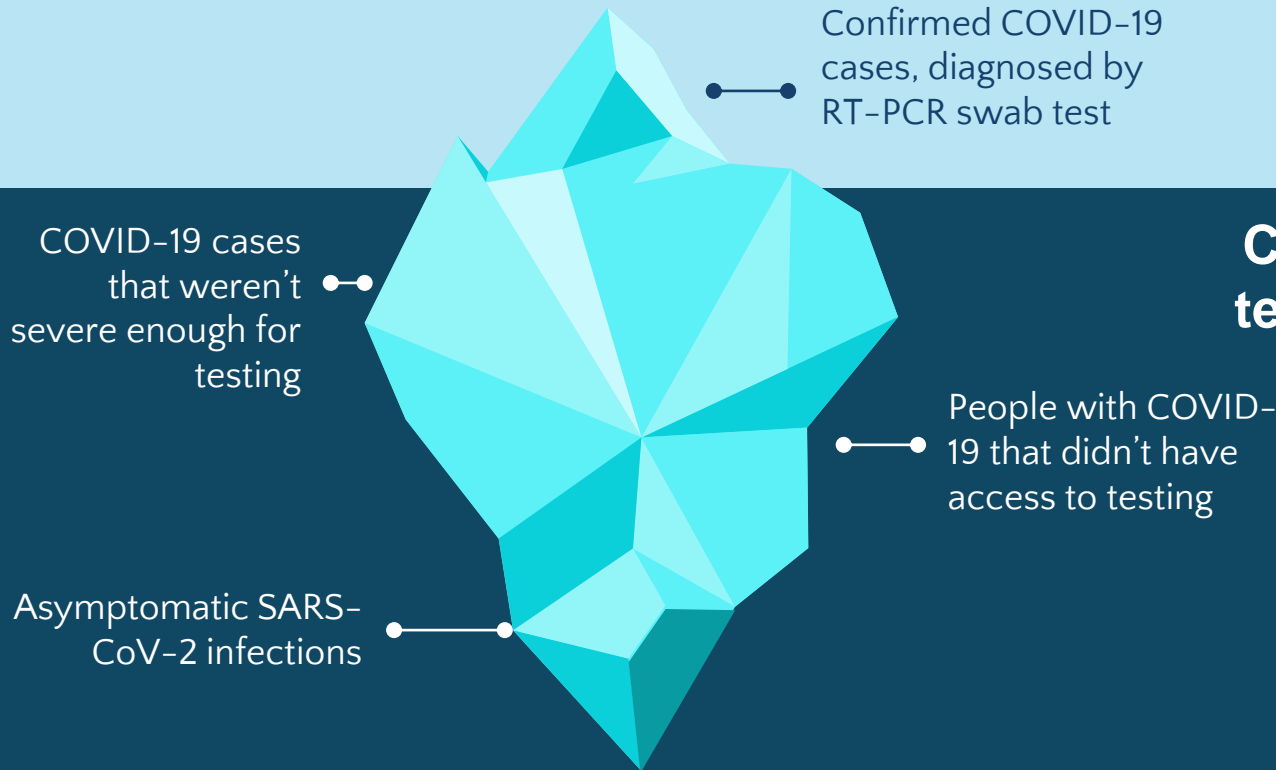
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# SeroTracker is a global dashboard and data platform for SARS-CoV-2 serosurveys, helping map the iceberg of infection

JOHNS HOPKINS  
UNIVERSITY OF MEDICINE | CORONAVIRUS  
RESOURCE CENTER

## Cases found by diagnostic testing



## Cases that serological testing can help reveal



# Our living systematic review feeds SeroTracker.com - a global COVID-19 seroprevalence dashboard and data platform

SeroTracker

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## SUMMARY STATISTICS

2035 seroprevalence studies

in 111 countries and territories

including 19,290,661 participants

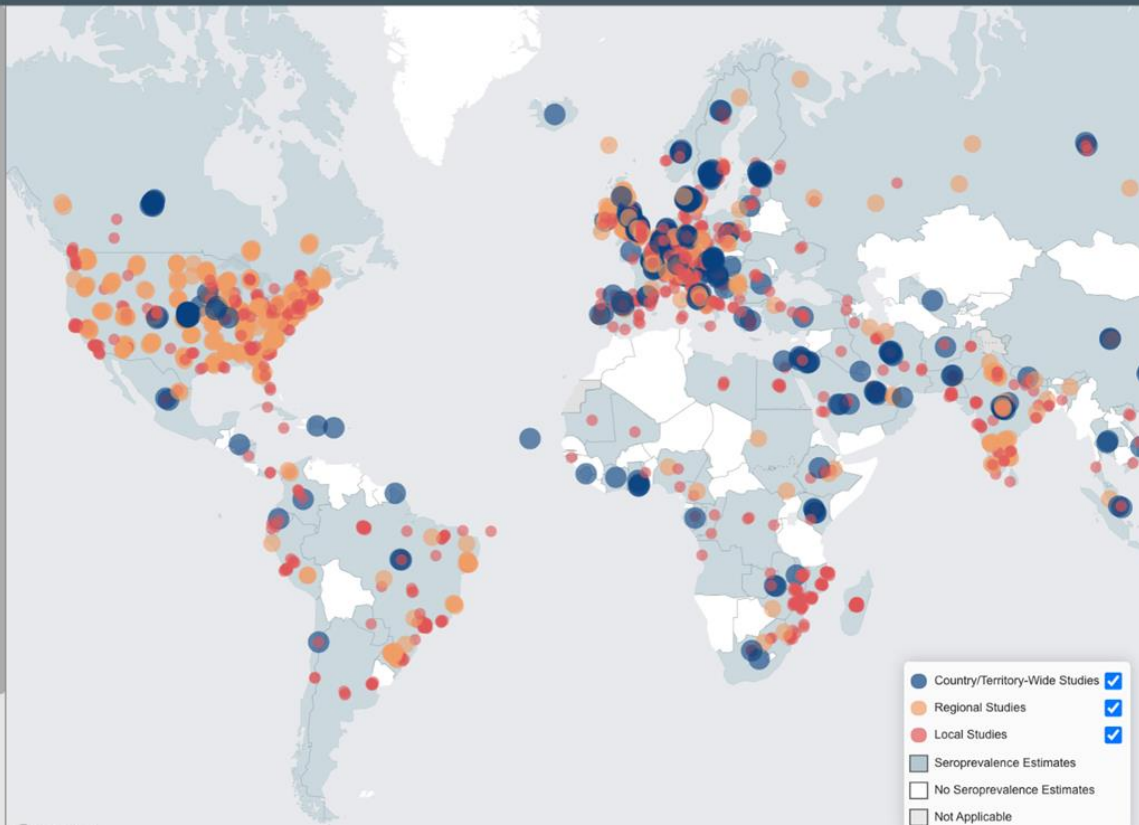
## WELCOME TO SEROTRACKER

SeroTracker is a dashboard and data platform for SARS-CoV-2 serosurveys. Antibodies against SARS-CoV-2, the virus that causes COVID-19, indicate previous infection or vaccination. We are conducting an ongoing systematic review to track serosurveys (antibody testing-based surveillance efforts) around the world, visualizing findings on this dashboard.

You can configure the data displayed using the "Filter" toolbar on the right, and view the full list of studies we are tracking on the "Data" page.



The designations employed and the presentation of the material available on this platform does not imply the endorsement of any specific whatsoever



## FILTER

### Study Information

Source Type

Overall Risk of bias

### Demographics

Population group

Sex

Age

### Test Information

Test Type

Isotypes Reported

Specimen Type

### Date Range

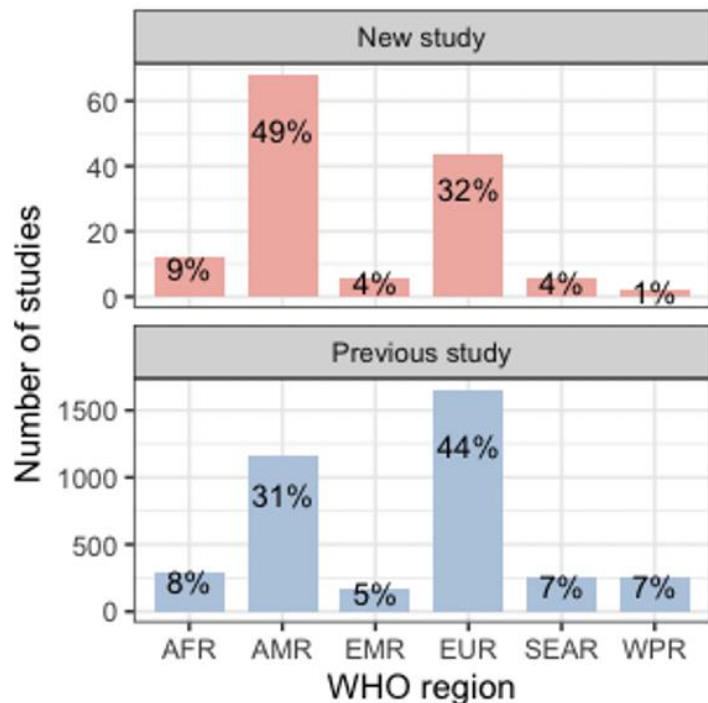
Start Date

2019/02/01

End Date

2021/07/23

# SeroTracker and the WHO Unity team provide monthly reports on total and recently published serosurvey literature



- We identified **139 new serosurveys** between August 20 - September 16 2022
- The total number of serosurveys in our database is **3940**, of which **1052 were identified as Unity Protocol-Aligned**
  - Unity Aligned = Follows the WHO Unity protocol for quality sero-epidemiological studies
- 53% of total studies were rated as a high risk of bias, followed by 38% moderate risk, 4% low risk, and 5% unclear
- **EURO studies represent 44% of all serosurveys globally.**



# There are 1702 EURO serosurveys to date

Characteristic	EUR	
	New (N = 44)	Previous (N = 1658)
Study population		
Blood donors	0	133
Health care workers and caregivers	2	414
Household and community samples	5	441
Residual sera	3	151
Pregnant or parturient women	0	43
Other	34	476

- There are **1702 total serosurveys** in the EURO region
- **436 of these are Unity-Aligned**
- The country with the most serosurveys published is the United Kingdom
- 57% of EURO studies were rated as high risk of bias, followed by 34% moderate risk of bias, and 4% low risk of bias

# Our full monthly literature updates are also available on [SeroTracker.com/en/Publications](https://SeroTracker.com/en/Publications), broken down by region

## Literature Update Reports

Monthly overviews and updates on trends in serosurvey literature and WHO-supplied metrics

### Serotracker Key Insights from Mar 5, 2022 - Apr 1, 2022

Published: Apr 7, 2022

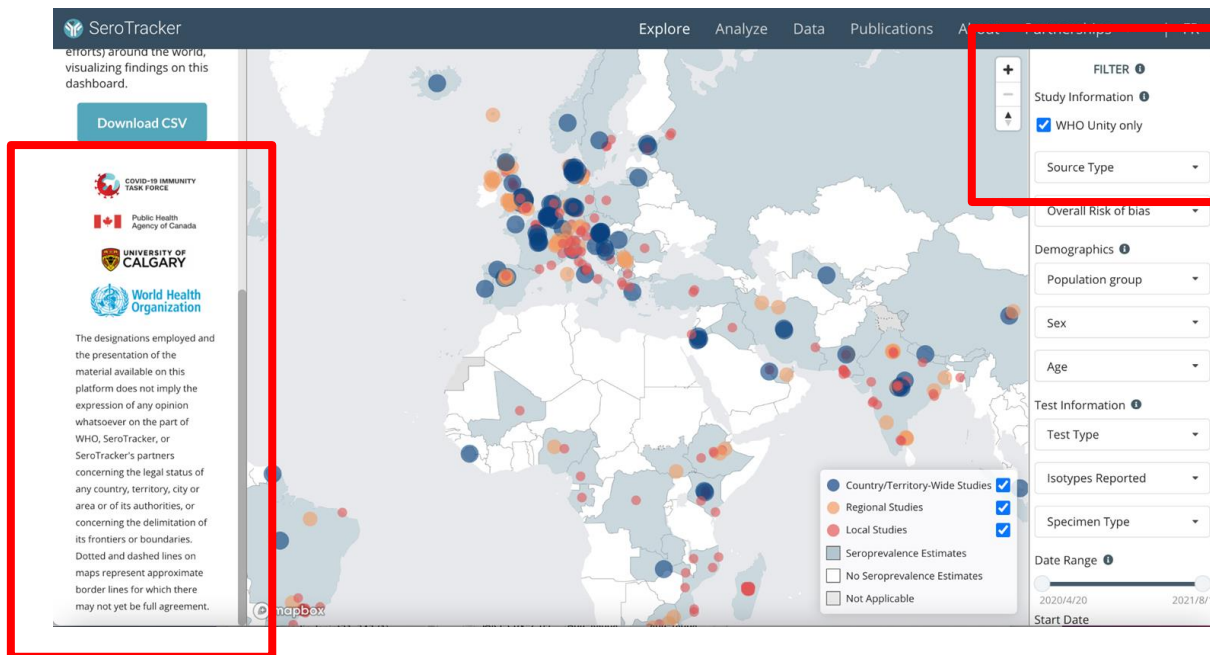
<b>New serosurveys identified</b>	<b>172</b>
African	22
Eastern Mediterranean	3
European	61
Region of the Americas	63
South-East Asia	13
Western Pacific	10
Non-Member States	0
<b>New sources added</b>	<b>106</b>

### Serotracker Key Insights from Feb 5, 2022 - Mar 4, 2022

Published: Mar 10, 2022

<b>New serosurveys identified</b>	<b>310</b>
African	29
Eastern Mediterranean	4
European	185
Region of the Americas	58
South-East Asia	21
Western Pacific	13
Non-Member States	0
<b>New sources added</b>	<b>128</b>

# WHO Unity and SeroTracker have partnered to highlight seroprev studies aligned with the Unity serosurvey protocol



To highlight **Unity-aligned studies on SeroTracker**, we:

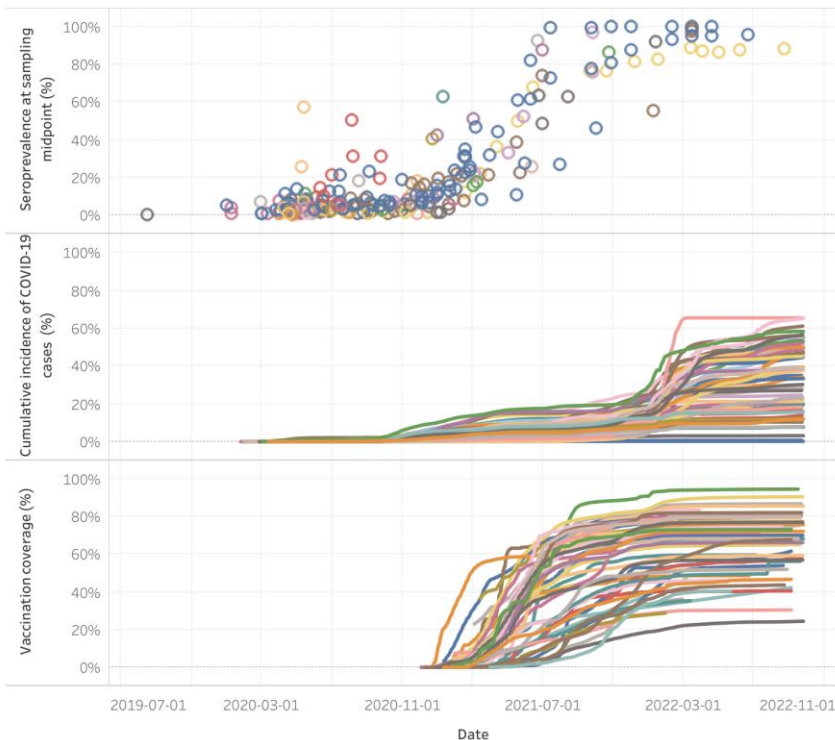
1. Made SeroTracker compliant with WHO mapping guidelines
2. Co-branded the SeroTracker dashboard
3. Identified published **Unity-aligned studies** in the SeroTracker database
4. Created **SeroTracker.com/Unity** to highlight these studies to end users

# Visualize seroprevalence over time on the dashboard

## 'Analyze' Tab

### Comparing Seroprevalence to Confirmed Cases and Vaccine Coverage Over Time by Country / Territory

Seroprevalence has increased over time with an increasing portion of the population being infected or vaccinated.



#### Date

2019-08-16

2022-09-25



#### Antibody Target

- (All)
- Nucleocapsid (N-protein) only
- Show Case and Vaccination Data
- Spike \*
- Unspecified
- Whole-virus antigen

#### WHO Region

- (All)
- Null
- AFR
- AMR
- EMR
- EUR
- SEAR
- WPR

#### Country / Territory

- (All)
- Afghanistan
- Albania
- Algeria
- Andorra
- Angola
- Anguilla
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia

- Estimates can be filtered by **date**, **antibody target**, **WHO region**, **country**, and others.
- This feature allows users to look at trends in seroprevalence, confirmed cases, and vaccine coverage over time in a **specific country**.

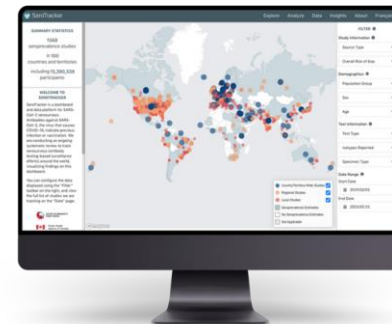


# Using SeroTracker, we synthesized serosurvey data to map global and regional seroprevalence over time

**Data:** National or subnational, gen pop serosurveys at low or moderate risk of bias, sampling between Jan 2020 and Aug 2022 (944 studies in 90 countries)

## Methods:

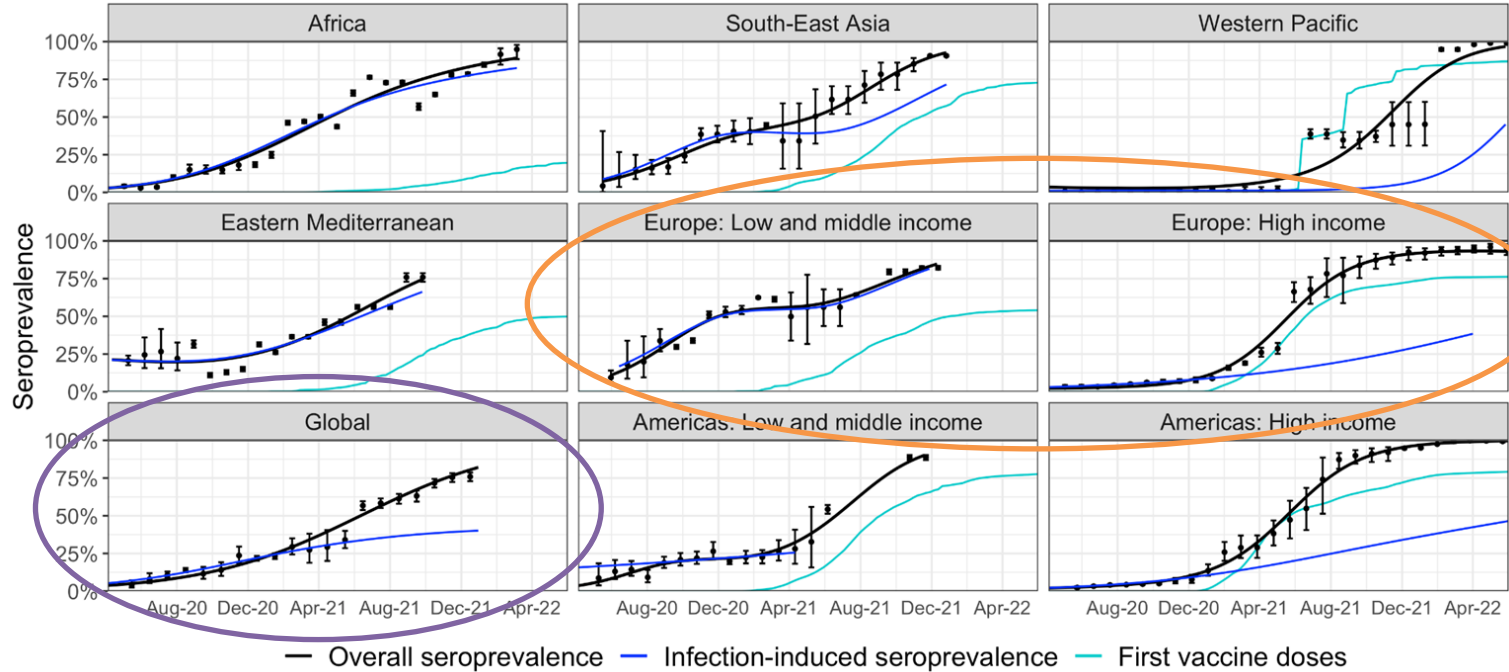
- Calculated monthly overall and infection-acquired seroprevalence by meta-analyzing serosurveys by sampling mid-point date in each country
- Estimated seroprevalence for each WHO region as the population-weighted average of country estimates
- Omicron-era estimates available in most regions



Bergeri I, Whelan M, Ware H, et al. Global SARS-CoV-2 seroprevalence: a systematic review and meta-analysis of standardized population-based studies from Jan 2020-May 2022. 2022. doi:10.1101/2021.12.14.21267791 (now accepted for publication in PLOS Medicine)

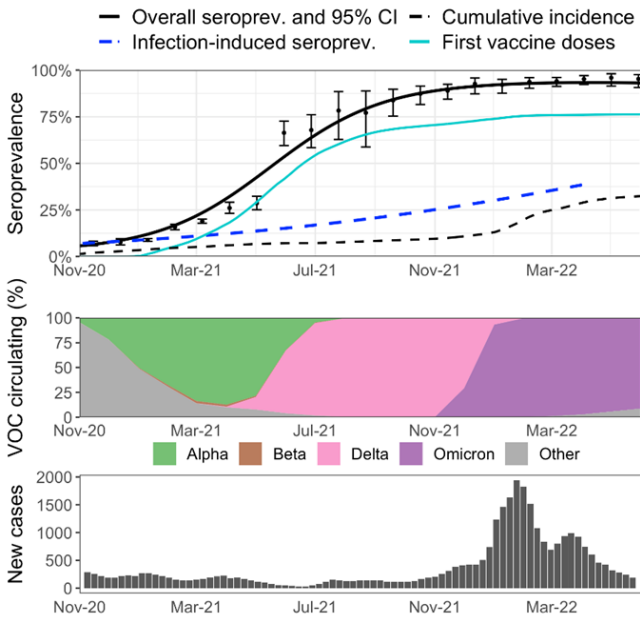
# Overall and infection-induced estimates of seroprevalence by WHO region show considerable region-to-region variation

One quarter of the world remained susceptible to severe disease in Dec 2021



**Infection-induced seroprevalence** was estimated using anti-N serosurveys in countries where S protein vaccines were used, and a formula based on vaccination where inactivated vaccines were used: Institute for Health metrics and Evaluation (IHME) (2021) COVID-19: Estimating the historical time series of infections. IHME, University of Washington, Seattle, Washington, USA.

# In HIC, overall seroprev rose steeply in 2021 with vaccination and remained stable in 2022, while infections increased during Omicron

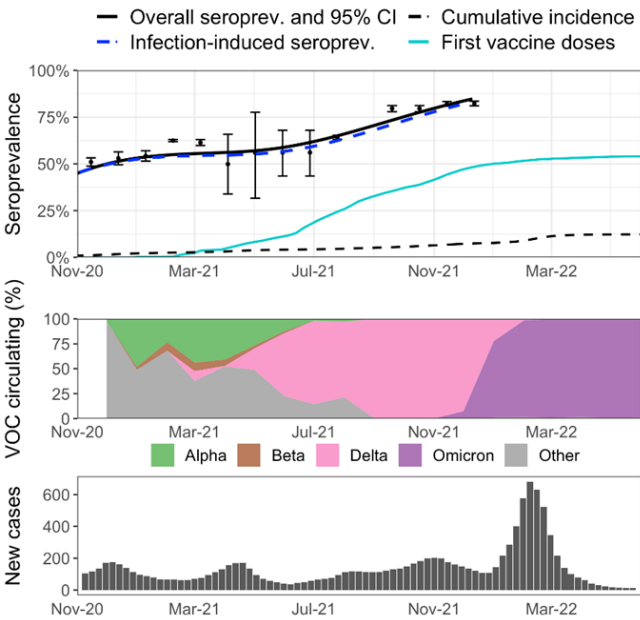


Number of studies

	21 Q1	21 Q2	21 Q3	21 Q4	22 Q1	22 Q2
Austria		1		3	3	1
Belgium		1				
Czechia	1	1				
Denmark	4					
Estonia	2	3	1	2	2	3
Finland	13	13	12	10		
France	3					
Germany		1				
Holy See	1					
Ireland					9	
Norway	2		2			
Portugal	1			1		
Spain		2				
Sweden	2	4	2			
Switzerland	4	1	1		5	
The United Kingdom	21	15	8	10	12	5
	21 Q1	21 Q2	21 Q3	21 Q4	22 Q1	22 Q2

- Higher number of studies suggests **more robust** seroprev. estimates in that quarter
- Variants of concern (VOC) circulating (%) from GISAID data
- New cases from WHO dashboard
- First vaccine doses from OWID

# In LMIC, overall seroprev continued rising in 2021, driven by infection and vaccination, with further increases since Omicron likely



Number of studies

	21 Q1	21 Q2	21 Q3	21 Q4	22 Q1	22 Q2
Albania		1				
Belarus	1	2		1		
Kazakhstan	1					
Kyrgyzstan		1				
Russian Federation				1		

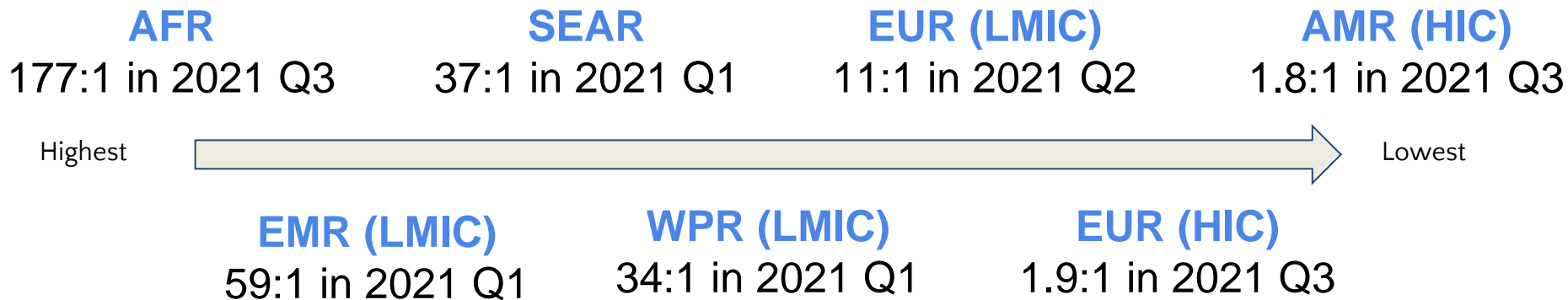
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# Confirmed cases are largely underestimated, varying by region

- **Seroprevalence estimated number of infections : confirmed cases** (laboratory confirmed), most recent available

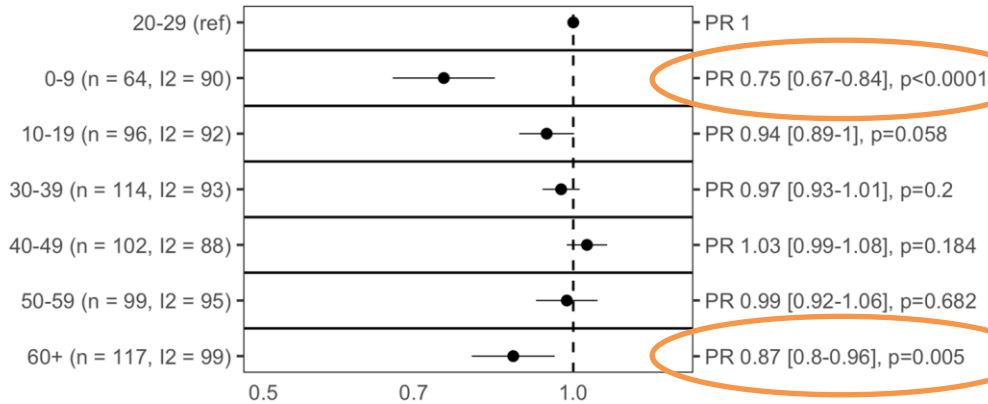
## GLOBAL

### 10.5:1 in 2021 Q3



# Children 0-9 and adults 60+ were associated with lower seroprevalence compared to adults 20-29

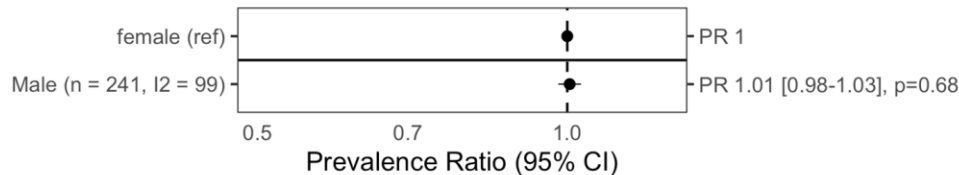
Subgroup comparison: Age



- Ages 0-9 associated with lower seroprevalence (PR 0.75) and ages 60+ (PR 0.87), compared to adults 20-29

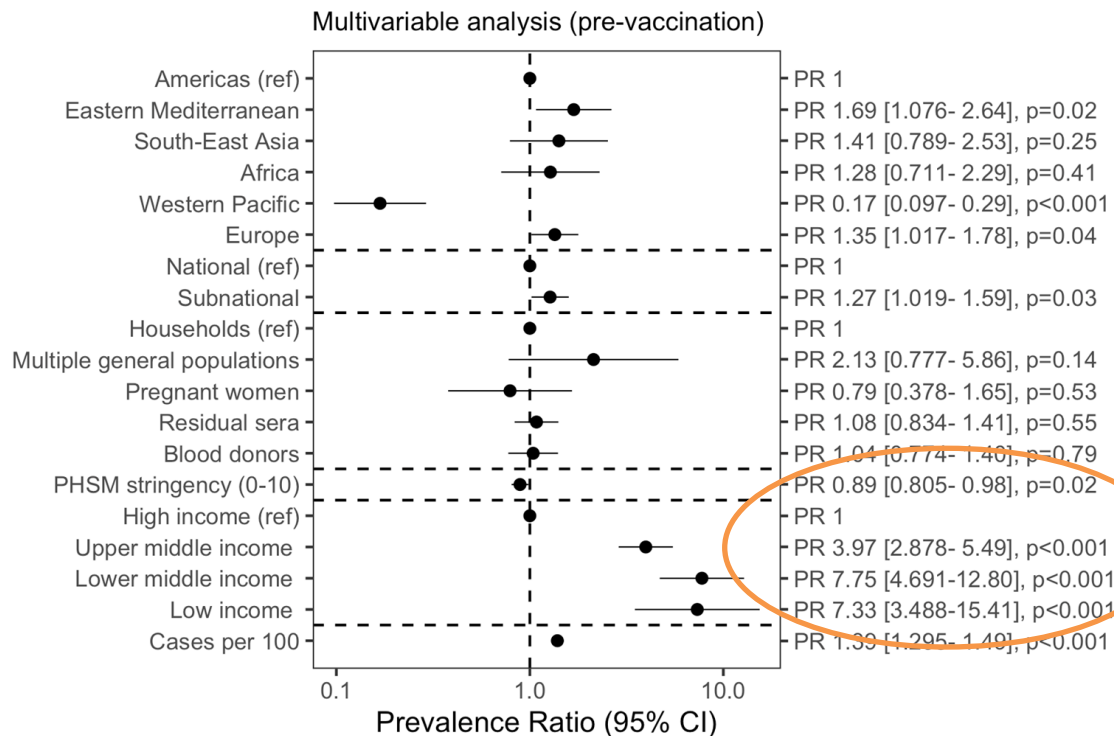
- No association by sex was found

Subgroup comparison: Sex



# PHSM and income affected seroprevalence

- More stringent public health and social measures (PHSM) associated with lower seroprevalence, PR 0.89
- Low and middle income associated with higher seroprevalence compared to high income



# We are grateful for the contributions of our current team members, alumni, funders, and partners



Rahul Arora  
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Jane Yuan



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# Questions?



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Web: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/early-investigations>

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