



Target  
population of  
COVID-19 adult  
vaccination in  
Europe:  
evolution and  
current status

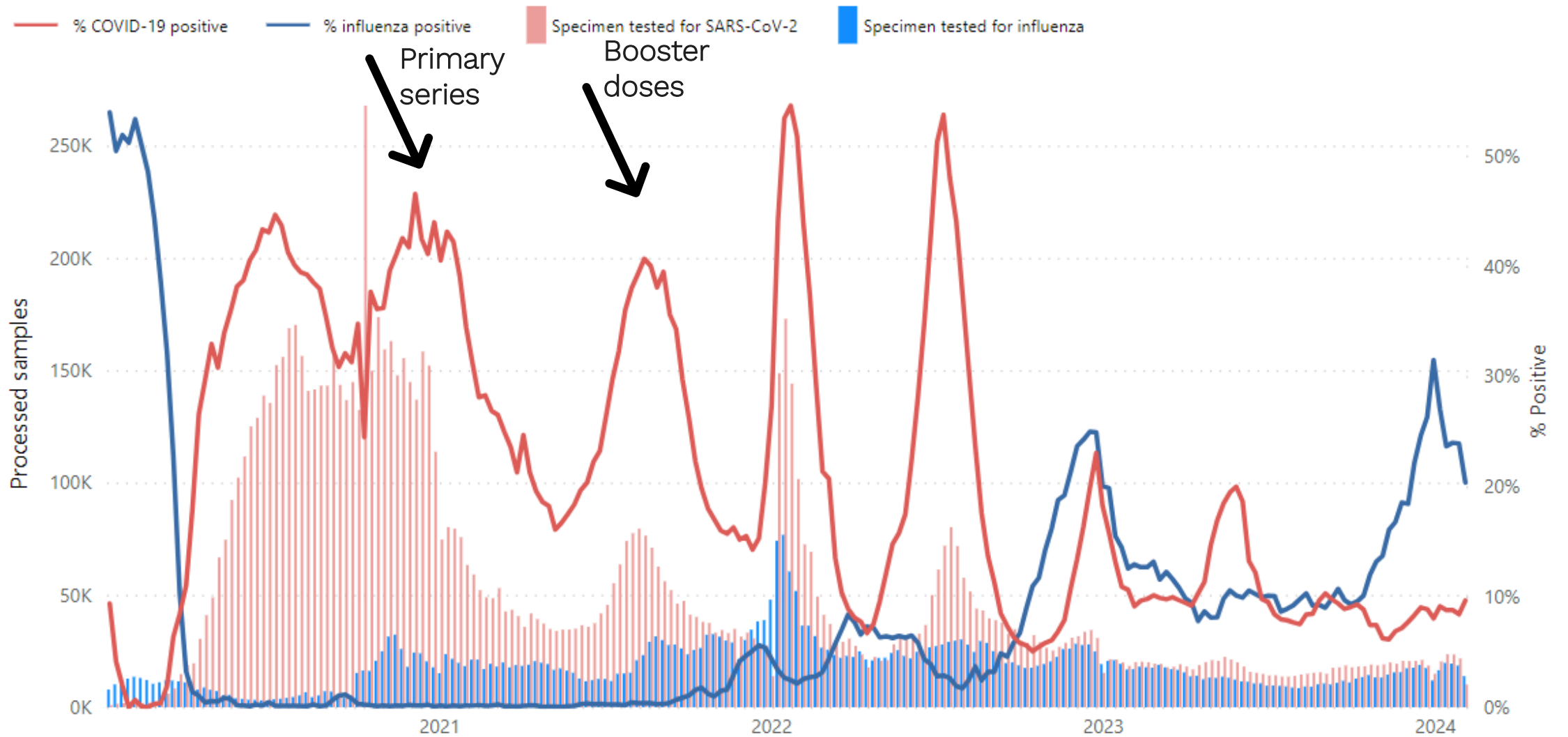
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Terveysten ja  
hyvinvoinnin laitos

18.4.2024



# Global SARS-CoV-2 and influenza +



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Data source: FluNet ([www.who.int/toolkits/flu-net](http://www.who.int/toolkits/flu-net)). Global Influenza Surveillance and Response System (GISRS). Data as of 11 February 2023, generated on 14 February 2023.



## Strategy to Achieve Global Covid-19 Vaccination by mid-2022

# The Global COVID-19 Vaccination Strategy

### Goal and Targets

“The **immediate goal** of the global COVID-19 vaccination strategy is to **minimize deaths, severe disease** and overall disease burden; **curtail the health system impact**; fully **resume socio-economic activity**; and **reduce the risk of new variants.**”

Source: <https://www.who.int/publications/m/item/strategy-to-achieve-global-covid-19-vaccination-by-mid-2022>

# Roadmap Revisited Sept2023 And March2024



## WHO SAGE ROADMAP FOR PRIORITIZING USE OF COVID-19 VACCINES

An approach to optimize the global impact of COVID-19 vaccines based on public health goals, global and national equity, and vaccine access and coverage scenarios

First issued: 20 October 2020

Latest update: 19 January 2022



“... **averting severe disease and deaths** and **protecting health systems** remain the **primary objectives** of vaccine use in the context of the global COVID-19 response. This Roadmap **also considers** vaccine use in **resuming socioeconomic recovery**, particularly the **priority** of maintaining uninterrupted education to **keep children connected and learning.**”

In the beginning # vaccines limited ->  
prioritization made according to  
SARS-CoV-2 risk categorization and other  
principles (ethical, logistics)  
countries used own data and/or literature

1. Those in highest risk
2. Those in high risk
3. Those with medium risk
4. Those with low risk





# Predictors of hospitalisation and death due to SARS-CoV-2 infection in Finland: A population-based register study with implications to vaccinations



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## ABSTRACT

**Introduction:** The aim of this study was to investigate how age and underlying medical conditions affect the risk of severe outcomes following SARS-CoV-2 infection and how they should be weighed while prioritising vaccinations against COVID-19.

**Methods:** This population-based register study includes all SARS-CoV-2 PCR-test-positive cases until 24 Feb 2021, based on the Finnish National Infectious Diseases Register. The cases were linked to other registers to identify presence of predisposing factors and severe outcomes (hospitalisation, intensive care treatment, death). The odds of severe outcomes were compared in those with and without the pre-specified predisposing factors using logistic regression. Furthermore, population-based rates were compared between those with a given predisposing factor and those without any of the specified predisposing factors using negative binomial regression.

**Results:** Age and various comorbidities were found to be predictors of severe COVID-19. Compared to 60–69-year-olds, the odds ratio (OR) of death was 7.1 for 70–79-year-olds, 26.7 for 80–89-year-olds, and 55.8 for  $\geq 90$ -year-olds. Among the 20–69-year-olds, chronic renal disease (OR 9.4), malignant neoplasms (5.8), hematologic malignancy (5.6), chronic pulmonary disease (5.4), and cerebral palsy or other paralytic syndromes (4.6) were strongly associated with COVID-19 mortality; severe disorders of the immune system (8.0), organ or stem cell transplant (7.2), chronic renal disease (6.7), and diseases of myoneural junction and muscle (5.5) were strongly associated with COVID-19 hospitalisation. Type 2 diabetes and asthma, two very common comorbidities, were associated with all three outcomes, with ORs from 2.1 to 4.3. The population-based rate of SARS-CoV-2 infection decreased with age. Taking the 60–69-year-olds as reference, the rate ratio was highest (3.0) for 20–29-year-olds and  $< 1$  for 70–79-year-olds and 80–89-year-olds.

**Conclusion:** Comorbidities predispose for severe COVID-19 among younger ages. In vaccine prioritisation both the risk of infection and the risk of severe outcomes, if infected, should be considered.

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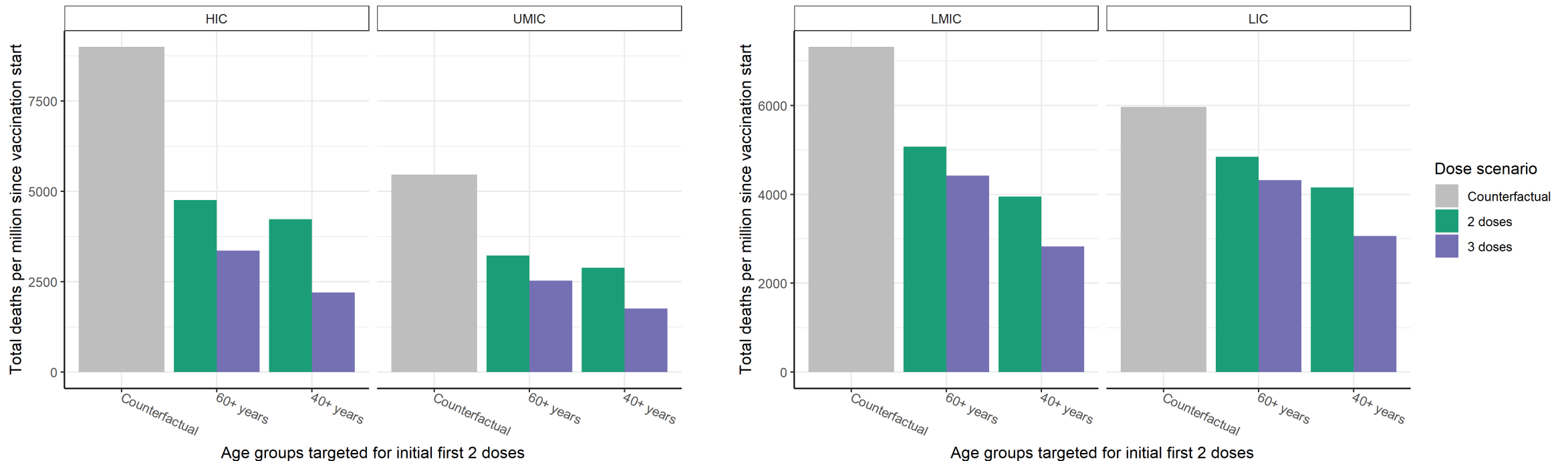


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# Tradeoff between boosters for older populations vs. primary doses for younger populations

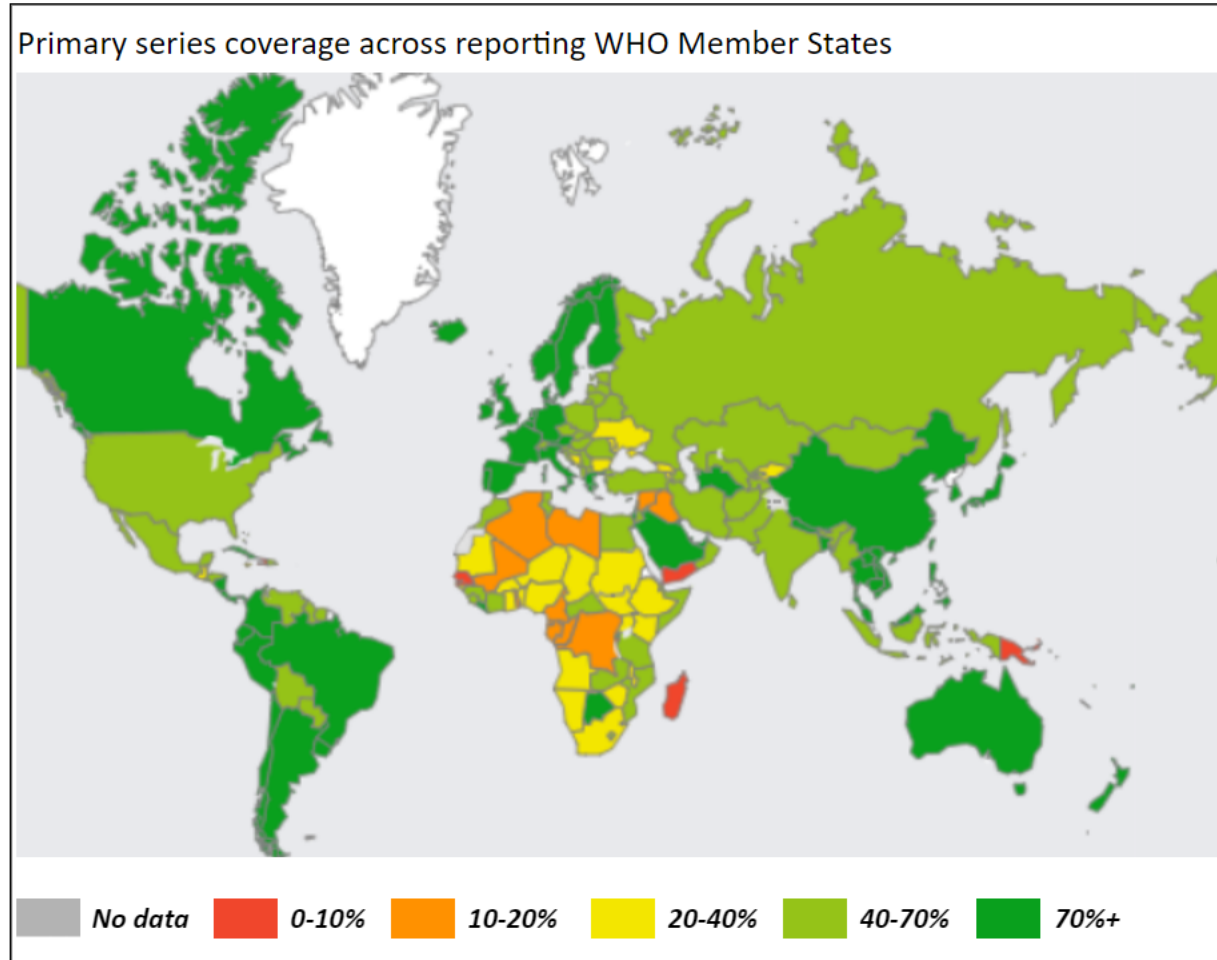
## Preliminary modelling results

- Higher impact (i.e. fewer deaths) predicted by switching to booster doses in older adults (■) after 6 months (defined as either 'over 60' or 'over 40'), rather than using those doses for primary vaccination of younger age-groups (■) and both better than no vaccine (■)
- This finding is consistent across country income strata, shown below (i.e. variation in demographics), and across various assumptions about underlying infection induced immunity rates (not shown)



*Note: more doses needed in 40+ years scenario compared to 60+ years scenario*

# Total population coverage across reporting WHO Member States



WHO region	Primary series coverage	Booster coverage
AFR	33 %	6 %
AMR	72 %	42 %
EMR	52 %	20 %
EUR	65 %	35 %
SEAR	70 %	22 %
WPR	86 %	55 %
<b>Total</b>	<b>67 %</b>	<b>32 %</b>

Income group	Primary series coverage	Booster coverage
1) LIC	31 %	5 %
2) LMIC	62 %	20 %
3) UMIC	77 %	46 %
4) HIC	76 %	49 %
<b>Total</b>	<b>67 %</b>	<b>32 %</b>

**13.6bn**

doses of COVID-19 vaccines administered globally since rollout start

**67 %**

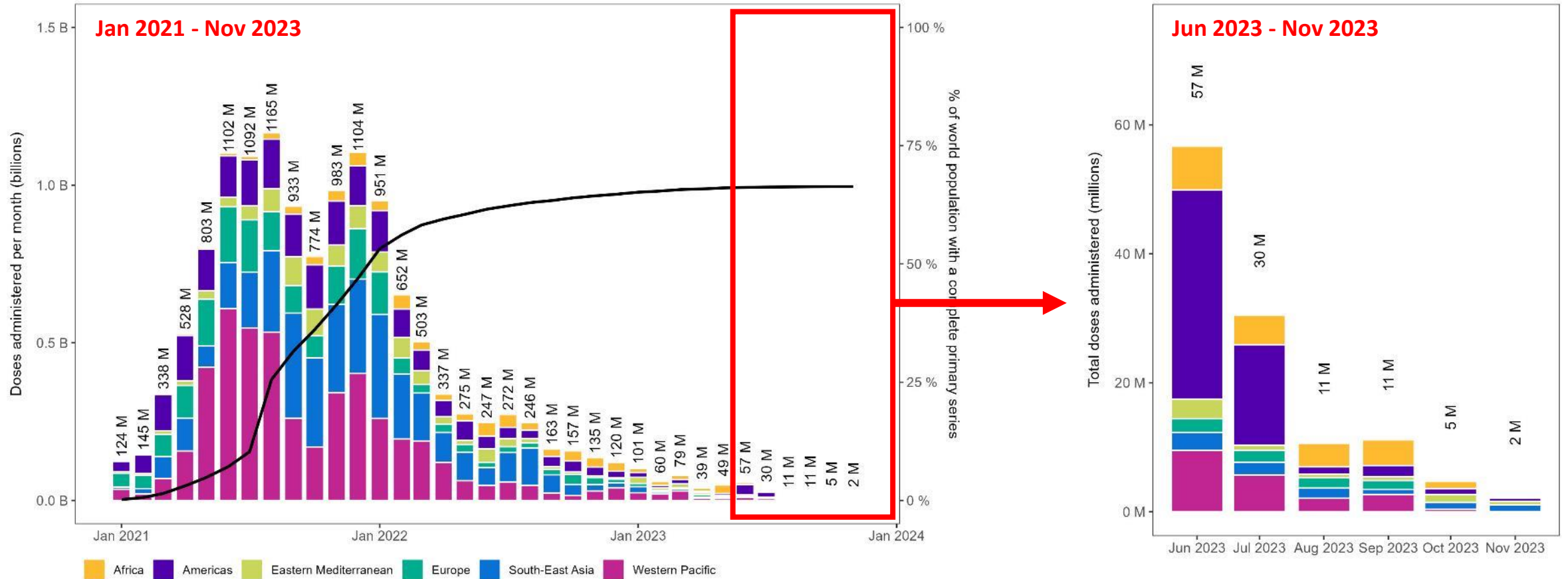
of total population with a complete primary series across WHO MS

**32 %**

of total population with a booster dose across WHO MS

Sources: WHO COVID-19 vaccine administration data. Notes: Cook Islands and Niue are not categorized in an income group by the World Bank.

# Uptake has declined substantially since its peak in late 2021 – 116 million doses were administered during the Jun – Nov 2023 period



Sources: WHO COVID-19 vaccine administration data.





## Coronavirus Disease (COVID-19): Recommended vaccinations

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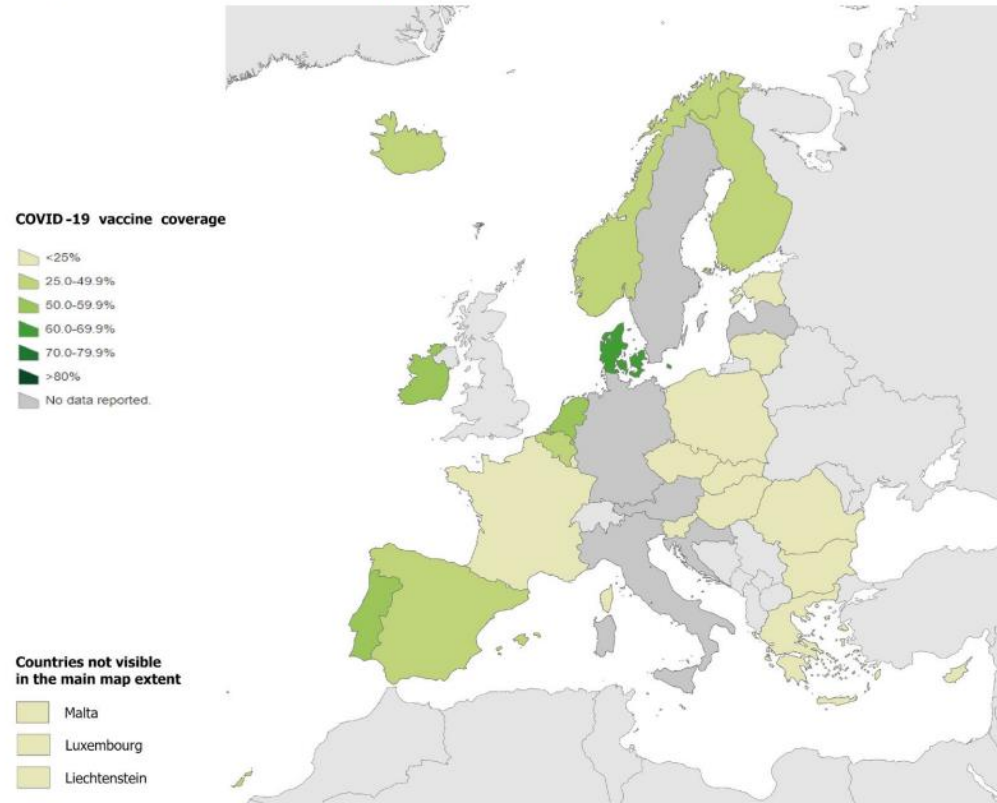
# Present recommendations of SARS-CoV-2 vaccinations in Europe; there are differences

- Age limit of the recommendation to the elderly mostly  $\geq 65$  (coadmin w/SIV)
- Spring boosting or not and if yes, to whom
- Need for annual boosters to social and health care workers
- Which special medical risk groups should receive boosters
- Pregnancy
- Recommended interval between doses and infection  $>$  dose
- Is covid-19 infection considered as a "dose" or not
- Vaccine availability in pharmacy for individual purchase

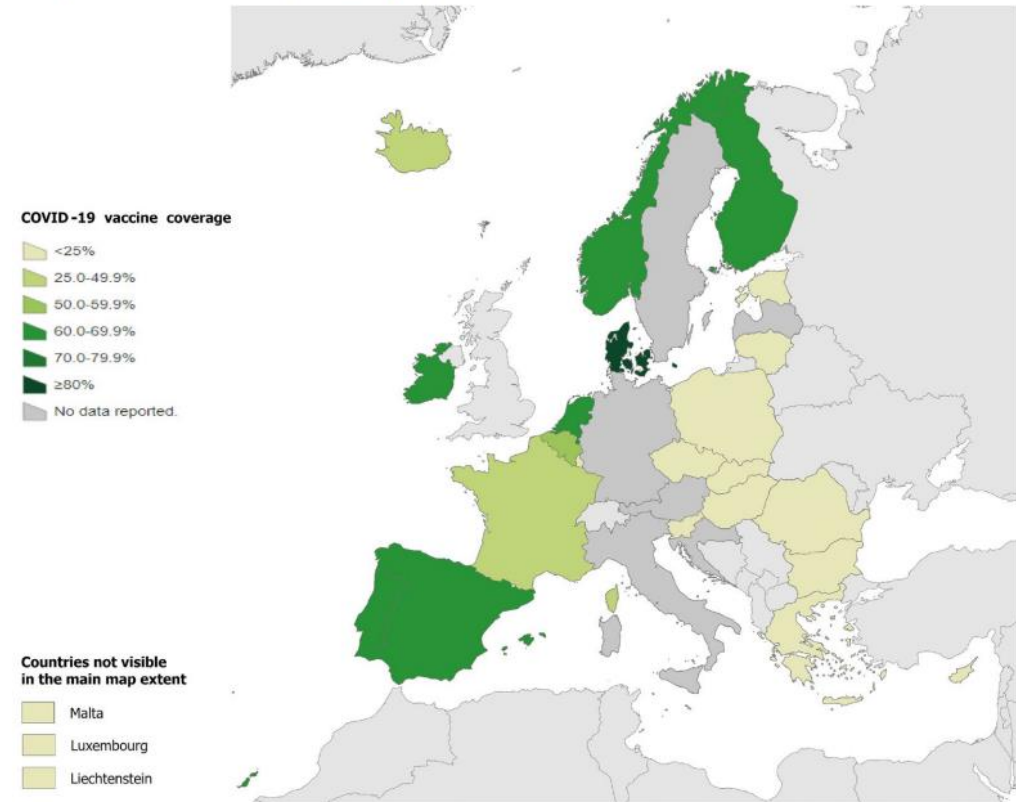


# Covid-19 vaccine coverage 2023-24

**Figure 1.** COVID-19 vaccine coverage among people aged 60 years and above, 24 EU/EEA countries, 1 September 2023 to 15 January 2024



**Figure 2.** COVID-19 vaccine coverage among people aged 80 years and above, 24 EU/EEA countries, 1 September 2023 to 15 January 2024





# Coverage in target groups

# 2023 2024

**Table 2. COVID-19 vaccine coverage by target group, 24 EU/EEA countries, 1 September 2023 to 15 January 2024**

Country <sup>a</sup>	Aged 60–69 years <sup>b</sup>	Aged 70–79 years	Aged 80 years and above	Healthcare workers	Individuals with chronic conditions	Pregnant women
Belgium	37.0%	55.6%	57.2%	20.9%	NDR	NDR
Bulgaria	1.3%	2.9%	2.5%	0.6%	NDR	NDR
Cyprus	5.4%	14.9%	19.3%	NDR	NDR	NDR
Czechia	6.6%	13.2%	15.8%	6.9%	1.9%	NDR
Denmark	43.5%	80.4%	88.2%	NDR	NDR	NDR
Estonia	8.4%	14.1%	13.5%	NDR	NDR	NDR
Finland	31.3%	61.6%	61.5%	NDR	NDR	NDR
France	15.4%	30.8%	34.6%	11.7%	NDR	NDR
Greece	3.6%	5.6%	4.4%	2.8%	NDR	NDR
Hungary	0.2%	0.3%	0.3%	NDR	NDR	NDR
Iceland	25.7%	43.3%	46.2%	NDR	NDR	NDR
Ireland	37.1%	59.2%	67.7%	14.4%	NDR	18.3%
Liechtenstein	3.4%	6.9%	11.5%	NDR	NDR	NDR
Lithuania	1.5%	1.0%	1.0%	NDR	NDR	NDR
Luxembourg	7.5%	13.0%	16.7%	NDR	NDR	NDR
Malta	0.8%	0.5%	1.2%	NDR	NDR	NDR
Netherlands <sup>c</sup>	38.8%	63.2%	67.2%	NDR	NDR	NDR
Norway	29.6%	60.2%	60.8%	NDR	NDR	NDR
Poland	2.1%	4.2%	2.7%	NDR	NDR	NDR
Portugal	41.0%	57.6%	62.1%	NDR	NDR	NDR
Romania	0.01%	0.01%	0.01%	NDR	NDR	NDR
Slovakia	1.1%	2.0%	1.6%	NDR	NDR	NDR
Slovenia	2.7%	6.1%	8.3%	NDR	NDR	NDR
Spain	29.6%	49.3%	61.5%	13.0%	5.4%	6.5%

*NDR: no data reported*

<sup>a</sup> Countries that reported for a period other than 1 September 2023 to 15 January 2024 were: Belgium, Bulgaria.



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# What will happen next fall 2024? And thereafter ?

- Will there be a further tailored covid-19 vaccine ?  
WHO TAG CO VAC met 15-16th April, EMA will make decision in April
- Which vaccines will be available ?  
EU Joint Purchase Agreement vaccines will be available until approx 12/2025
- Which target groups will countries consider and on what bases ?
- Will covid-19 vaccines become part of NIP / to some risk groups ? NNV, CEA

# Additional literature

thanks to ECDC

- This ECDC report summarizes in Annex 1 & Annex 3 recommendations for 2022-2023 - [Interim public health considerations for COVID-19 vaccination roll-out during 2023 \(europa.eu\)](#)
- The latest data on covid-19 vaccination coverage during the 2023-2024 season  
<https://www.ecdc.europa.eu/sites/default/files/documents/interim-vaccine-overage-eu-eea-2023-24.pdf>
- 
- The last COVID vaccination deployment report (from March 2023) also gives an outline of country recommendations:  
[Overview of the implementation of COVID-19 vaccination strategies and vaccine deployment plans in the EU/EEA \(europa.eu\)](#)



Thank you !

? Questions ?  
? Comments ?

Terveyden ja  
hyvinvoinnin laitos

