How and why to set goals: lessons learned from the seasonal Influenza vaccination strategy

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Burden of influenza in older adults

- Each year, there are an estimated 1 billion cases of influenza, of which 3–5 million are severe, and between 290 000 and 650 000 influenza-related respiratory deaths (0.1– 0.2% case-fatality rate).
- Older adults have a high burden of severe influenza, complications, hospitalizations and mortality.
- In the US in 2013–2014, it was estimated that there were 422.3 influenza hospitalizations/100 000 population among older adults, 4–5 times the rate in younger adults.
- In Hong Kong Special Administrative Region China, adults aged 65–74 years had 83.8 influenza-associated hospitalizations for acute respiratory disease/100 000 population, while those aged >75 years had 266/100 000.
- Modelled data from the 2017 Global burden of disease study suggest that the mortality rate from influenza lower respiratory tract infections (LRTIs) was highest among adults > 70 years, who often suffer from underlying comorbidities (16.4 deaths/100 000, 95% uncertainty interval 11.6–21.9).

Vaccines against influenza: 2022 WHO position paper WEEKLY EPIDEMIOLOGICAL RECORD, NO 19, 13 MAY 2022

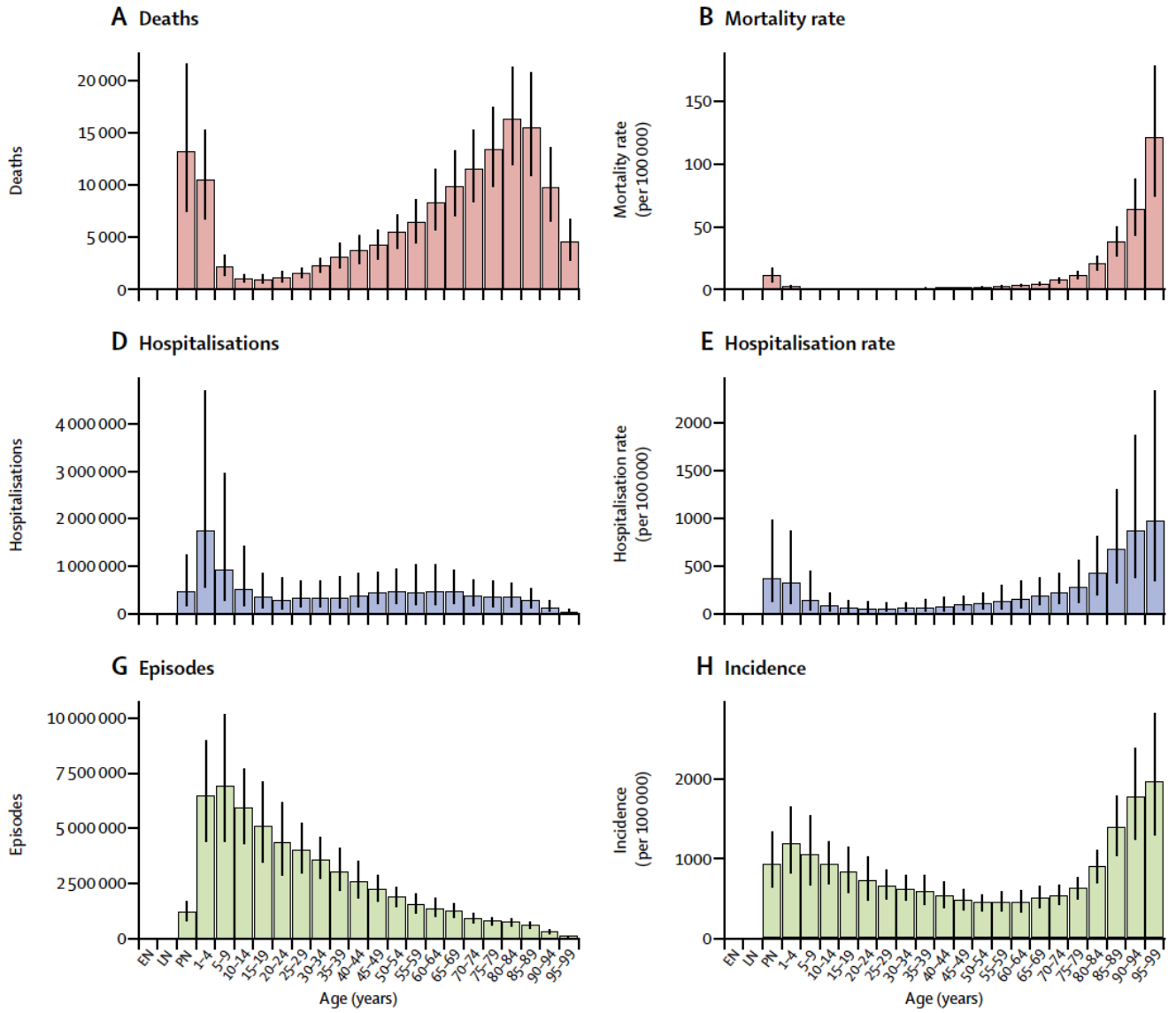
Estimated global annual burden of influenza

	Age <65 years			Age 65–74 years			Age ≥75 years			All ages		
	Median annual influenza-associated respiratory mortality* (95% CrI)	Annual influenza-associated respiratory mortality 95% CrI, per 100 000 individuals*	Proportion of total influenza-associated respiratory deaths†	Median annual influenza-associated respiratory mortality* (95% CrI)	Annual influenza-associated respiratory mortality 95% CrI, per 100 000 individuals*	Proportion of total influenza-associated respiratory deaths†	Median annual influenza-associated respiratory mortality* (95% CrI)	Annual influenza-associated respiratory mortality 95% CrI, per 100 000 individuals*	Proportion of total influenza-associated respiratory deaths†	Median annual influenza-associated respiratory mortality* (95% CrI)	Annual influenza-associated respiratory mortality 95% CrI, per 100 000 individuals*	Proportion of total influenza-associated respiratory deaths†
Worldwide	175 303 (67 255–342 576)	1·0–5·1	42%	72 720 (48 810–102 187)	13·3–27·8	17%	172 420 (122 876–237 933)	51·3–99·4	41%	409 111 (291 243–645 832)	4·0–8·8	..

A significant increase in the risk of death among elderly people compared with non-elderly people (odds ratio 2.95, 95% confidence interval 1.53 to 5.70). Elderly participants also had a higher risk of admission to hospital.

Iuliano et al. Lancet 2018; 391: 1285–300
Mertz et al BMJ 2013;347:f5061 doi: 10.1136/bmj.f5061

Global Burden of Disease Study (GBD) 2017



Lancet Respir Med 2019; 7: 69–89

The 75% threshold for the elderly

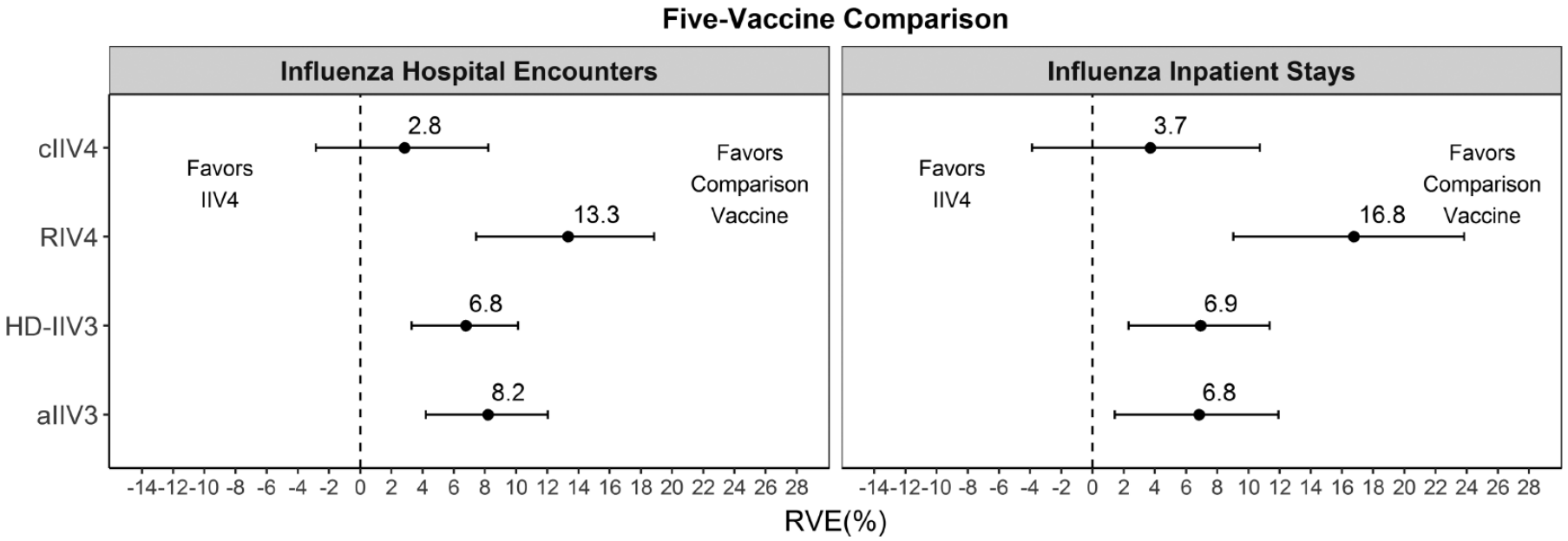
- The 2003 World Health Assembly adopted Resolution 56.19 to increase influenza vaccination coverage of all people at high risk with the goal of attaining vaccination coverage of at least 50 % of the older age groups of the population by 2006 and **75 % by 2010**.
- THE Council of the European Union recommended that Member States are encouraged to adopt and implement national, regional or local action plans or policies aimed at improving seasonal influenza vaccination coverage, with the aim of reaching, as early as possible and preferably by the 2014-2015 winter season, a vaccination coverage rate of 75 % for 'older age groups' and, if possible, for other risk groups. Member States are also encouraged to improve vaccination coverage among healthcare workers.
- Since all EU countries are WHO members and there is no record of any country objecting to the WHO's influenza immunisation guidelines, all EU countries have de facto agreed to both the immunisation of these two risk groups and the immunisation coverage target for the elderly. *ECDC Priority Risk Groups Guidance 2008*

WHAT CAN WE DO ABOUT THE BURDEN OF INFLUENZA IN THE ELDERLY?

Vaccines against influenza: 2022 WHO position paper

- Many observational studies have shown generally low VE in individuals ≥65 y. In this age group, VE for A(H3N2) < A(H1N1) pdm09 and type B
- A 2018 Cochrane review to assess the use of influenza vaccines in older adults concluded that
  - the effectiveness of TIV in absolute terms was modest, irrespective of setting, outcome, population and study design.
  - IIV had a VE of 58% (95% CI 34-73%) in people aged 65 years and above.
- The high-dose vaccine had higher efficacy than the standard-dose vaccine against laboratory-confirmed ILI (VE=24%, 95% CI 10–36%), respiratory-related hospital admissions (VE=13%,95% CI 2–22%) and pneumonia-related hospital admissions (VE=21%, 95% CI 5–73%).
- In all influenza seasons, adjuvanted influenza vaccine was more effective than no vaccination in this group (VE=45%, 95% CI 23–61).

Enhanced vaccines for older adults



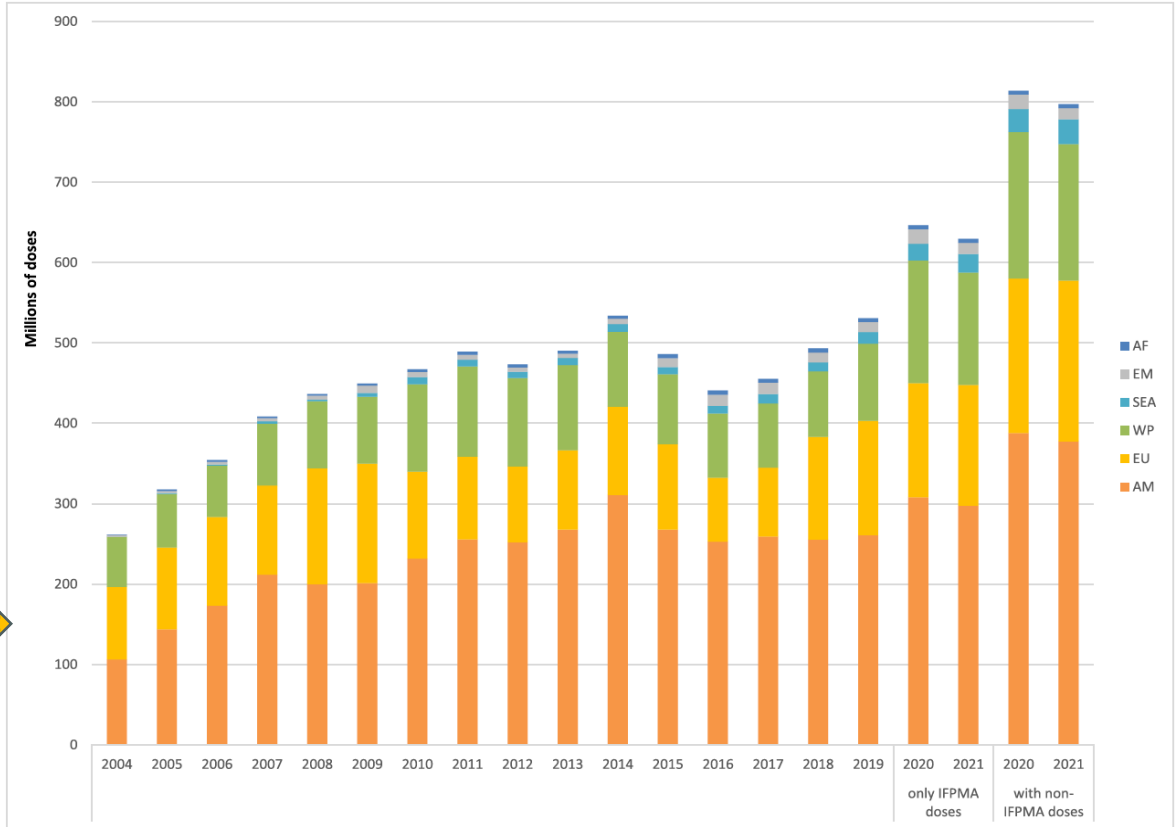
Izurieta et al *CID* e4258 • 2021:73 (1 December)

THE EXPERIENCE WITH INFLUENZA VACCINE UPTAKE DURING THE COVID-19 PANDEMIC

Absolute number of influenza vaccine doses distributed by year and region

Vaccine doses are a proxy for vaccine coverage

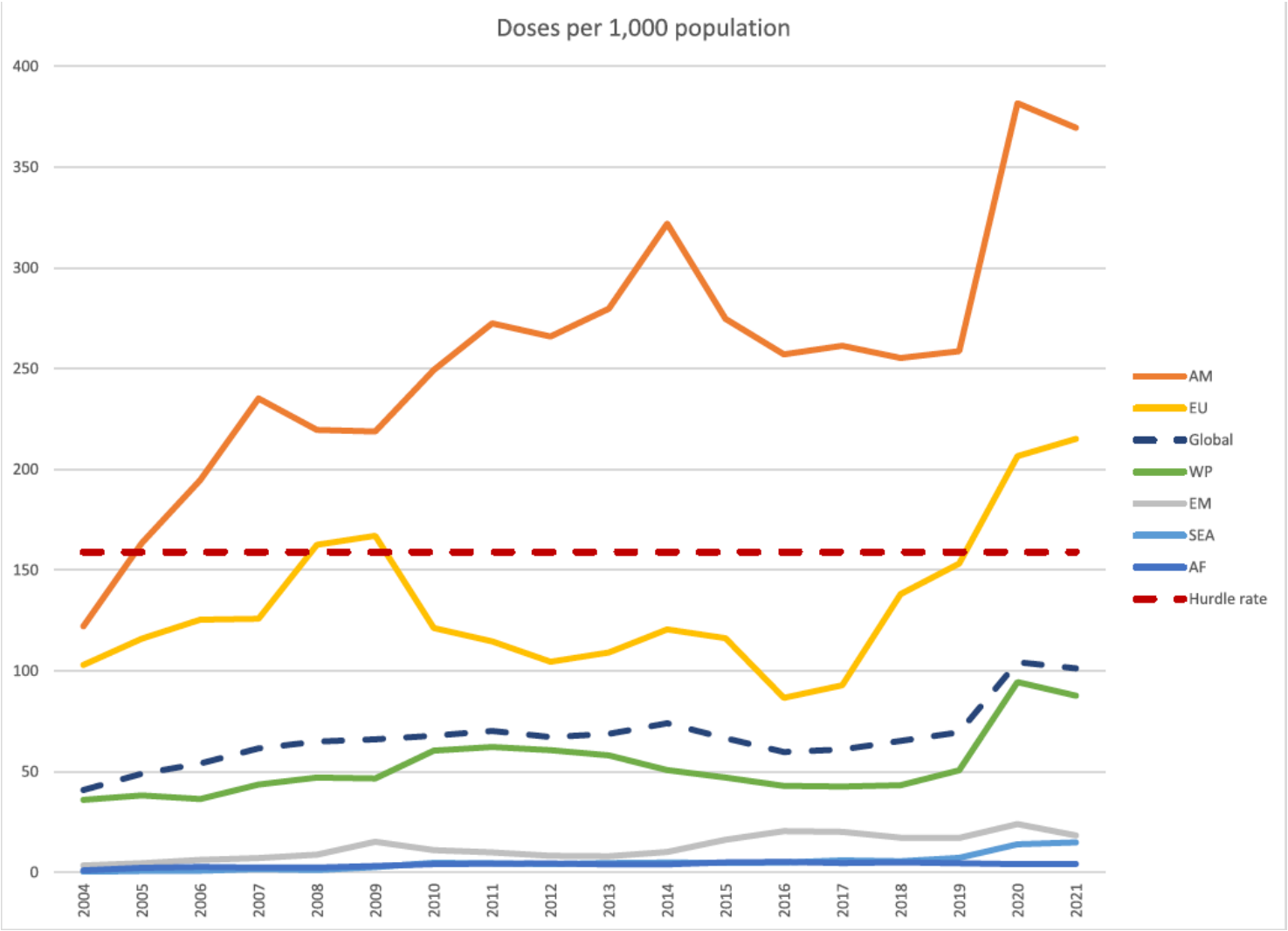
Europe



- The global number of doses distributed in 2021, estimated at about 797 million, represents a 205% increase over the 262 million distributed in 2004
- Vaccine coverage declined in EU from 34% in 2004 to 25% in 2021

Palache et al *Vaccine* 41 (2023) 5877–5883

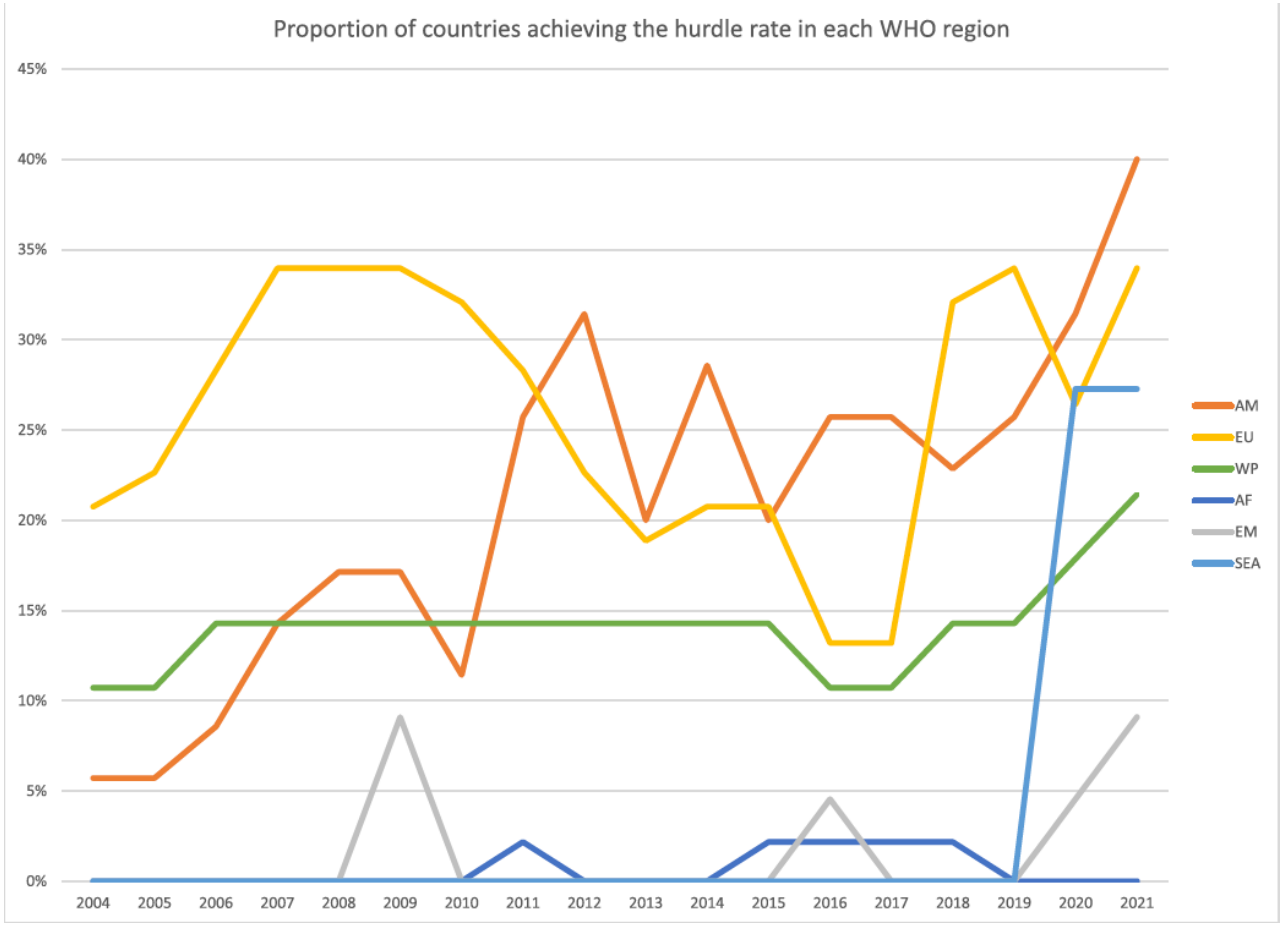
of doses/1000 population distributed by year and region



Palache et al *Vaccine* 41 (2023) 5877–5883

Number of countries achieving or surpassing the hurdle rate

The “hurdle rate”, defined as doses distributed to ≥15.9% of the population, the proportion of the elderly population in a set of countries in 2008.



Palache et al *Vaccine* 41 (2023) 5877–5883

Why did influenza vaccine usage increase during the pandemic?

- The number of countries using influenza vaccine did not increase with the onset of COVID-19
  - the increased distribution rates are attributable to increased use of vaccines in countries with existing programs.
- Governments strengthened influenza vaccination programs during the COVID-19 pandemic to avoid adding morbidity and mortality from influenza to COVID-19

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What worked?

Most of the improvements in dose distribution of influenza programs during the COVID-19 pandemic could be classified in four categories

- Promoting vaccination using tailored approaches for specific populations
- Improving convenient access to influenza vaccines in COVID-safe settings (increased access points)
- Improving reimbursement of seasonal influenza vaccination for priority groups
- Maintaining the timing of vaccination to the autumn

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How can we sustain the benefits from increased uptake of influenza vaccines?

- Governments need to sustain the efforts made during the COVID-19 pandemic
- A clear global roadmap for achieving influenza control objectives in line with the strategic objective 3 of the Global Influenza Strategy 2030
- Countries should assess the benefits of sustaining improved coverage with influenza vaccines.
- Estimates of the impact of influenza vaccination on disease reduction and broader societal health systems
- Governments need to continue to implement effective strategies to reduce harm from misinformation and guard against vaccine hesitancy

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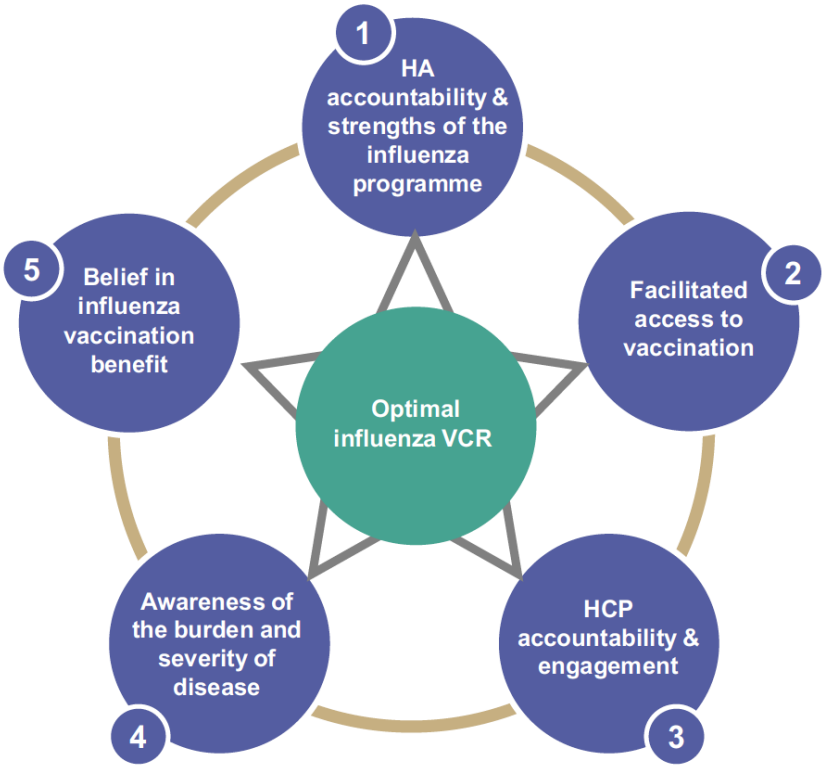
Factors to improve influenza vaccination rates

Fundamental elements across all pillars and countries

- Data collection & communication
- Multi-stakeholder accountability
- Multi-faceted recipes tailored to each country health system



Kassianos et al *Drugs in Context* 2021; 10: 2020-9-5. DOI: 10.7573/dic.2020-9-5

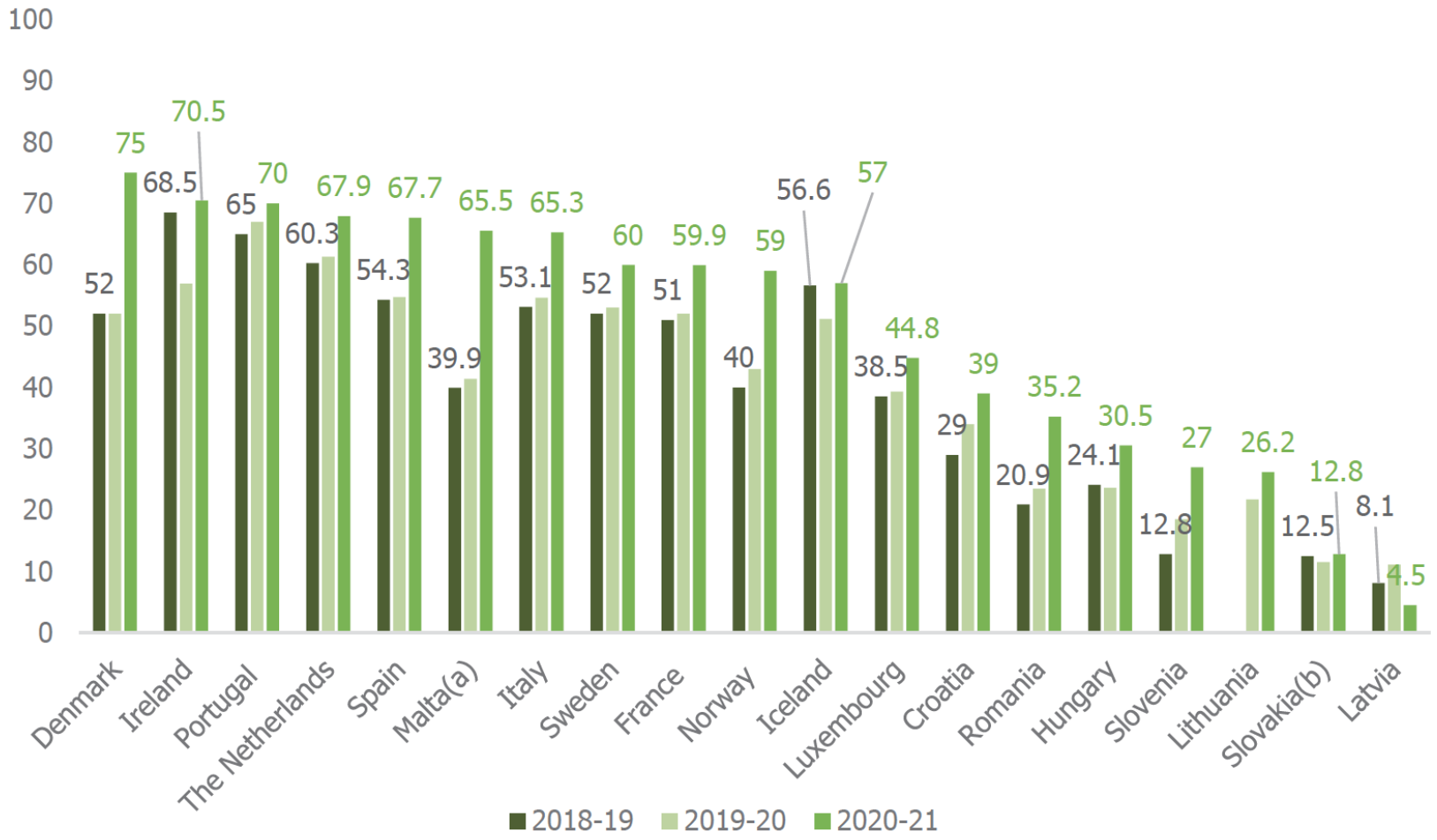
Influenza vaccine coverage in >65 y/o in Australia

Vaccine is provided free of cost to >65 y/o

	2020	2021	2022	2023
6 mo-<5 y	46.1	26.5	34.1	19.7
5-<15 y	27.4	14.5	23.2	14.1
15-<50 y	23.4	22.8	29.5	19.2
50-<65 y	35.2	38.2	46.8	40.0
>65 y	61.9	64.9	70.0	61.4

https://ncirs.org.au/influenza-vaccination-coverage-data

Seasonal influenza vaccination coverage rates in older adult age groups, EU/EEA countries (n=19)



ECDC; Technical report; *Seasonal influenza vaccination recommendations and coverage rates in EU/EEA Member States. 2023*

Council Recommendation on seasonal influenza vaccination (22 December 2009)

Member States are encouraged to:

- a) take into account the definition of ‘older age groups’ and of ‘risk groups’ as contained in the ECDC guidance
- b) measure uptake in all risk groups, and analyse the reasons why some people do not wish to receive vaccinations;
- c) foster education, training, and information exchange on seasonal influenza and vaccination by organising:
  - information action for healthcare workers;
  - information action for risk groups and their families regarding the risks associated with, and the prevention of, influenza;
  - effective information action to remove obstacles to vaccination uptake.

ELI: http://data.europa.eu/eli/reco/2009/1019/oj

ECDC Report Recommendations 2023

- Targeted and context specific strategies be put in place to increase demand
- Investment should be made in evaluation efforts to inform future strategies and maximise the use of public health resources
- Investments to improve access to vaccines and convenience for those being vaccinated
- Healthcare workers continue to play a critical role in increasing uptake of vaccines
- Improvements to existing seasonal influenza vaccines are also critical

ECDC; Technical report; *Seasonal influenza vaccination recommendations and coverage rates in EU/EEA Member States. 2023*