

# Global Health Cast 29

## February 7, 2023



Dr. Melvin Sanicas



Prof. Dr. Joe Schmitt

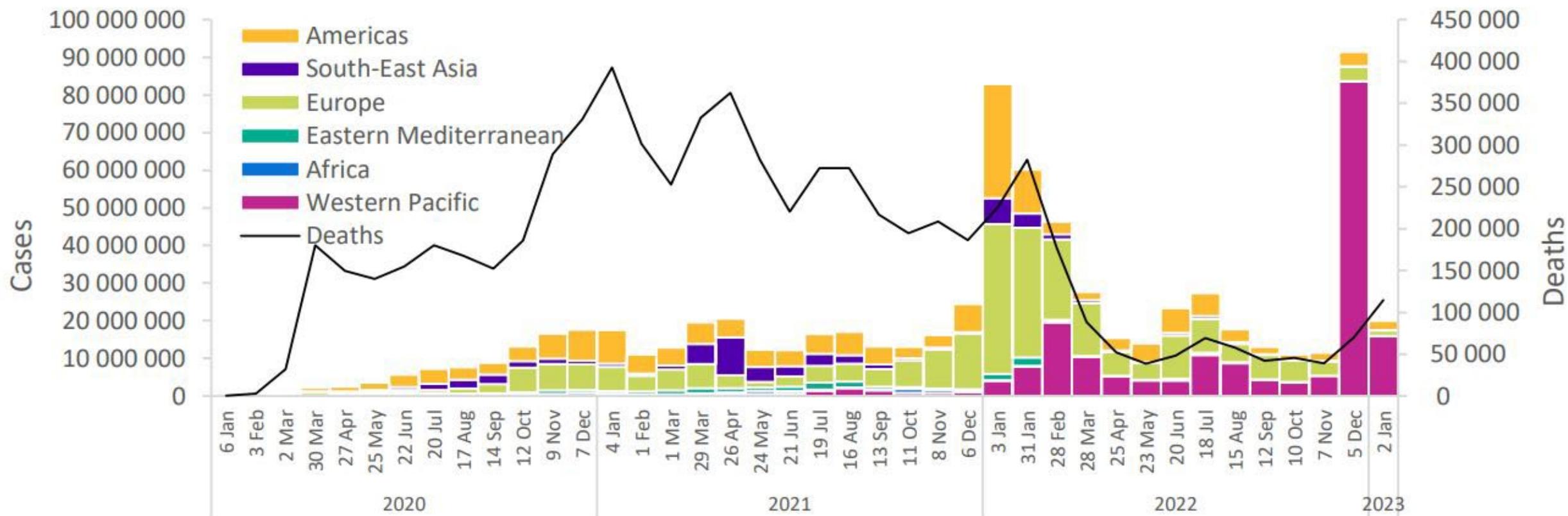
**Every Week**

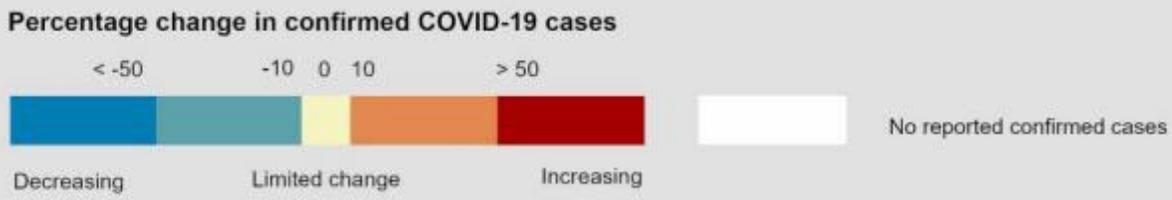
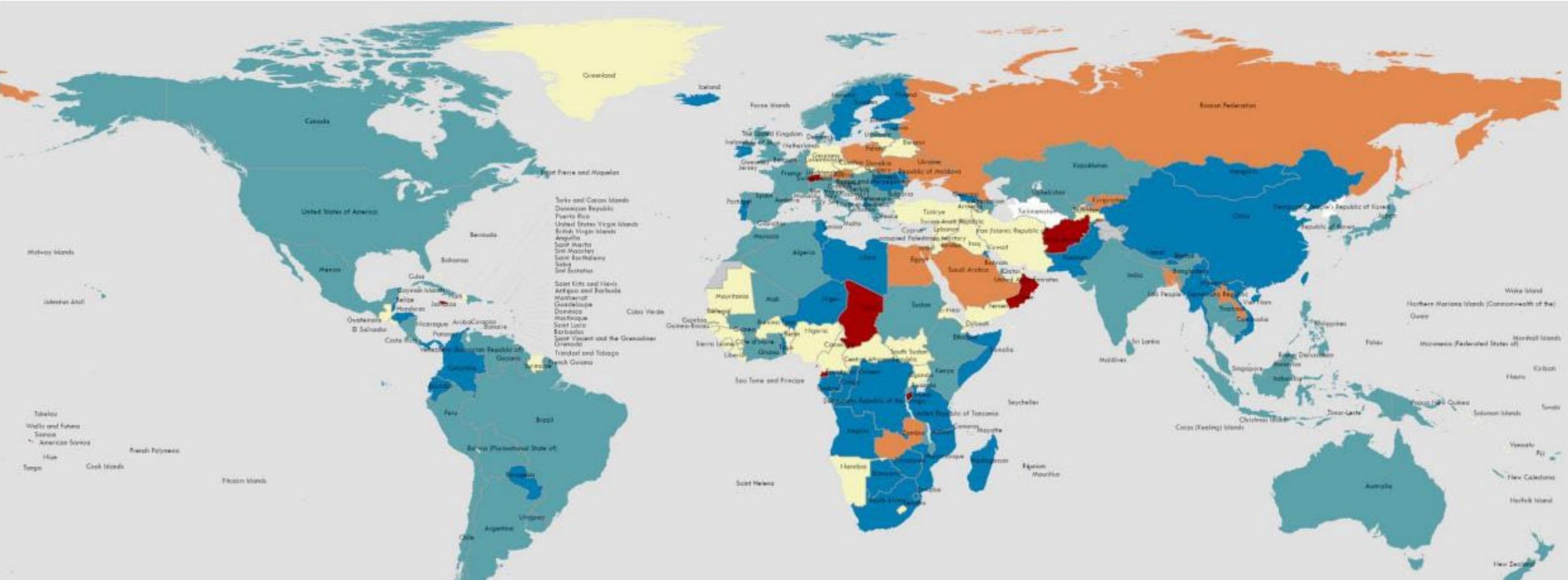
12.00 noon - CET

# What we talk about today

- **COVID-19 update**
- **SARS-CoV-2 Variants circulating globally**
- **COVID-19 in China – insights from obituaries**
- **Flu in decline in the US and globally**
- **Effectiveness of one dose of Jynneos MPOX vaccine**
- **Effectiveness of 4CMenB**
- **Kruger-Dunning effect: Unskilled and unaware results in self-overestimation; one cause of fake news?**

**Figure 1. COVID-19 cases reported by WHO Region, and global deaths by 28-day intervals, as of 29 January 2023\*\***







**Wang Linfang, 92,**  
molecular biologist



Four members of China's two most prestigious academic institutions **died in October** – in line with the average in recent years.

Peng Yigang, 90



Qian Zhengying, 99



Chen Jisheng, 90

Huang Kezhi, 95



Then, on Dec. 8, **China abandoned** its tight Covid restrictions.

**Zhao Zisen, 90,**  
developed China's first practical optical fiber



Zhang Guocheng, 91



The obituaries **began accumulating.**

Long Yuqiu, 96

Gu Zhen'an, 86

Jiang Hualiang, 57

Zhang Youshang, 97



Fan Weitang, 87



**Zhang Jinlin, 86,**  
nuclear submarine expert



Xu Mi, 85



Wu Sheng, 88



Lu Xiyan, 94



Yang Fuyu, 95



Liang Jincui, 95



Ge Xiurun, 88



Mao Zhi, 90



Qian Yitai, 83



Zhao Qiguo, 92



Li Jieshou, 98



Hu Guangzhen, 95



Li Zhao, 82



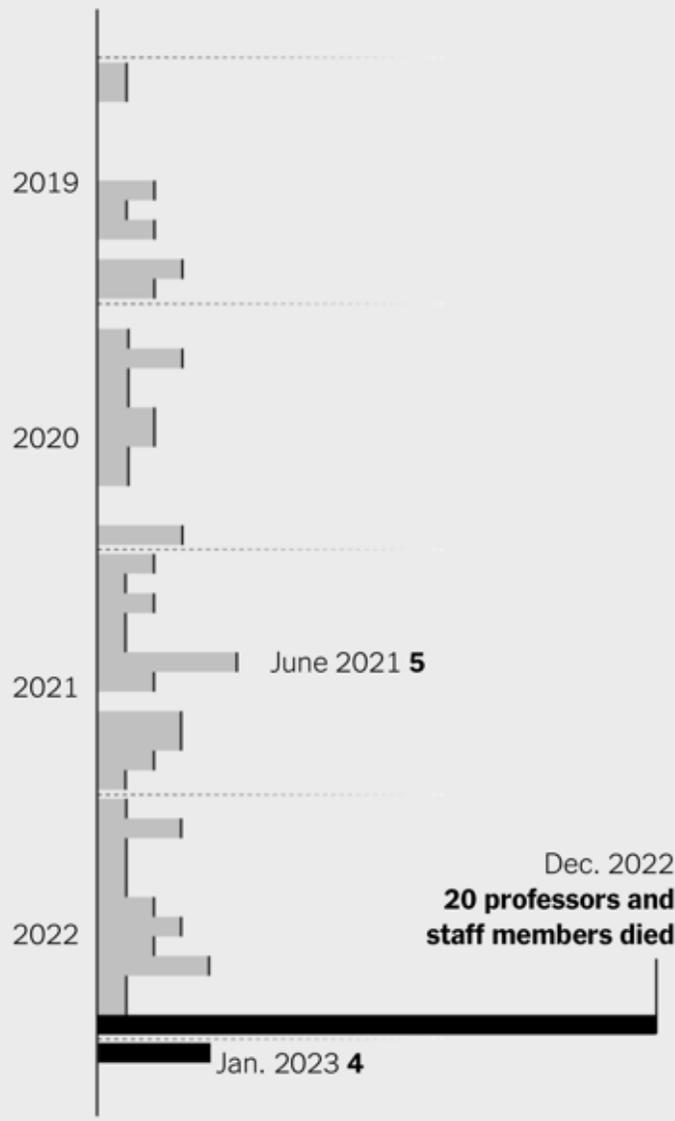
Wang Wei, 85



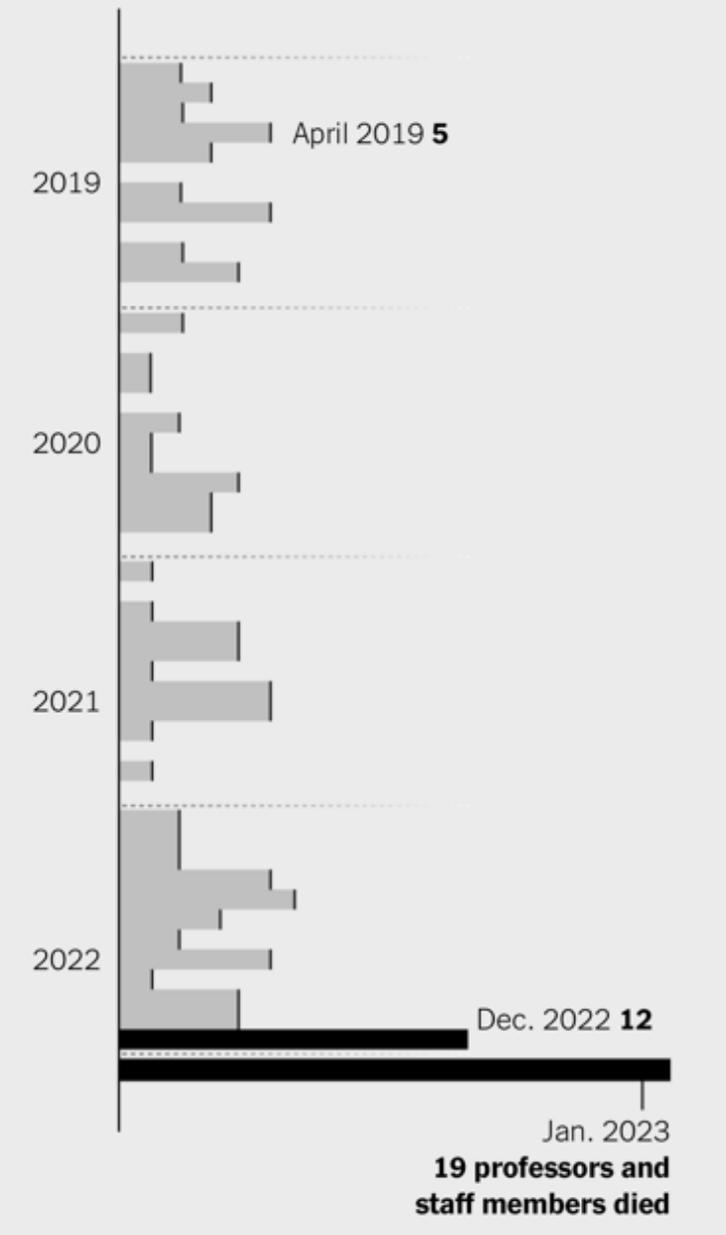
Ouyang Pingkai, 77

**Fang Zhiyuan, 83,**  
cultivated more than 30 new types of cabbages

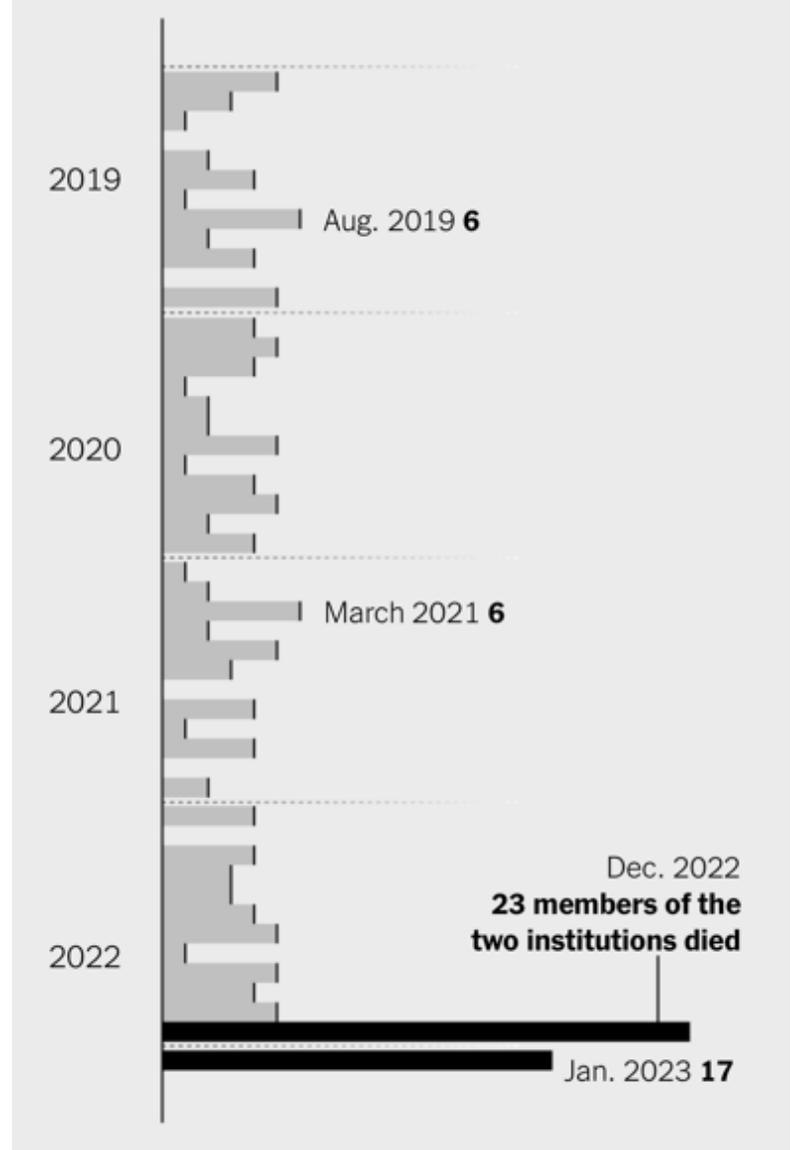
### Obituaries published by Peking University Health Science Center



### Obituaries published by the Harbin Institute of Technology



### Obituaries published by the two state-backed institutions



# Variant circulation dynamics differ by WHO region and among countries within the same region

## Africa (332 sequences)

**BQ.1.1** (23.7%), BA.2.10.1 (12.3%), and XBB.2 (12.1%)

## Americas (40 010 sequences)

**BQ.1.1** (37.5%), **XBB.1.5** (19.6%), and BQ.1 (19.6%)

## Eastern Mediterranean (85 sequences)

**XBB.1** (37.2%), BN.1 (10.3%), and BA.5.2 (10.3%)

## Europe (40 379 sequences)

**BQ.1.1** (31.3%), BQ.1 (13.0%), and CH.1.1 (12.3%)

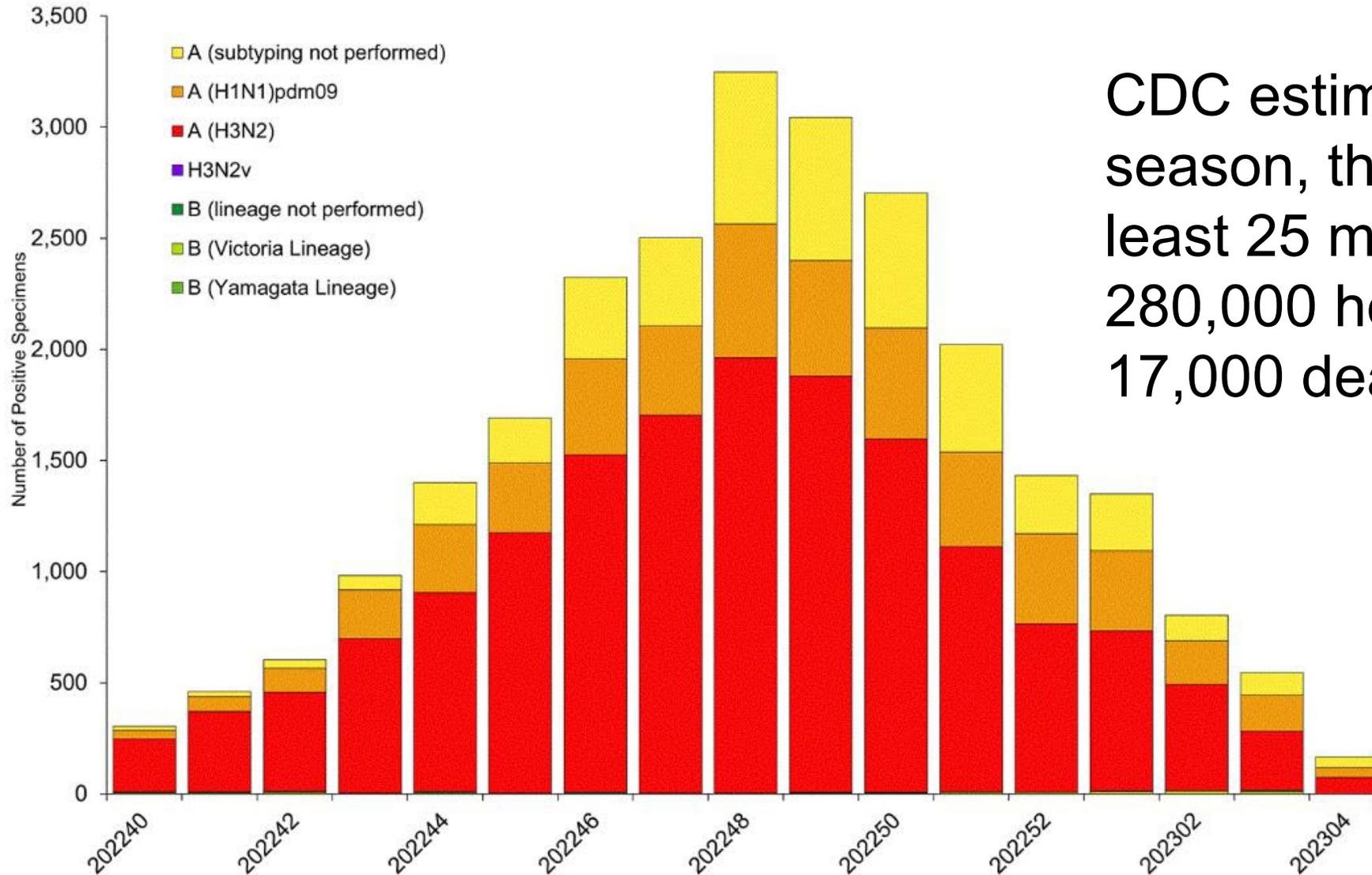
## South-East Asia (389 sequences)

**XBB.1** (41.1%), **BQ.1.1** (14.3%), and BA.2.10.1 (6.0%)

## Western Pacific (15 515 sequences)

BA.5.2 (30.1%), BF.7 (13.2%), and **BQ.1.1** (8.5%)

## Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, October 2, 2022 – January 28, 2023



CDC estimates that, so far this season, there have been at least 25 million illnesses, 280,000 hospitalizations, and 17,000 deaths from flu.

**CDC: everyone ages 6 months and older get an annual flu vaccine as long as flu activity continues.**

## Accelerated Article Preview

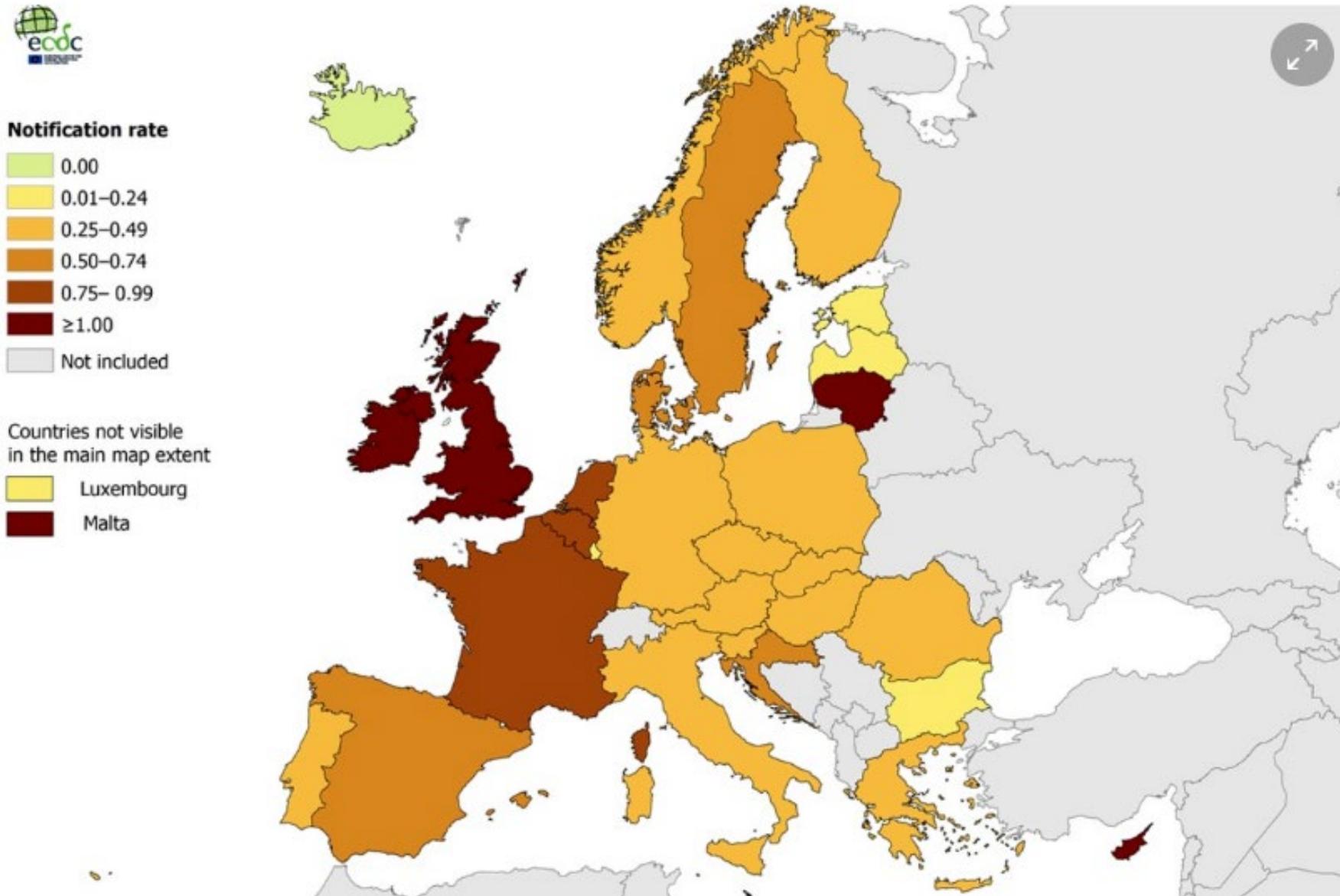
# Real-world effectiveness of a single dose of mpox vaccine in males

During the study, mpox infections were confirmed in 5 vaccinated participants (9.3 per 100,000 person-days), compared with 16 in the unvaccinated (4.3/100,000) (hazard ratio, 0.14). The estimated, adjusted VE was 86% (95% CI, 59% to 95%).

The estimated vaccine effectiveness (VE) of **one subcutaneous dose** of the **Jynneos mpox vaccine among men in Israel was 86%**.

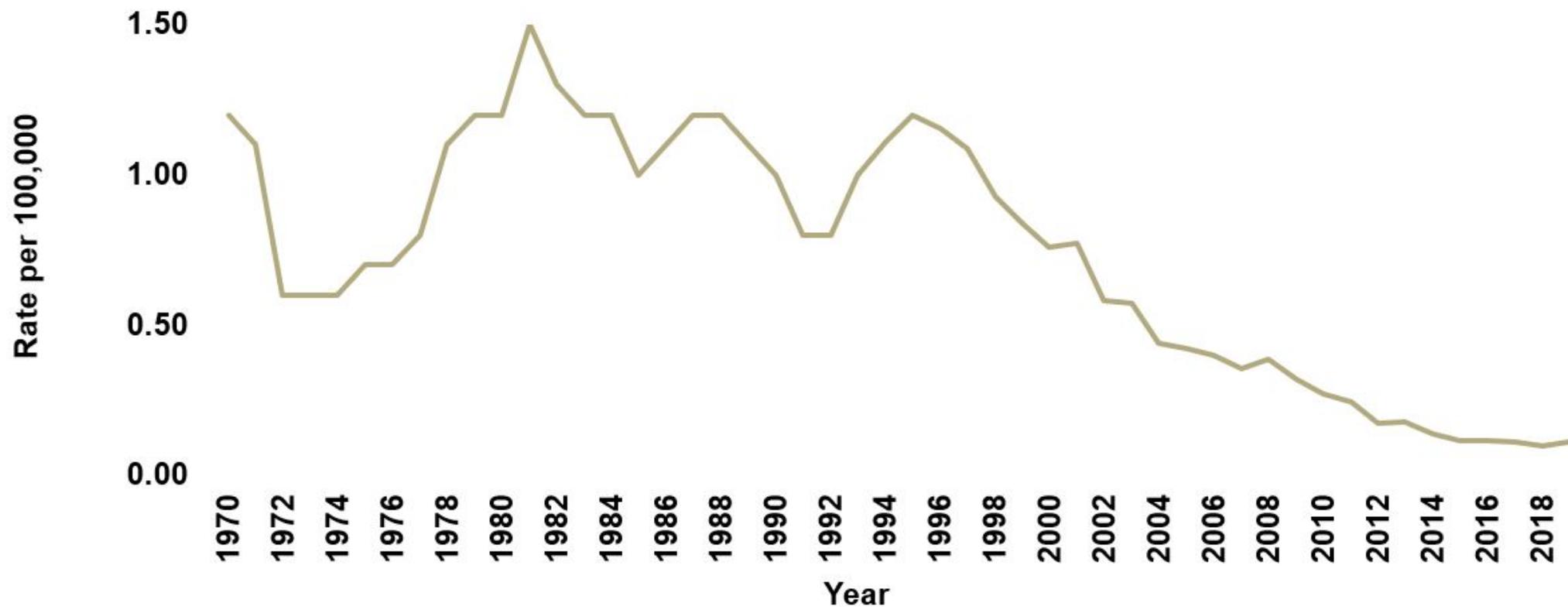
*“Completing the second vaccine dose, per the approved label, may improve this effectiveness and provide longer-lasting protection.”*

Figure 1. Number of confirmed cases of invasive meningococcal disease per 100 000 population by country, EU/EEA, 2016





# Meningococcal disease incidence, United States, 1970–2019



SOURCE: CDC; National Notifiable Diseases Surveillance System

# 5. Cluster of serogroup B invasive meningococcal disease (IMD) in Strasbourg - France - 2022

## Overview:

**Summary:** On 12 December 2022, the French public health authorities informed that a cluster of four cases of serogroup B invasive meningococcal disease (IMD) were found in young adults in Strasbourg between 1 November 2022 and 28 November 2022. Further investigation found that all case patients had visited the same night club in Strasbourg in the days prior to their hospitalisation, and there was no direct contact between the four case patients. One death was reported. Chemoprophylaxis was recommended for close contacts according to French guidelines for management of IMD.

Whole genome sequencing conducted at the National Reference Centre (NRC) for Meningococci showed that three cases were caused by the same MenB clone belonging to clonal complex 269. For the fourth case, partial typing data showed a non-distinguishable strain. The NRC confirmed that the strain was covered by Bexsero and predicted to be covered by Trumenba meningococcal Group B vaccines.

On 7 December, the local health authority (Agence régionale de santé) launched a vaccination campaign using MenB vaccines targeting the staff and clients regularly visiting the night club where the cases were exposed. The vaccination campaign will be extended to all individuals aged 20-35 years old who regularly visit bars and night clubs in the centre of Strasbourg.

# Effectiveness of 4CMenB

- ▶ September 2015, the 4CMenB; Bexsero became available for private purchase in Spain.

## METHODS

- ▶ Nationwide matched case–control study to assess the effectiveness of 4CMenB
- ▶ Study included all laboratory-confirmed cases of IMD, < 60 months (October 5, 2015, and October 6, 2019).
- ▶ Each case patient was matched with 4 controls according to date of birth and province.

## RESULTS

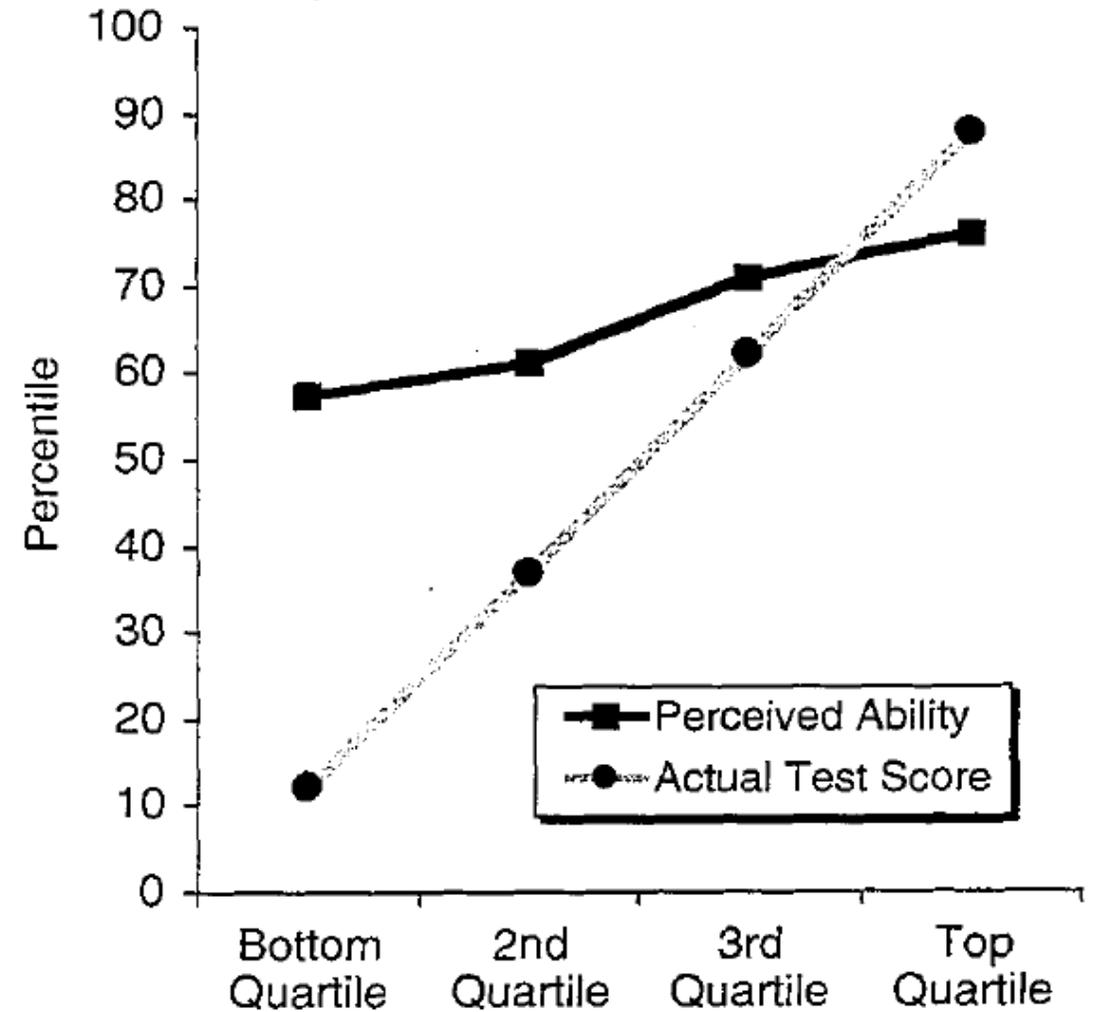
- ▶ 306 case patients (243 [79.4%] with serogroup B disease AND 1224 controls.
- ▶ 35 case patients (11.4%) AND 298 controls (24.3%) had received  $\geq 1$  4CMenB.
- ▶ Effectiveness of complete vaccination ( $\geq 2$  doses), any IMD serogroup: **76% (95% CI: 57 to 87)**
- ▶ Effectiveness of partial vaccination: **54% (95% CI: 18 to 74)**
- ▶ Effectiveness  $\geq 1$  dose against serogroup B IMD **64% (95% CI, 41 to 78)**
- ▶ Effectiveness non-serogroup B IMD: **82% (95% CI, 21 to 96)**

## CONCLUSIONS

- ▶ Complete Vx with 4CMenB effectively prevents IMD by serogroup B AND non–serogroup B in children < 5 years.

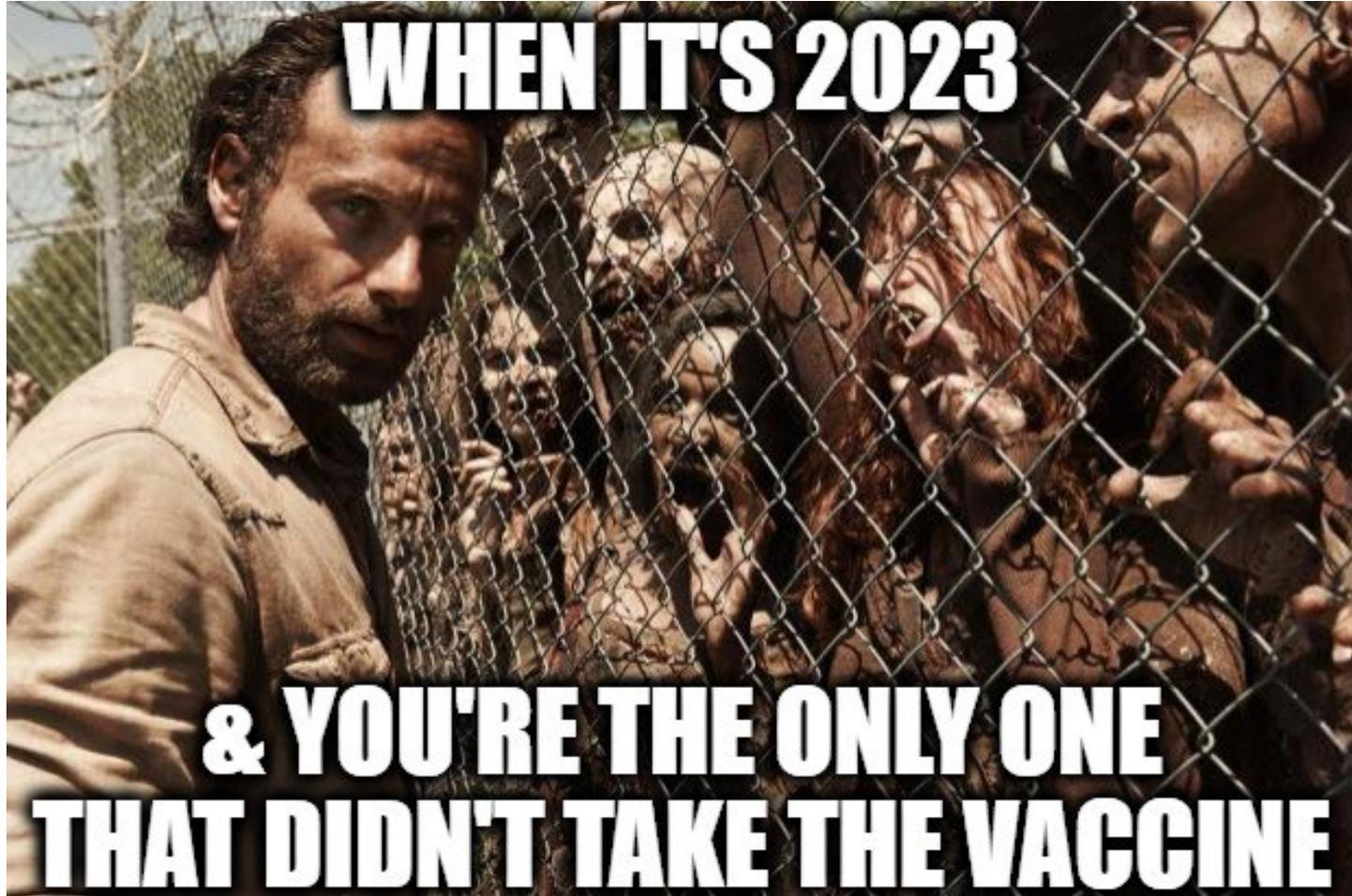
## Unskilled and Unaware of It: Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments

- People tend to hold favorable views of their abilities.
- **Overestimation occurs**, in part, because people who are unskilled in these domains suffer a dual burden:
  - Not only do these people **reach erroneous conclusions and make unfortunate choices**, but
  - their **incompetence robs them of the metacognitive ability to realize it**.
- Across 4 studies, the authors found that participants scoring in the bottom quartile on tests of humor, grammar, and logic **grossly overestimated their test performance and ability** (test scores: 12th percentile, self-estimate in the 62<sup>nd</sup>).
- Several analyses linked this **miscalibration to deficits in metacognitive skill**, or the capacity to distinguish accuracy from error.
- Paradoxically, **improving skills (thus increasing metacognitive competence) helped recognize limitations** of their abilities.



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# Neisseria meningitidis: Membrane Structure

- ▶ **Gram negative diplococcus**
- ▶ **Bacterial membrane (inside - outward)**
  - ▶ Inner cell membrane
  - ▶ Peptidoglycan
  - ▶ Outer cell membrane
  - ▶ Capsular polysaccharides (CPS or capsule)
- ▶ **Capsule (PS)**
  - ▶ **13 serogroups**
  - ▶ **5 groups** cause almost all disease
  - ▶ Virulence factor
  - ▶ **“B” is self antigen**

