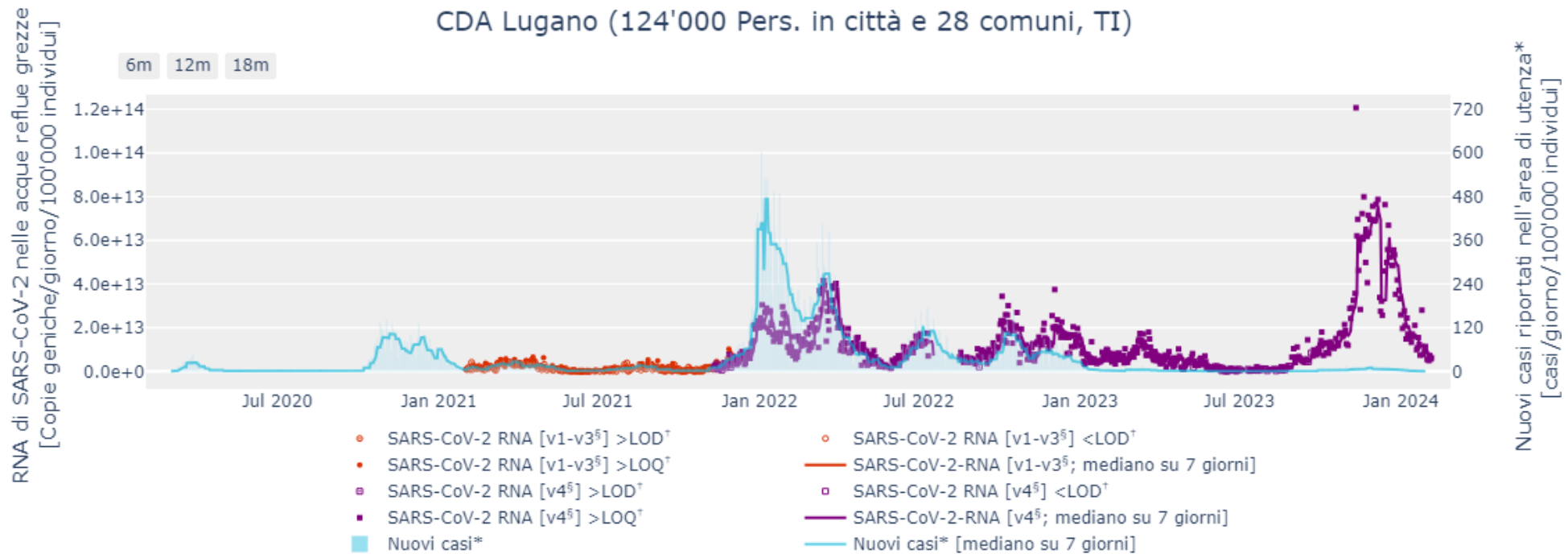


# **COVID-19 infection in vaccinated persons - autumn/winter 2023/4**

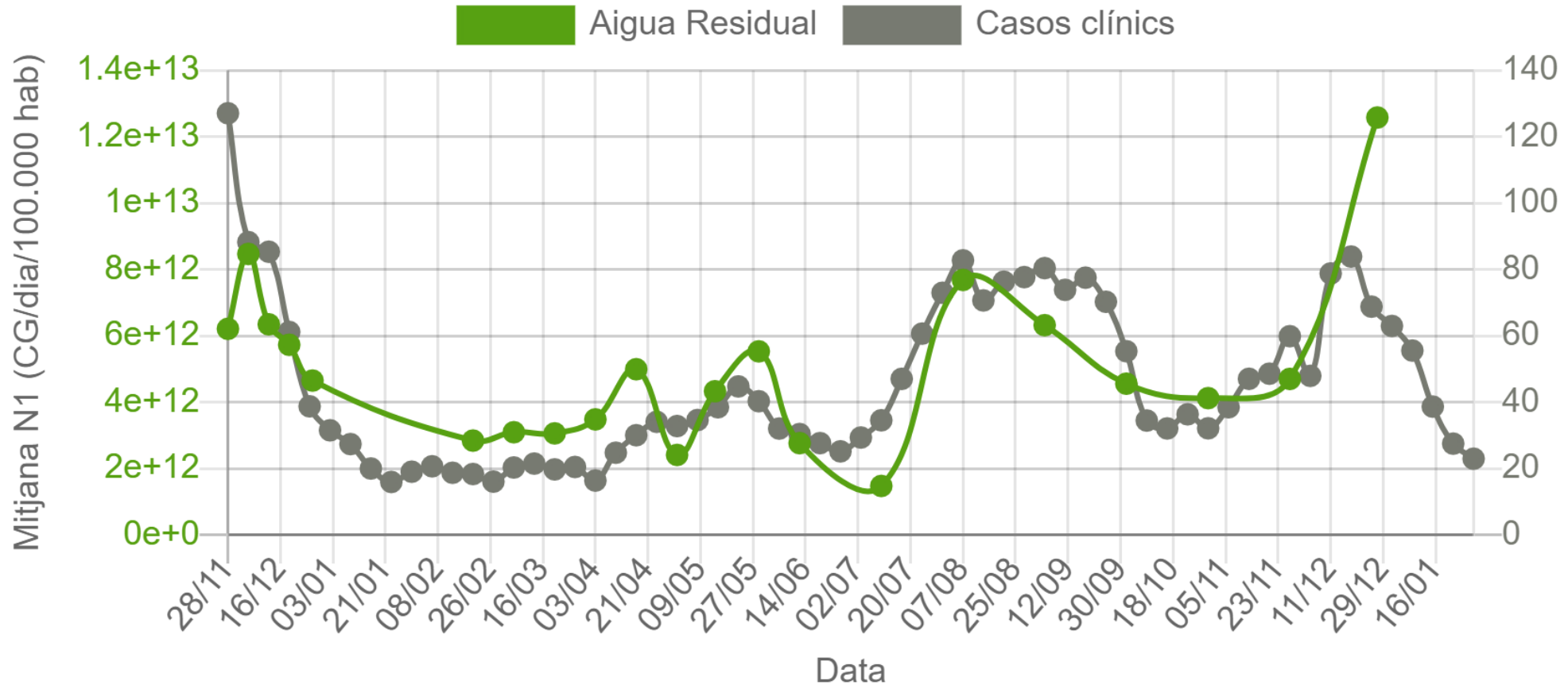
Neville Calleja

# Wastewater monitoring in Lugano (CH)



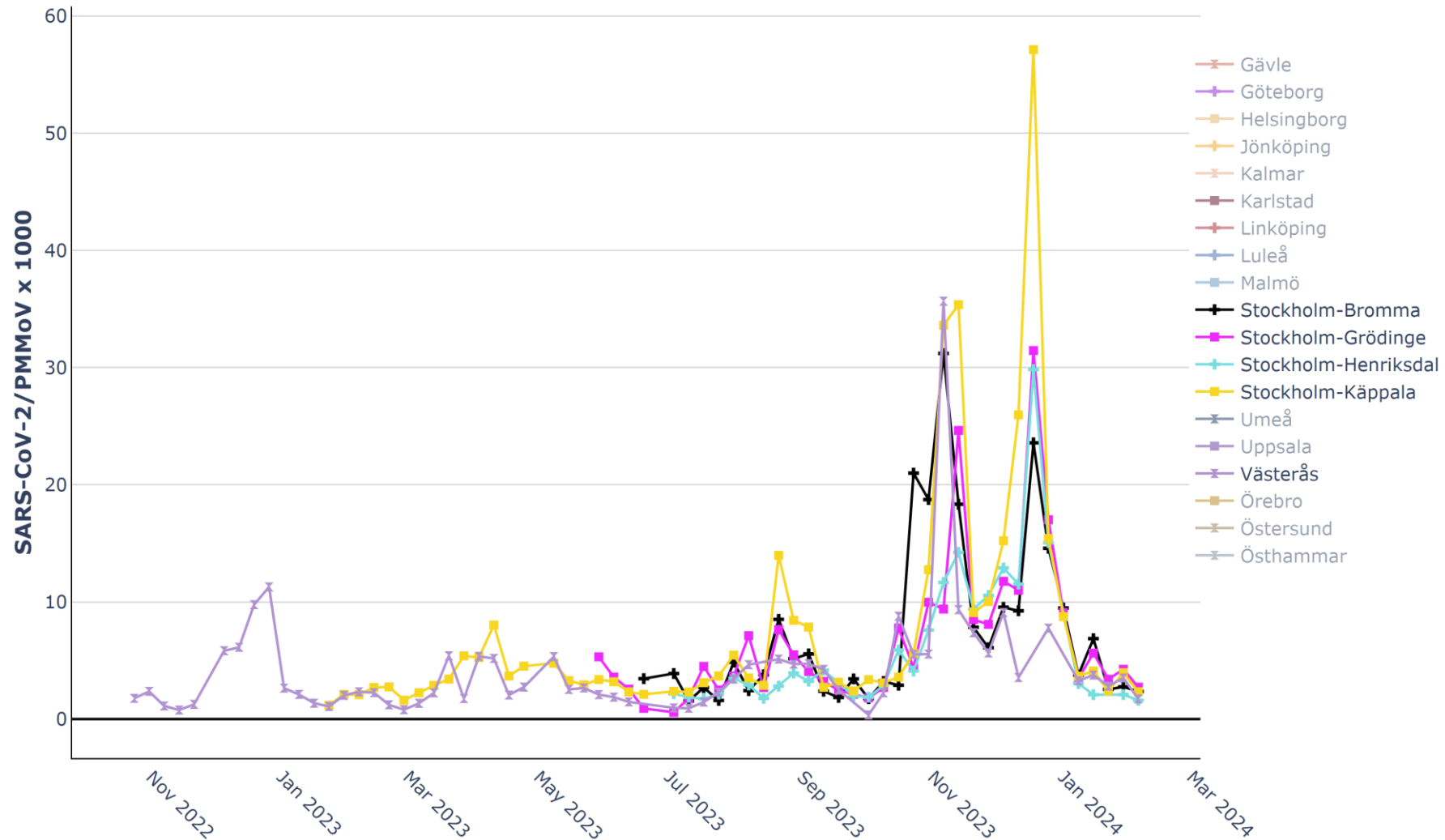
# Wastewater monitoring in Girona (ES)

Evolució del número de còpies genòmiques



xa de diagnòstic clínic de COVID-19 per 100.000 habitats

# Wastewater monitoring in Stockholm (SE)



# Excess mortality (Source: EUROMOMO.EU)

WEEK RANGE

Week 0

Week 52

SHOW

Weekly

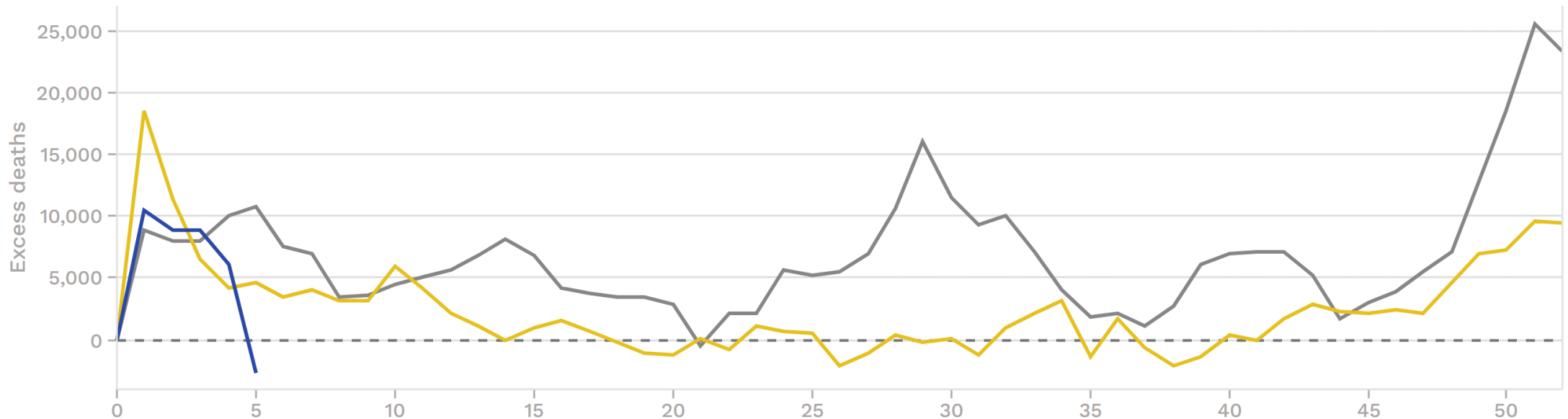
Cumulated

Week 0

Week 52

..... Baseline — 2022 — 2023 — 2024

All ages




# Vaccine efficacy or effectiveness (WHO)

- A vaccine's **efficacy** is measured in a controlled clinical trial and is based on how many people who got vaccinated developed the 'outcome of interest' (usually disease) compared with how many people who got the placebo (dummy vaccine) developed the same outcome.
- Vaccine **effectiveness** is a measure of how well vaccines work in the real world.

$$VE = \frac{ARU - ARV}{ARU} \times 100\%$$

# Vaccine effectiveness - XBB1.5 update

- Germany (projected)<sup>1</sup>
  - mRNA1273.815 (Moderna) - 84% (Severe disease); 57% (Infection)
  - XBB1.5 BNT1262b2 (Pfizer) - 83% (Severe disease); 55% (Infection)
- Denmark<sup>2</sup>
  - XBB1.5 BNT1262b2 (Pfizer) - 76% (hospitalisation)
- Netherlands<sup>3</sup>
  - XBB1.5 BNT1262b2 (Pfizer) - 71% (hospitalisation); 73% (ICU)



# Vaccine coverage in Autumn/Winter 2023/4

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<https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-vaccination-coverage-addendum.pdf>

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%
Italy	5.3%	10.1%	13.5%	NDR	NDR	NDR
Sweden <sup>a</sup>	44.8%	70.7%	74.0%	NDR	NDR	NDR



**Excess mortality (EUROMOMO) vs vaccine coverage in 80+ (ECDC): no correlation**

