

Excess Deaths

Independent SAGE

27 January 2023

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@ActuaryByDay



**Continuous
Mortality Investigation**

Institute and Faculty of Actuaries

Agenda

- Actuaries
- Death Counts
- Demographics
- Age Standardised Mortality
- Excess Deaths
- Drivers of Excess Deaths





What actually is an actuary?

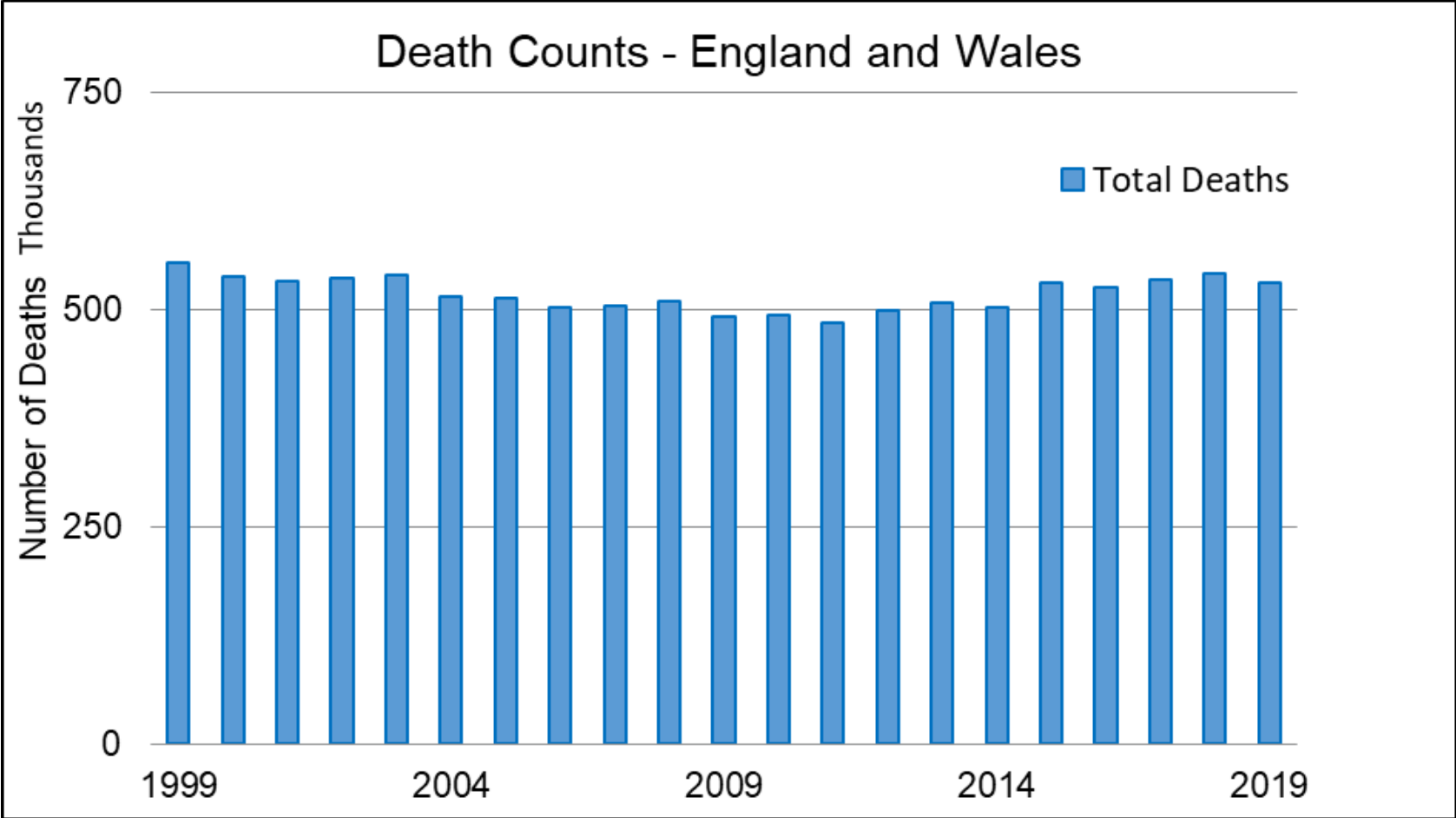
*Actuaries forecast the **likelihood** and **financial impact** of future events*

For example – Pension payments depend upon current and future mortality, inflation, interest rates, etc

Official long version – with videos...

<https://actuaries.org.uk/qualify/become-an-actuary/what-is-an-actuary/>

Death Counts – England and Wales



Source: Office for National Statistics (ONS)

Changing Demographics and Death Rates

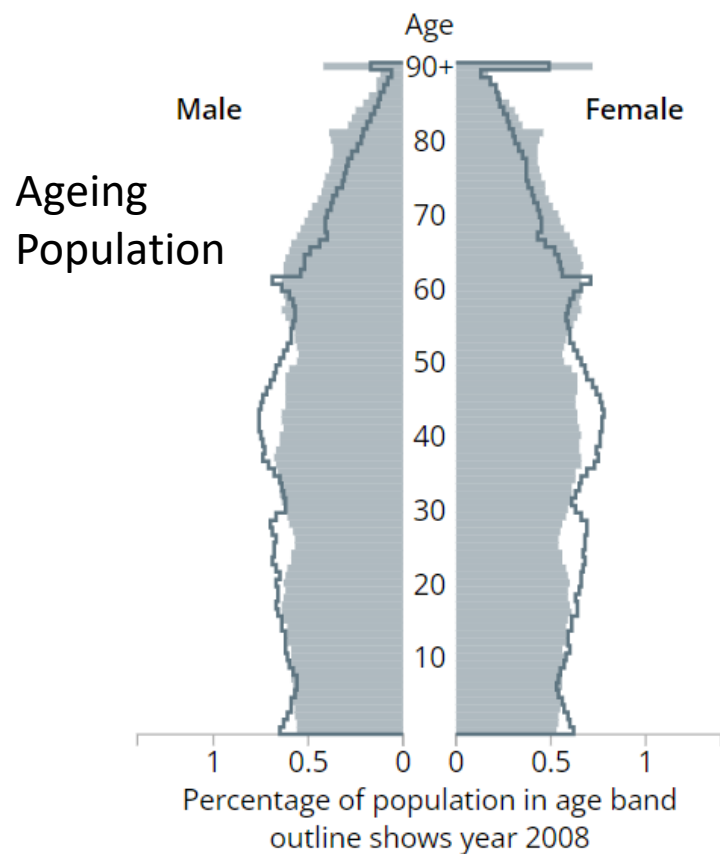
United Kingdom ▼

69,806,294 people in 2028

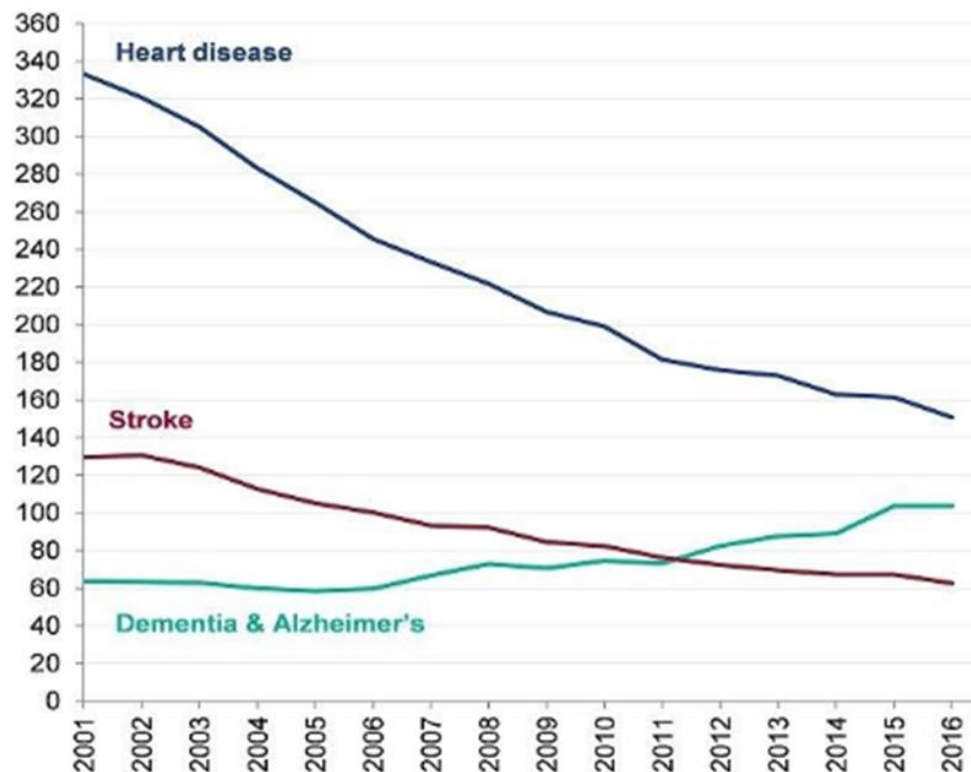
All ages

34,589,208 males 49.6%

35,217,086 females 50.4%



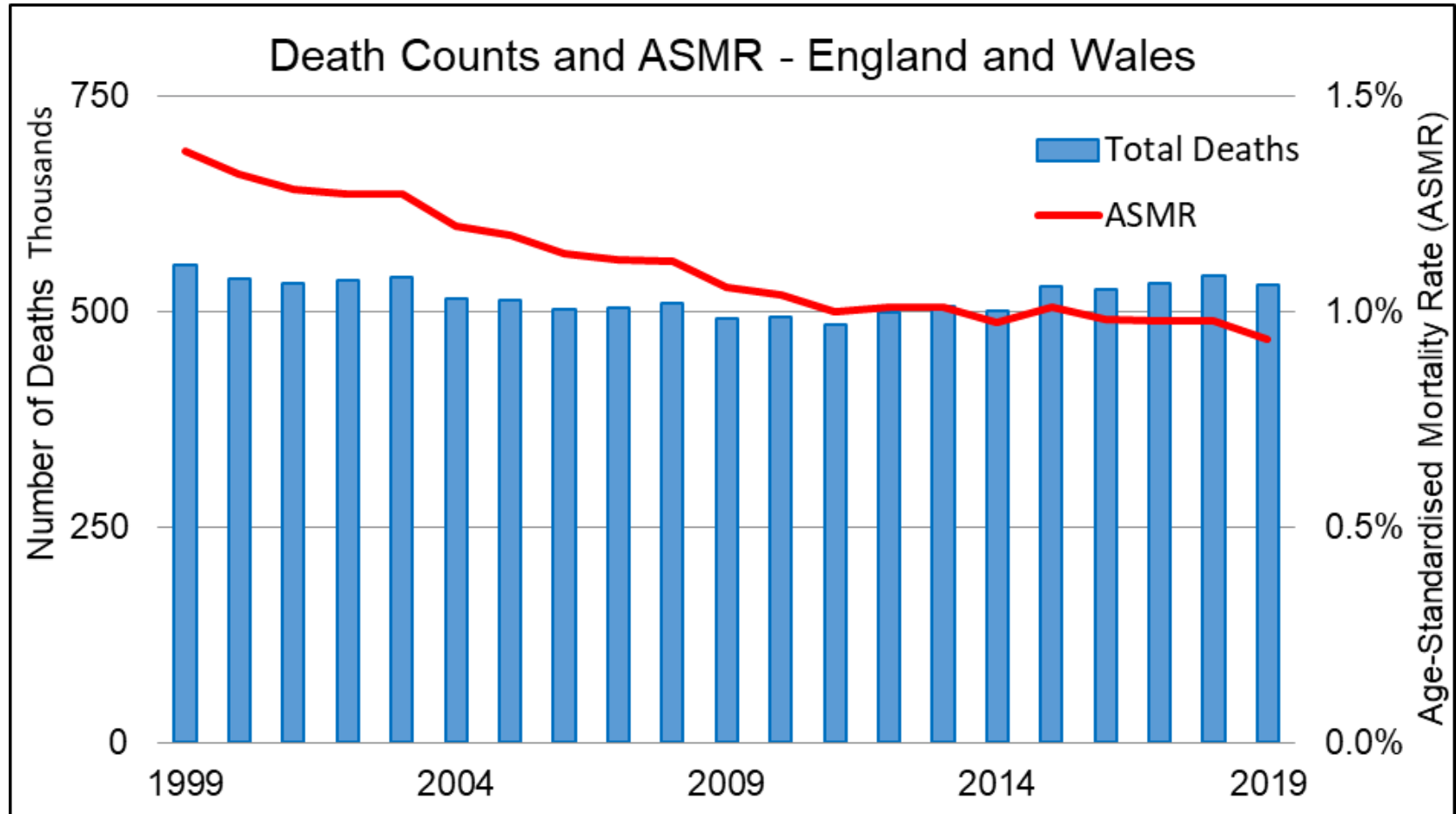
Age-standardised rate per 100,000



Population data from ONS

Cause of deaths from PHE (now UKHSA)

Death Counts and Age-Standardised Mortality Rate – England and Wales

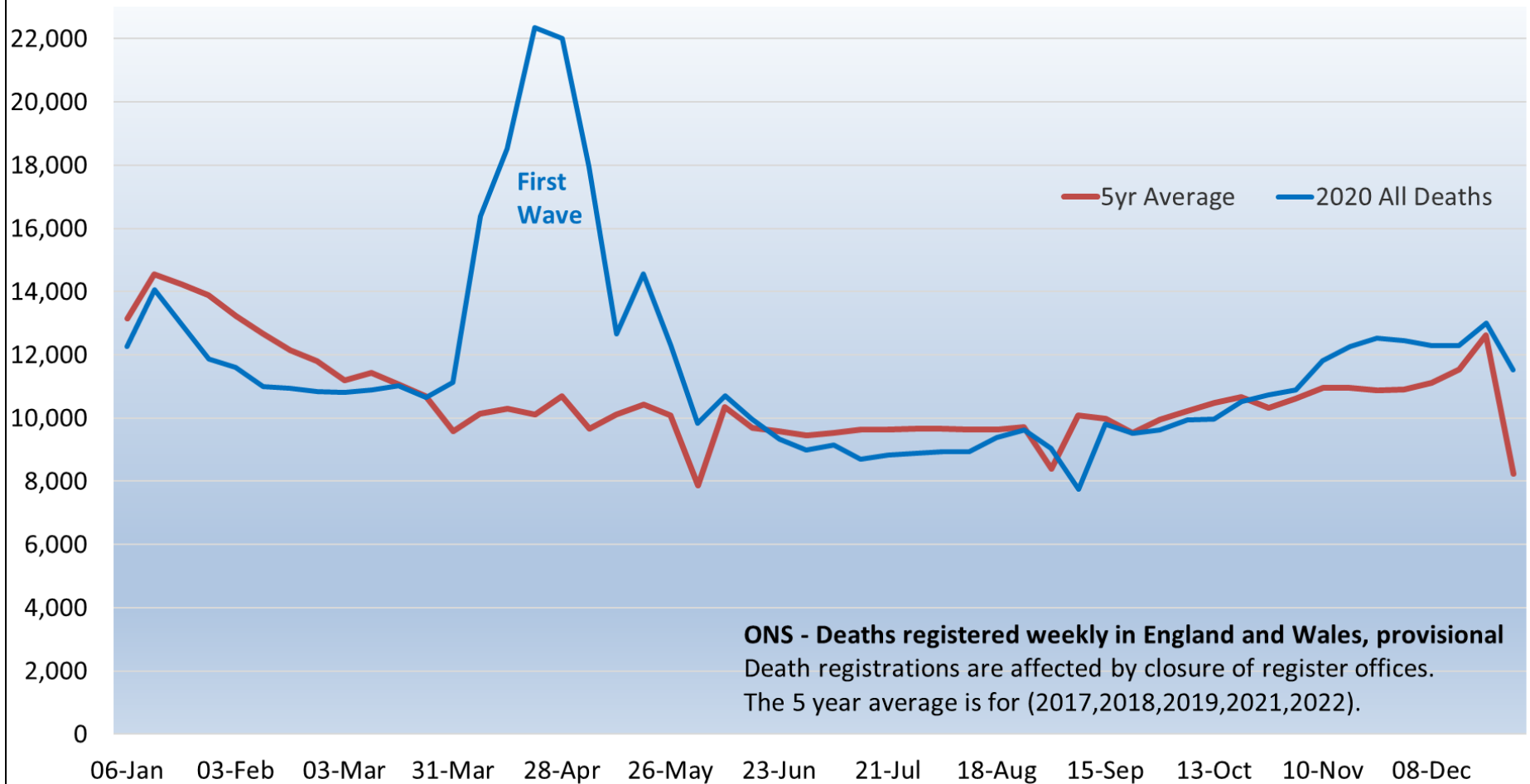


Source: Office for National Statistics (ONS)

Weekly Death Counts – England and Wales



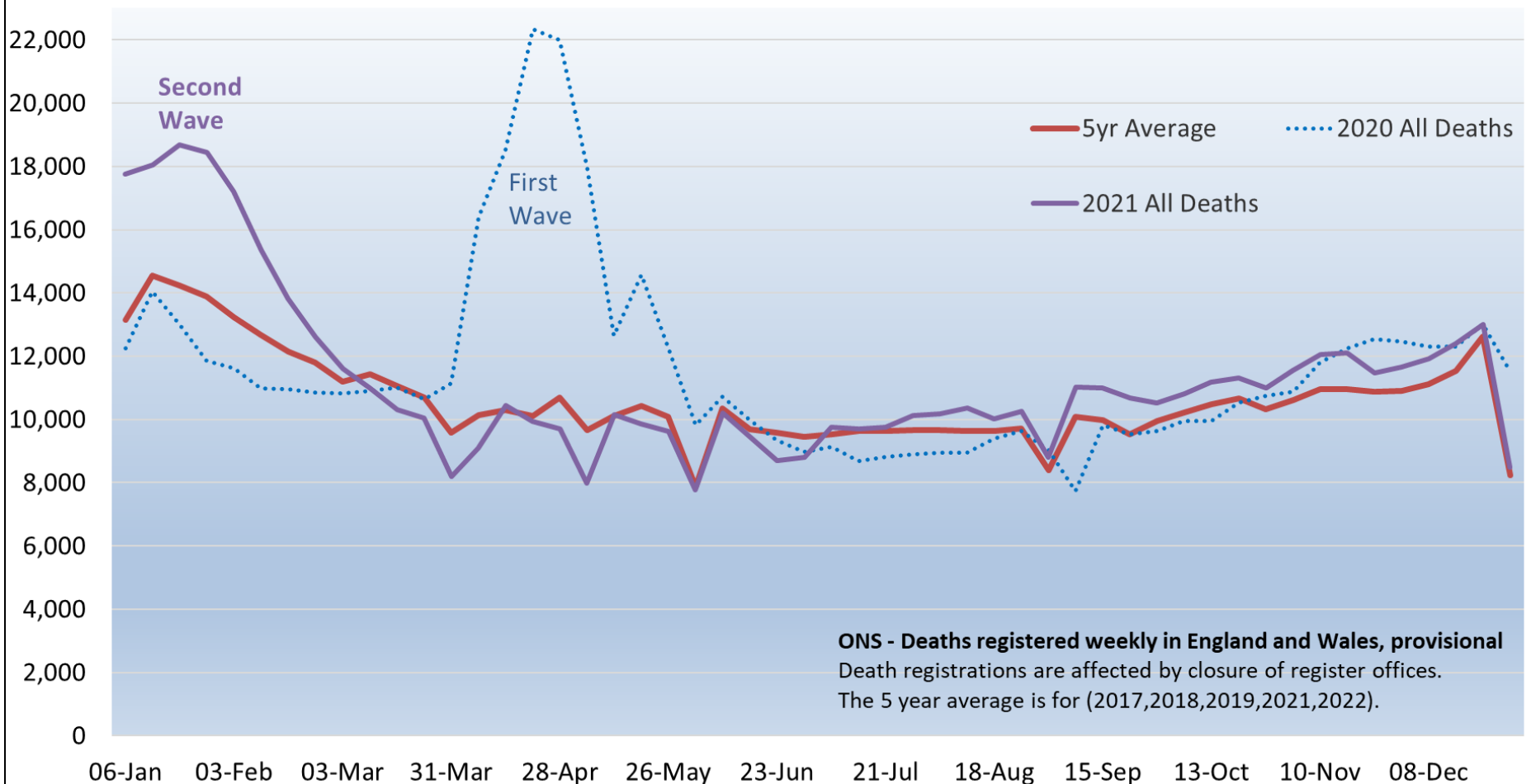
Weekly Deaths in England & Wales - 2023 vs Five Year Average



Weekly Death Counts – England and Wales



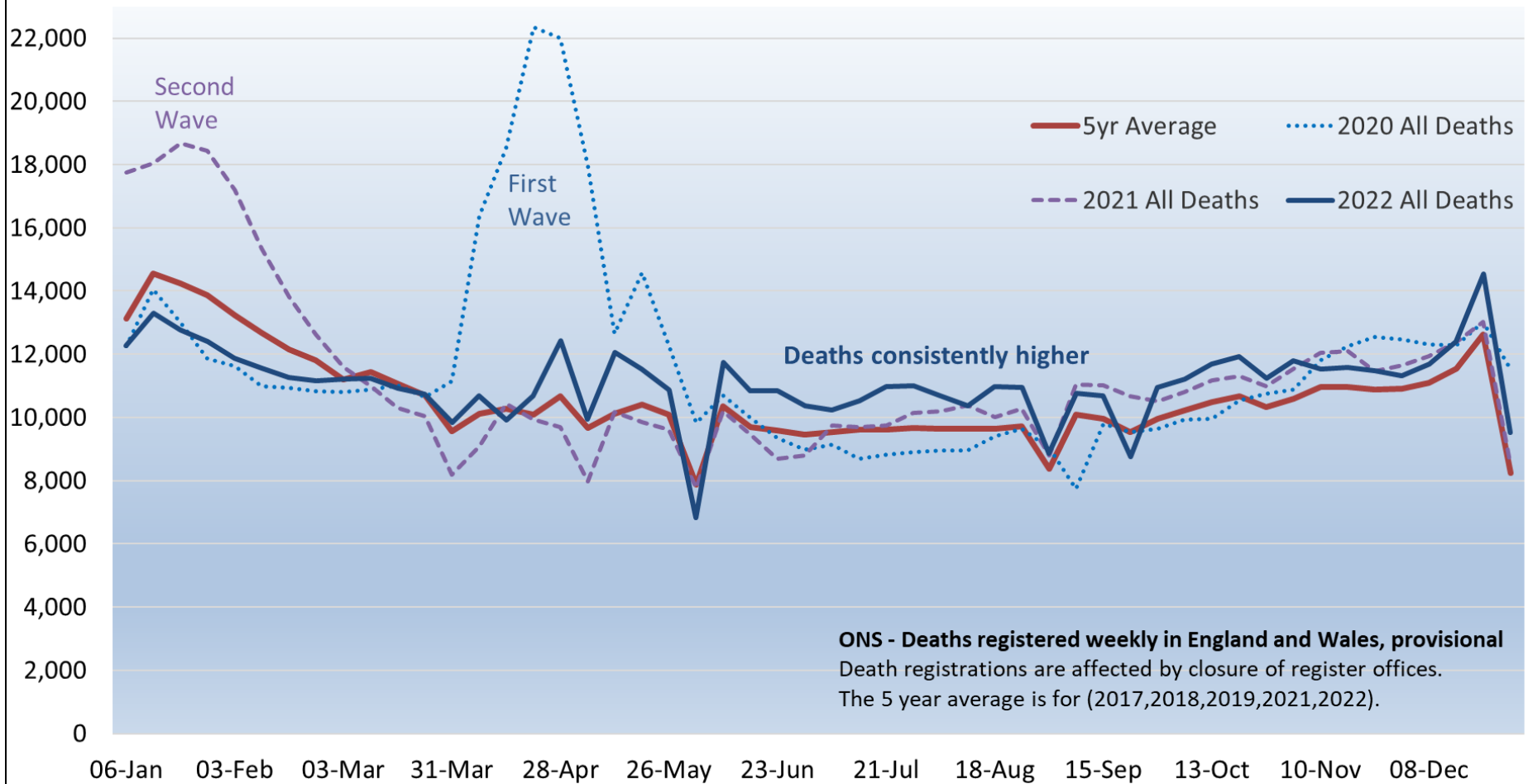
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Weekly Death Counts – England and Wales



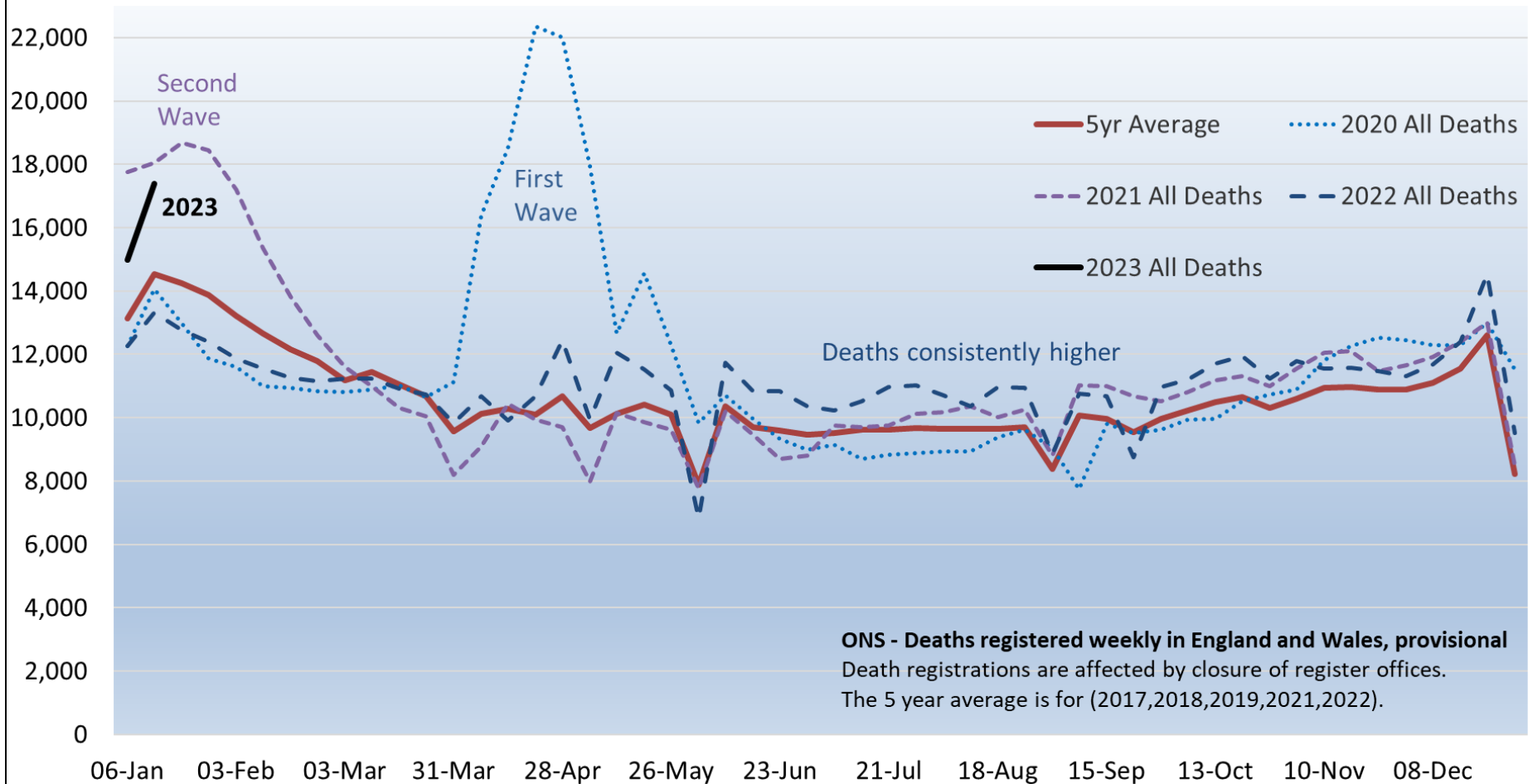
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Weekly Death Counts – England and Wales



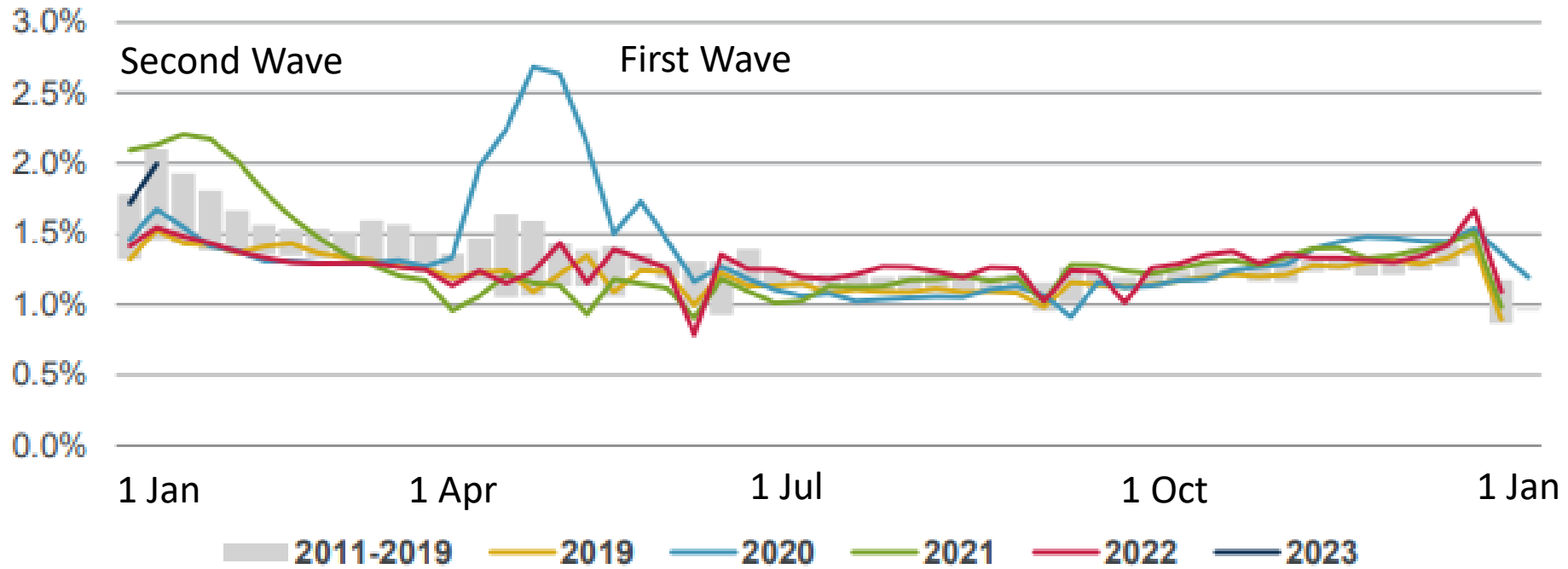
Weekly Deaths in England & Wales - 2023 vs Five Year Average



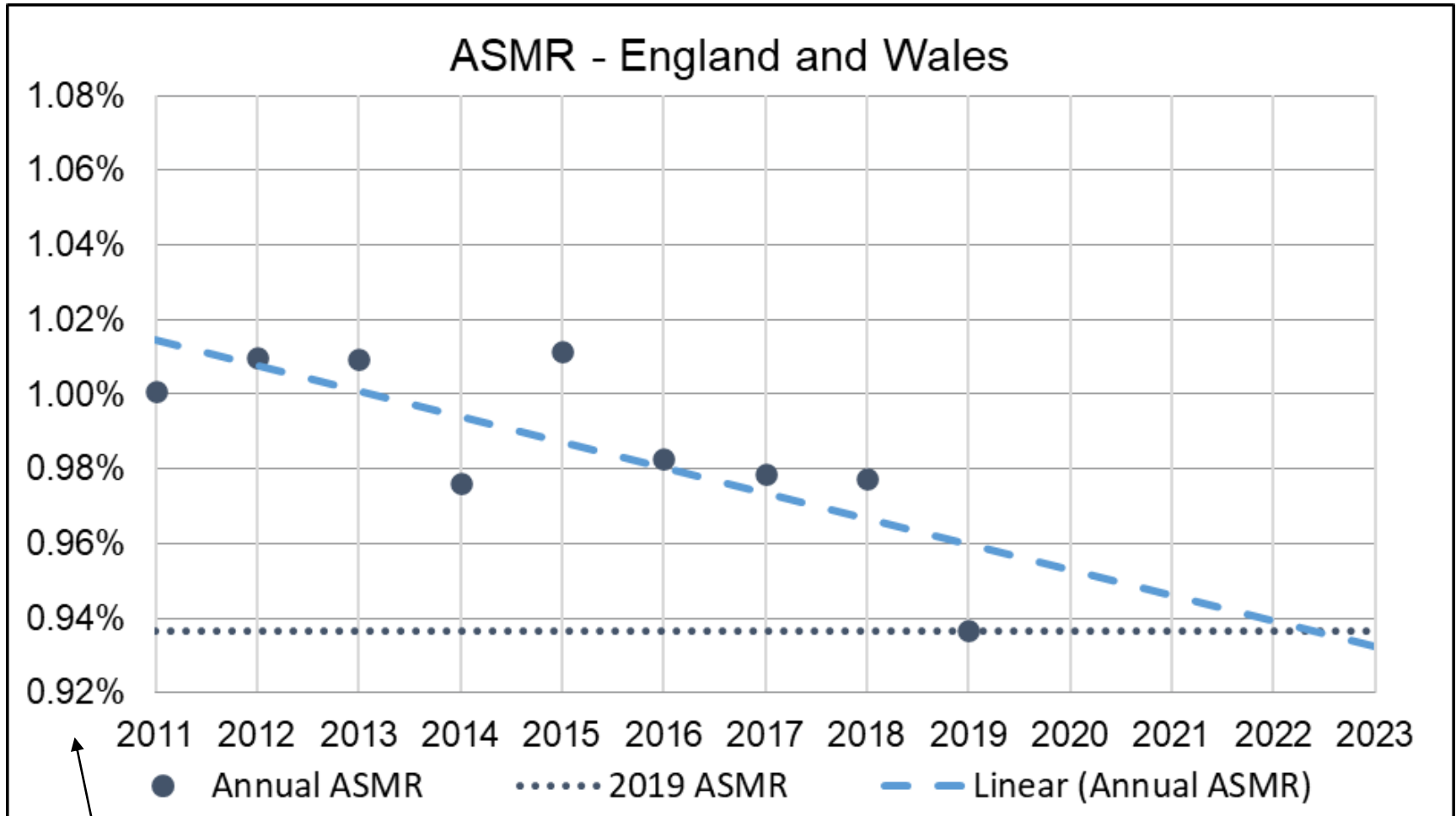
Age-Standardised Mortality



Chart 1: Weekly standardised mortality rates in England & Wales for 2011 to 2023

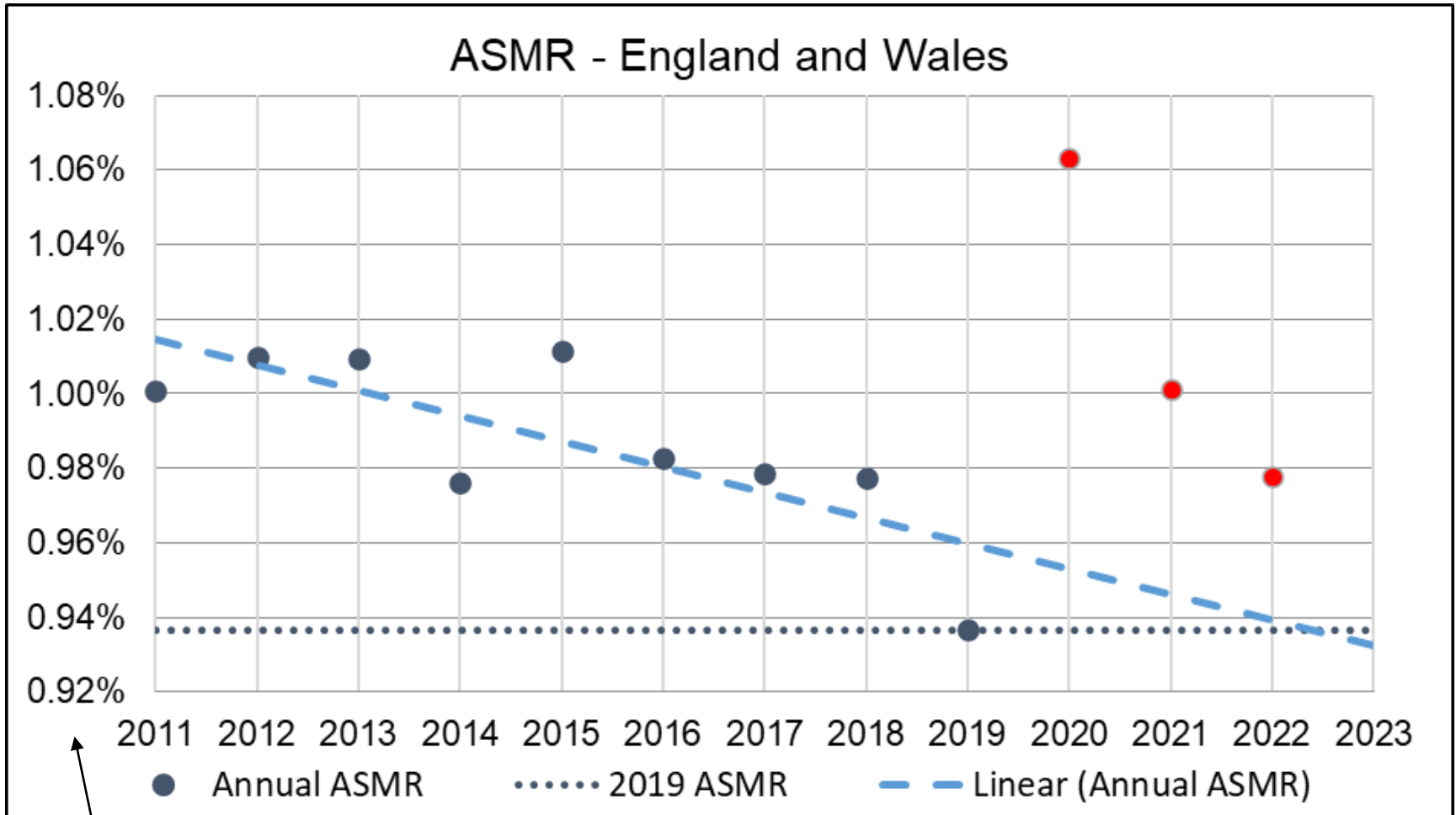


Baseline for Age-Standardised Excess Mortality (ASMR)



Axis truncated

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Axis truncated

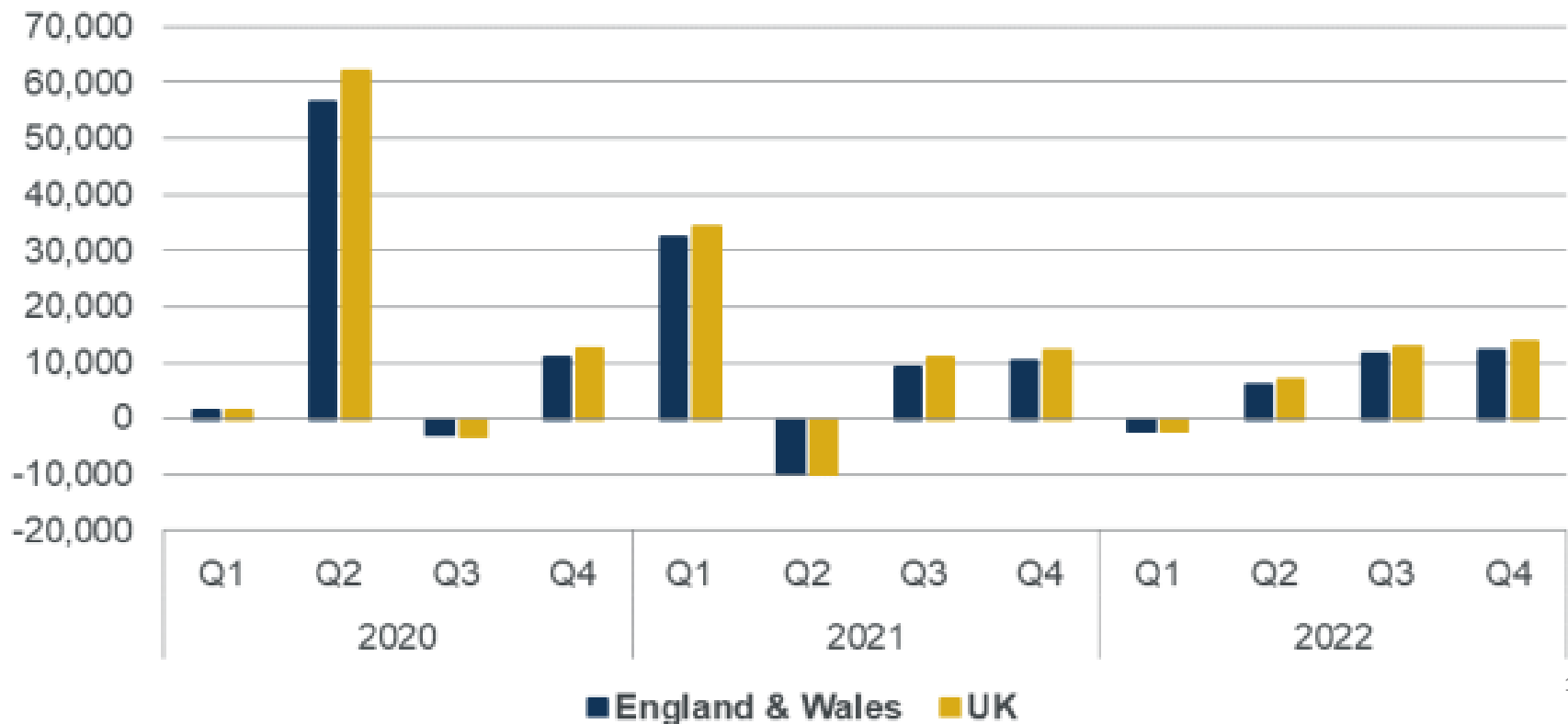
Age-Standardised Excess Deaths



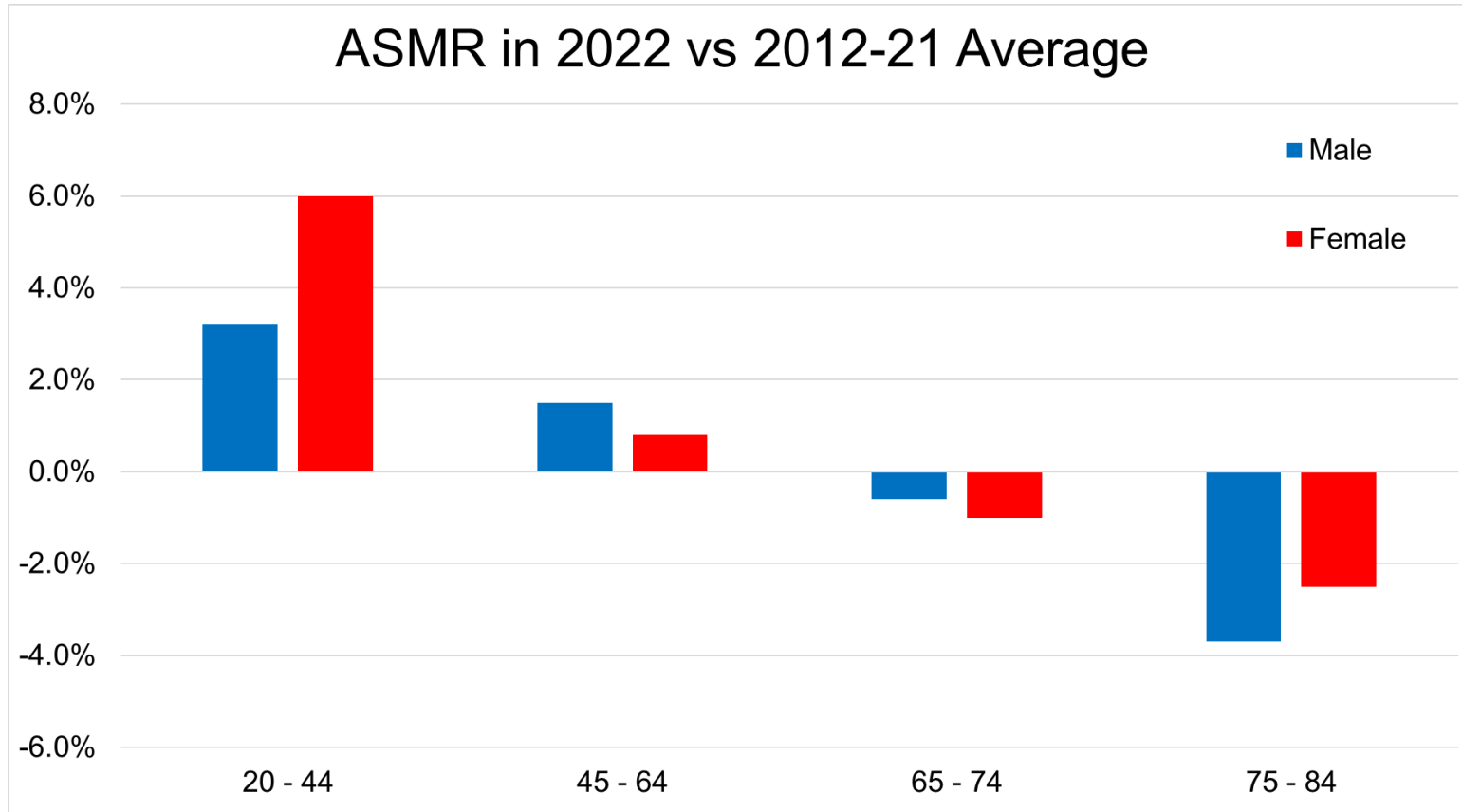
Table 2: Cumulative excess deaths

	England & Wales	United Kingdom
From the start of the pandemic (29 Feb 2020 to 13 January 2023)	143,200	160,000
From week 1 of 2023 (31 Dec 2022 to 13 January 2023)	7,500	8,500

Chart 9: Quarterly excess deaths (from week 10 of 2020)



Cumulative Age-Standardised Mortality Rates by Age and Sex



This is comparing to a **ten-year average** the **includes the peak pandemic years!**
We expect recent death rates to be **significantly below** this baseline.
Death rates for **younger adults** were higher in 2022.

Source: CMI Q4 Mortality Monitor



Mortality by Cause

Chart 2: Weekly excess deaths, deaths with COVID on the death certificate, and deaths with a positive test – in the past 26 weeks

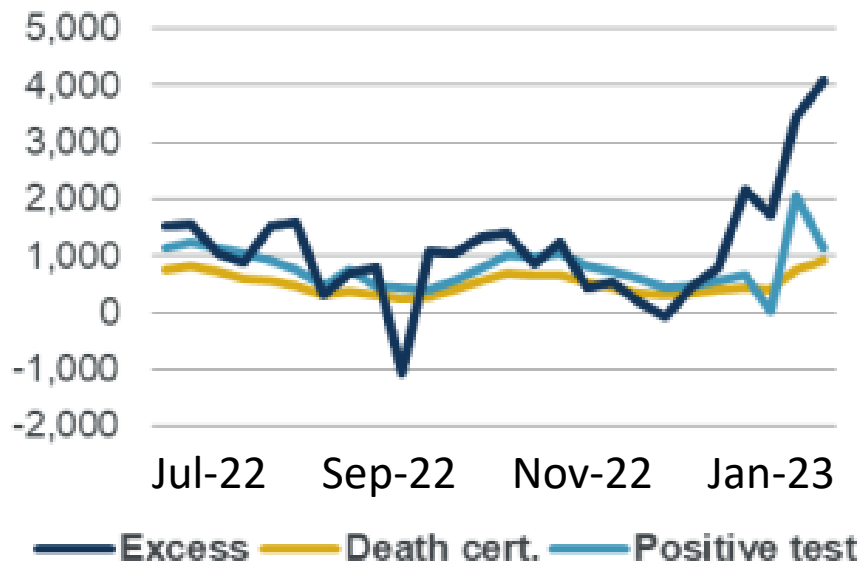
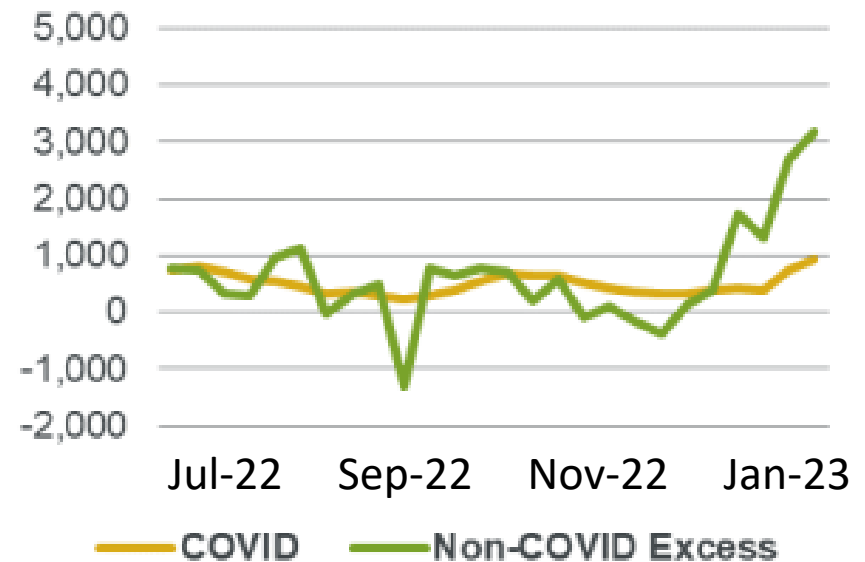


Chart 3: Weekly COVID deaths and Non-COVID excess (Excess minus COVID deaths) – in the past 26 weeks



In 2020 and 2021 the excess was essentially all COVID.

Now... it's complicated!

What's driving the excess?



- If working with counts – ageing population. Not the case for ASMR.
- Demand pressures on the healthcare system
 - Ambulance waiting time for Cat 2 emergencies > 1 hour
 - Over 700,000 A&E attendances > 4 hours in December alone.
- Deaths arising directly from COVID and from late 2022 also flu.
- Summer heatwaves and cold winter – cost of living adds to this.
- Missed and delayed diagnoses from early in the pandemic
 - BHF research showed half a million missed new BP prescriptions.
- Elevated cardiovascular risks following COVID infection.
- Factors all interact, e.g. NHS staff sick with COVID -> more demand pressure

A&E Patients spending more than 12 hours from decision to admit to admission



For every **82** patients waiting **6 to 8** hours → **One extra death**

For every **72** patients waiting **8 to 12** hours → **One extra death**

*Source: Jones S, et al. Emerg Med J 2022; 39:168-173.
doi:10.1136/emered-2021-211572*

Around **500 additional deaths** per week from December delays.

