# Introduction

Anecdotal evidence indicates a possible increase in people found dead at home in a decomposing state in recent years.1 Office for National Statistics (ONS) data show there was a large increase in the number of people dying in private homes during the pandemic (Figure 1).2

Chart, line chart

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In addition to an increase of people dying at home, researchers comparing the year before and the year after 23 March 2020, when the first lockdown began, examined post-mortem reports and found a significant increase of severely decomposed bodies having autopsies since the beginning of the first lockdown, linked to social isolation of lockdown and the pandemic.3 However, this has not been examined prior to 2019, which was a notably better year for mortality in England and Wales, nor have trends over time been explored.

Prior to 2019, trends in mortality had been worsening, with austerity and the resulting health and social care cuts linked to the deterioration in health outcomes.4 This was initially focused on older populations, after approximately 2013/14, but now is more widespread. It is therefore possible that the increase in people decomposing at home preceded the pandemic, and the probably “good” mortality year for 2019, due to wider factors at play as a result of public service cuts.

# Research question

Was there in an increase in the number of people found dead and decomposing at home over time from 1970-2021 in England and Wales?

## Hypothesis:

There was an increase in people found dead and decomposing at home following the cuts to health and social care imposed from 2010 due to increased social isolation.

# Aims

* Establish the number of people found dead at home decomposing annually by sex from 1970-2021 in England and Wales
* Assess if any change in trend is significant using statistical analysis

# Methods

Evidence of decomposition is not routinely recorded nor shared in public records. However, in the research mentioned the authors found that 90% of post-mortems which were recorded as “1a unascertained/unascertainable” were due to severe decomposition. The ICD-10 code R99 refers to “other ill-defined and unknown causes of mortality”,5 if the number of severely decomposed deaths in the community were to increase, then the use of the code R99 would most likely increase concordantly. Therefore, we suggest that this code may be used as a marker of (severe) decomposition. This will miss those decomposed but not so much as to disable the pathologist/coroner to determine a cause of death.

Using publicly available data from ONS, we will extract deaths coded R99 in England and Wales annually from 1970 to 2021 for men, women, and total, by age group. We will calculate age-specific mortality rates (ASMR) using the ONS mid-year population estimates for England and Wales.

## Data sources

* Mid-year population estimates for England and Wales, by age and sex, 2001-2021 ONS6
* Deaths by age, sex, and cause, 2001-2021, ONS7
* Population estimates and deaths by age, sex and cause, 1970-2021, ONS8
* Deaths registered at home, 2001-2021, ONS9

## Analysis

We will carry out time-trend analysis to detect any significant changes in age-specific mortality rates from code R99 between 2001-2021 by sex.

## Limitations

Using the code R99 will miss a great number of cases but may act as a useful marker. Our results will not allow determination of causality.

# References

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