NIHR | Policy Research Unit
Older People and Frailty

National Early Warning Scores and COVID-19 deaths in care homes: a longitudinal ecological study

Daniel Stow, Robert Barker,
Fiona Matthews, Barbara Hanratty

Executive Summary

June 2020

National Early Warning Scores and COVID-19 deaths in care homes: a longitudinal ecological study

Daniel Stow, Robert Barker,
Fiona Matthews and Barbara Hanratty

Executive Summary

This study addresses the question:
Can information routinely collected by some care homes contribute to surveillance of COVID-19 infections in care homes?

Rationale

In England, a high proportion of COVID-19 deaths have occurred in care homes. Tracking the path of the disease in the care home population has been difficult because of the absence of routine health data in this setting, and delays to the introduction of testing. In such situations, it is important to make best use of any data that are already being collected. Our study examined the clinical data (temperature, respiratory rate, oxygen saturation, blood pressure and conscious level) that are being collected in an increasing number of care homes, to calculate National Early Warning Scores (NEWS).   We were interested to see if changes over time in NEWS or its components, could act as an early warning signal for COVID-19 infections in care homes.

Method

We analysed data collected with the same commercial software package, from 6,464 care home residents in 460 care home units, located in 46 local authority areas in England. We obtained 29,656 anonymised resident-level NEWS (and components), collected between 29th December 2019 and 20th May 2020. Baseline values for each measure were calculated using the data collected before March 2020. We compared changes over time in the NEWS components, with changes in registered deaths of care home residents in corresponding geographical areas, up to 10th May 2020. Note that we did not have death data that linked directly with the care homes in our study.

Findings

- The proportion of above-baseline NEWS increased from mid-March 2020, and closely followed the rise and fall in COVID-19 deaths over the study period.

- The proportion of above-baseline oxygen saturation, respiratory rate and temperature measurements increased **approximately two weeks before peaks in care home deaths** in corresponding geographical areas.

Conclusions and Implications

- This study reinforces the need to collate data from care homes, to monitor and protect residents' health.

- Data collected for NEWS may make a useful contribution to disease surveillance in care homes during the COVID-19 pandemic.

- Some combination of oxygen saturation, respiratory rate and temperature could be prioritised, as they appear to signal rise in mortality as well as total NEWS.

- Our analysis used data collected with one specific IT supplier's product. To better support disease surveillance in care homes, the following could be considered: Rationalising the use of software suppliers, harmonising the processes for collecting information across care homes/areas, and ensuring there is a mechanism for sharing and linking with local and national health data.

NIHR | **Policy Research Unit**
Older People and Frailty

This document is available in large print.

Please contact the NIHR Older People and Frailty PRU for assistance.

Email: pru-manager@manchester.ac.uk

Telephone: 0161 306 7797