

# Seasonal variation in pressures on trauma services and in deaths following hip fracture

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## Introduction

Seasonal variation in numbers of patients presenting with hip fracture is well recognised, and the potential implications of this for trauma and orthogeriatric service are significant.<sup>1</sup> We set out to examine whether increased pressures in the winter months might lead to poorer outcomes for the frail people who typically suffer this injury.

## Method

The National Hip Fracture Database (NHFD) has been reporting data for all patients presenting in England, Wales and Northern Ireland since 2007, and monthly data for over 175 hospitals are made freely available on the Crown Informatics website [www.nhfd.co.uk](http://www.nhfd.co.uk). We analysed this published data for the 450,754 people who presented during the 7 years from April 2011 to March 2018 (Fig 1).

## Results

We found the previously described seasonal variation in the numbers of people presenting: 8.0% more people presenting in the

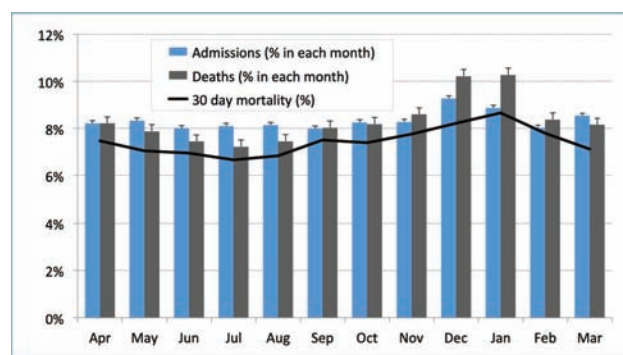


Fig 2. Admissions and deaths from hip fracture by month

winter months (December–February) than in the summer (June–August). However, the total number of people dying within 30 days of hip fracture was 30.5% higher among those presenting in the winter (Fig 2).

In total, 33,649 people (7.46%) died within 30 days of presenting with hip fracture, but this figure varied significantly ( $p < 0.001$ , chi-square test); ranging from just 6.66% in July to a peak of 8.65% (29.9% higher) in January.

## Conclusions

The public health impact of these findings is significant: an 8% increase in hip fractures during the winter would equate to 1,250 additional fractures during these months each year.

Patients average over 20 days in hospital, so these additional cases will compound the stresses on hospital services over the Christmas and New Year holiday period. Such factors must be taken into consideration when organising trauma and orthogeriatric services if we are to try and avoid the additional 325 deaths that we found to occur each winter. ■

## Reference

- Johansen A, Boulton C, Neuberger J. Diurnal and seasonal patterns in presentations with hip fracture – data from the national hip fracture database. *Age and ageing* 2016;45:883–6.

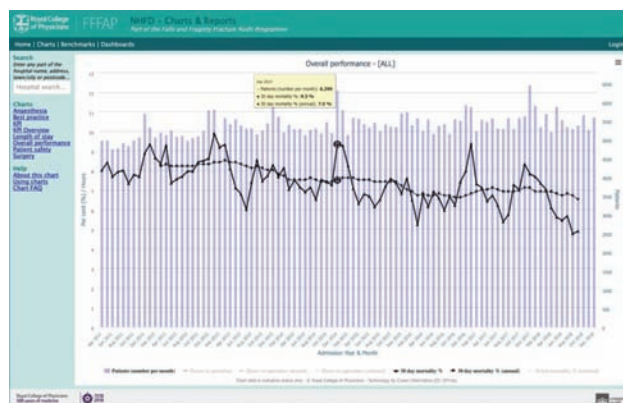


Fig 1. 30-day mortality of patients presenting with hip fracture between April 2011–March 2018

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