

Variations in Hospital Deaths?

Adebowale Osinowo, (aosinowo@swpho.nhs.uk) and Julia Verne
South West Public Health Observatory

1. Introduction

Each year around 470,000 deaths are recorded in England. Death occurs largely in old age and over half of all deaths occur in hospital. The National End of Life Care Strategy aims to enable choice for people at the end of life such that a lowered likelihood of death in hospital is generally taken as a proxy for improved choice.

The proportion of deaths occurring in all hospitals (i.e. acute, community and other hospital establishments) is an important indicator for end of life care (EOLC). However this measure varies widely in England. Between 2007 and 2009 hospital deaths ranged between 43% and 75% across Local Authorities (LAs) in England, with about 12% of LAs having less than 50% hospital deaths.

Funnel plots are powerful tools that can highlight unexpected variation and are adaptable for investigating the existing differences between LAs. This analysis seeks to use funnel plots to explore variations in the proportion of hospital deaths in LAs by age of population.

3. Results

The variation in the proportion of hospital deaths across LAs is overdispersed, with more LAs lying outside the control limits of three standard deviations than would be expected if the size of an LA were the only factor predicting dispersion of hospital death (Figure 1). A similar pattern of proportions dying in hospital was seen when different age segments of the population (i.e. under 65 years, 65-84 years and over 85 years) were considered.

Overdispersion often results from large numbers of events and/or case-mix.¹ Though the plot shows marked differences in proportions dying in hospital across LAs, this is likely to be driven by a variety of factors that include social deprivation, demographics and importantly how local EOLC services are organised. For example, some LAs provide specialist palliative care services within hospitals while others provide this service elsewhere. EOLC in less well organised LAs may result in people near the end of life being unnecessarily admitted to die in hospital.

This highlights the importance of avoiding crude place-to-place comparisons or the use of proportion of deaths occurring in hospital as a single performance measure for EOLC provision.

5. References

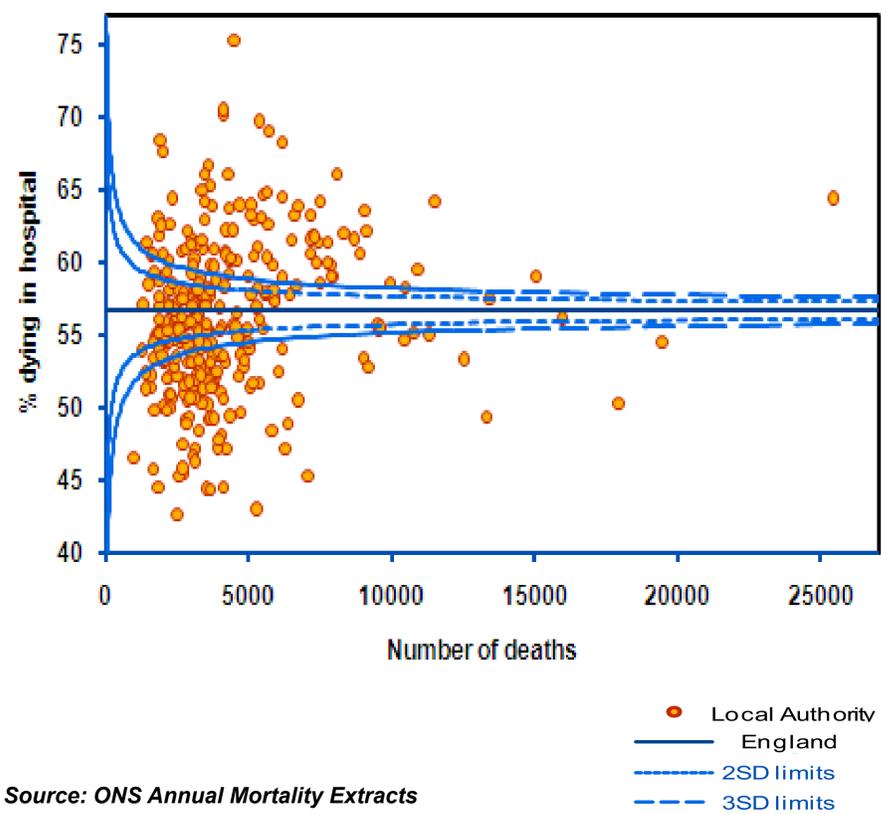
¹ Association of Public Health Observatories (2009). Technical Briefing: *Statistical process control methods in public health intelligence*

2. Methodology

Mortality data, based on death certificates produced by the Office for National Statistics (ONS), provides information on cause and place of death by age, gender and locality.

Age-specific mortality data and place of death were extracted from the ONS annual mortality extract for deaths registered in England between 2007 and 2009. Hospital deaths as a proportion of all deaths by LA of residence were calculated and funnel plots were used to study variations by population size and by age.

Figure 1: Funnel plot of variation in hospital deaths by Local Authorities in England, 2007-2009



4. Conclusions

Place-to-place comparison of hospital deaths reveals differences which must be understood to ensure equality of care. A national performance measure for EOLC that is based on proportions dying in hospital will not necessarily identify good or bad practice but rather a need to further understand the causes of existing variations.