

Trends in asthma mortality in Great Britain

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This factsheet is an update on factsheet 92/1 extended to all ages.

Since 1958, the total number of deaths certified as due to asthma has fluctuated (figure 1). The peak in the 1960s affected all age-groups, although it was most noticeable in the younger age groups. More recently, the number of deaths started to rise again from the early 1980s, peaking in 1988 at just over 2000, although this time, the increase was more noticeable in the older age-groups. Since then asthma deaths have begun to fall, and are currently around 1500 per year in England & Wales. The majority of asthma deaths occur in those aged over 45, with around 40% of deaths occurring in the 75+ age-group. Only a small proportion (1%) occur in children.

Age patterns

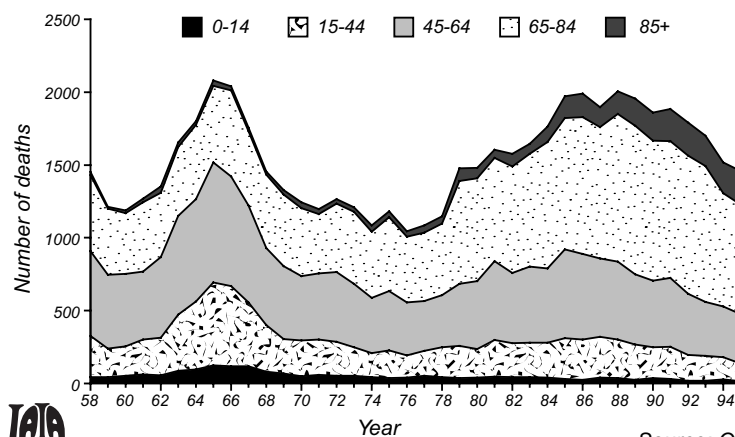
Figure 2 shows the trends in age-specific rates for England & Wales. The 1960s peak is clear in the 15-44 and 45-64 age-groups. Since the early 1980s, rates among those aged under 64 have tended to decrease, whilst rates in the elderly have increased, at least until the early 1990s.

It is not clear to what extent the increase in the elderly is real or due to the effects of changes in coding and diagnostic transfer (LAIA factsheet 92/1). In the last twenty years, there have been three changes in the coding of causes of death. In 1979, a coding rule was abolished which led to an overall increase of 28% in the number of deaths attributed to asthma. In 1983, the reinterpretation of a coding rule (Rule 3) led to a 15% increase in deaths attributed to asthma in the 75+ age-group. In 1992, Rule 3 reverted to its pre-1984 interpretation, although this did not lead to a particularly noticeable decrease in mortality rates. Asthma mortality rates in the elderly may also be affected by diagnostic transfer, when deaths which may have been attributed to related diseases such as chronic bronchitis are now labelled as asthma. Despite these coding changes, it is likely that there has been a small real increase in deaths over and above the increases due to coding changes.

Country variations

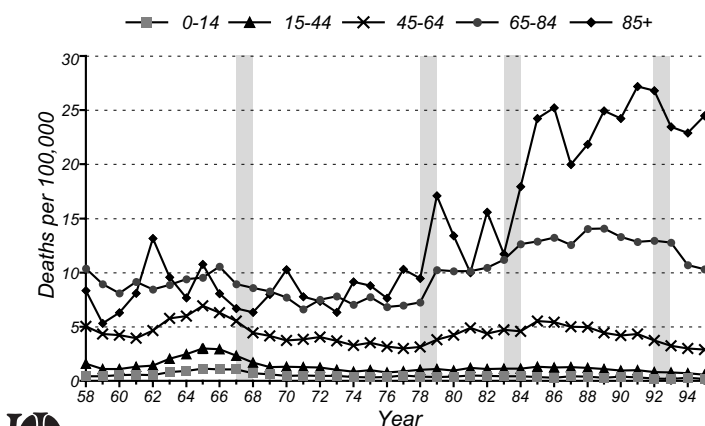
Figure 3 shows the trends in age-sex standardised mortality rates in 0-44 year olds for England, Wales and Scotland. Further information on the calculation of these rates can be found in the footnote. In England, rates were steady through the early 1980s before beginning to decrease. In Scotland, they

Figure 1: Deaths attributed to asthma. Males & females combined, England & Wales 1958-95.



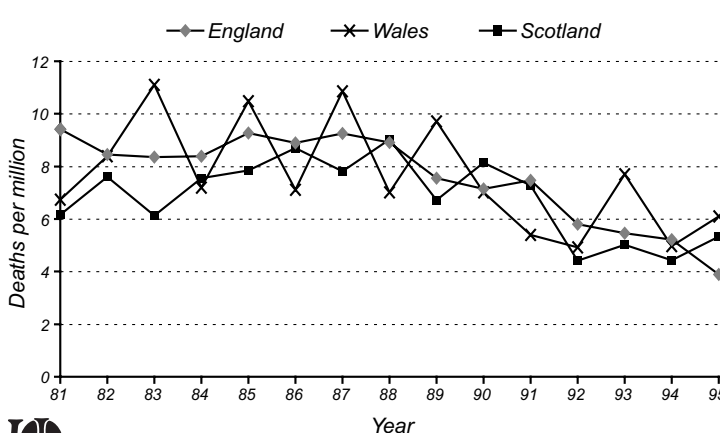
Source: ONS

Figure 2: Age-specific mortality rates for asthma. Males and females combined, England & Wales 1958-95.



Source: ONS

Figure 3: Age sex standardised mortality rates from asthma, ages 0-44, England Wales & Scotland, 1981-95.



Source: ONS & General Register Office, Scotland

increased slightly, before declining through the late 1980s. Rates in Wales have not been stable, due in part to the relatively small numbers involved.

Figure 4 shows similar data for the 45-84 age-group. In England, rates rose slightly in the early 1980s, before decreasing. Rates in Scotland remained fairly constant through the 1980s, before beginning to decrease in the early 1990s. Wales has consistently higher rates, but these also began to decrease from the early 1990s.

Regional patterns

Figure 5 shows the standardised mortality ratios (SMRs), with 95% confidence intervals, for the 0-44 and 45-84 age-groups for 1991-95 by region and country. The SMRs have been ordered by the value for the older age-group. The vertical line at 100 shows how the regions compare with the standard, which was taken to be England & Wales. Further information on SMRs and their calculation can be found in the footnote.

In the older age-group, Scotland and South Thames had the lowest SMRs. The 95% confidence intervals do not include 100, indicating that they are statistically significantly lower than 100. In contrast, the lowest SMRs in the younger age-group were for Trent, West Midlands and Northern Ireland, which all had SMRs over 100 for the older age-group. North West region's SMR for the older age-group was significantly higher than 100.

Summary

- Total deaths certified as due to asthma have fluctuated since the late 1950s. There have been two peaks - in the 1960s and in the 1980s. The number of asthma deaths are now decreasing.
- The 1980s peak was most noticeable among those aged over 65, especially the 85+ age-group. Changes in coding account for some of this increase.
- Trends since 1981 in England, Wales and Scotland are similar.
- The regional patterns of SMRs for asthma among the 0-44 and 45-84 age-groups are different.

Footnote

Calculation of age-sex standardised mortality rates and standardised mortality ratios

In this factsheet, age-sex standardised mortality rates have been presented in figures 3 & 4 and standardised mortality ratios (SMRs) in figure 5. These are useful when comparing rates between different populations and over time as the populations will have different age and sex structures which also change over time. SMRs are single summary figures, where a figure below 100 indicates lower than expected mortality and values above 100 indicate higher than expected mortality. To calculate both **age-sex standardised mortality rates and SMRs**, age/sex specific mortality rates are needed for a standard population - that of England & Wales is used here. Also, for each country or region, the observed number of deaths and population by 5-year age/sex group and year are needed. To obtain the **age-sex standardised mortality rates**, the expected number of deaths by year for each country was calculated by applying the England & Wales rates for 1981-95 to the country population for each 5-year age/sex group and summing to obtain the total. The age-sex standardised mortality rate was then calculated as the observed number of deaths divided by the expected number of deaths, multiplied by the all ages mortality rate for England & Wales for 1981-95. Similarly, the **standardised mortality ratios** presented in figure 5 were obtained by calculating the expected number of deaths for 1991-95. The observed number of deaths was then divided by the expected number of deaths for each age-group. In this case, the standard population used was England & Wales 1991-95. 95% confidence intervals were calculated using standard methods. If the confidence interval does not include 100, then the SMR is considered statistically significant.

Figure 4: Age sex standardised mortality rates from asthma, ages 45-84, England Wales & Scotland, 1981-95.

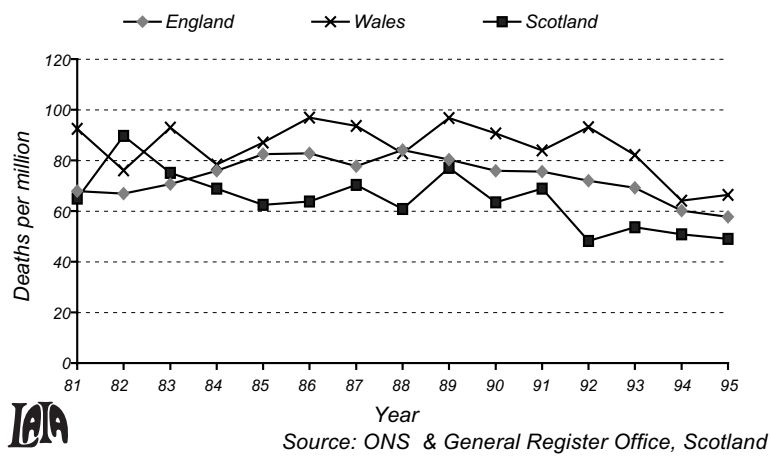
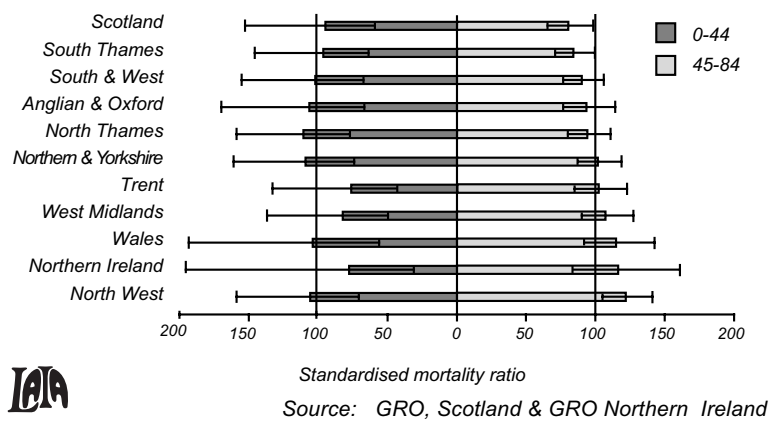


Figure 5: Age sex standardised mortality ratios for asthma. Ages 0-44 and 45-84, United Kingdom by Regional Health Authority, 1991-95.



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