

Child Deaths in the North East of England, April 2008 to March 2010

Background

The statutory process for Child Death Review, as mandated in Chapter 7 of Working Together [1], came into force in April 2008. Local Safeguarding Children Boards (LSCBs) were tasked with setting up Child Death Overview Panels (CDOPs) to review all deaths of babies, infants and children up to their 18th birthday. The purposes of the new procedures include gaining a more complete and accurate understanding of both the immediate and underlying causes of death in children, giving families more consistent local support, and giving feedback from the review process to help them understand and come to terms with their child's death. Although the procedures were designed around the need to gain greater understanding of child deaths, neonatal deaths are also scrutinised by the overview panels. However, the epidemiological approach to child deaths is to use the time frame in which the deaths occurred, rather than the birth cohort approach used for calculating perinatal mortality, neonatal mortality, and infant mortality; therefore statistics gathered using the child death processes do not exactly map onto those published by the Office for National Statistics (ONS) or those formerly published by the Centre for Maternal and Child Enquiries (CMACE).

In line with national guidance that suggested the optimum population size for each CDOP should be between 500,000 and 1,000,000, four CDOPs were convened: North of Tyne (for the LSCBs in Northumberland, North Tyneside and Newcastle); South of Tyne (for Gateshead, South Tyneside and Sunderland); Durham (for County Durham and Darlington); and Tees (for Hartlepool, Stockton-on-Tees, Middlesbrough, and Redcar & Cleveland).

The Regional Maternity Survey Office (RMSO) was funded by each CDOP to assist with the ascertainment of deaths. This was especially relevant for the neonatal and infant deaths, which have been collected by the RMSO since 1981 as part of the Perinatal Mortality Survey. The RMSO was also asked to provide relevant supporting information (such as copies of the perinatal data collection forms). A further role was to collate all the deaths in the North East so that overarching reports could be produced which would complement local CDOP annual reports by aggregating larger numbers and, over time, giving context to local data. This is the first such analysis.

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Summary

Child death review procedures as set out in Chapter 7 of Working Together [1] are now firmly established throughout the North East of England. Most child deaths occur in infancy, with perinatal events and congenital anomalies being the dominant causes, while the highest proportion of deaths with potentially modifiable factors is in the 15 to 17 year group. All categories of child death are associated with material deprivation.

Methods

Neonatal and infant deaths were reported to the RMSO using long-standing arrangements for ascertainment: direct reporting from healthcare providers, secondary reports from the Coroners, information from other agencies including police, and from CDOP coordinators. Deaths of older children were sometimes reported directly to the RMSO and sometimes via LSCBs. Spreadsheets of cases known to each CDOP were matched with Office for National Statistics (ONS) death registration data to ensure completeness. Duplicate cases were identified and resolved. It was not always possible to ascertain which deaths had merely been reported to the Coroner, which had received a post-mortem examination mandated by the Coroner, and which had been subject to an inquest.

Results

There were 403 child deaths in the North East from April 2008 to the end of March 2010. A slight male predominance was evident within most of the standard age bands (Fig 1). Nearly 2/3 (239) of all deaths were in infancy (under 1 year), and 71% (176) of infant deaths were within the first 28 days. Deaths were numerically fewest between 1 and 14 years, while 15 to 17 year olds incurred disproportionate numbers of deaths. This pattern reflects national findings and is similar whether rates or absolute numbers are charted. The categories of deaths (Fig 2) to some extent reflected the ages at which the children died, in that most deaths from 'congenital anomalies' and 'perinatal events' occurred in the first postnatal year.

Cross-tabulating age bands with category of death, but removing any separation by sex, gave the analysis shown in table 1. Perinatal causes (132) accounted for nearly a third of all child deaths. 'Sudden unexplained deaths' were the second most prevalent cause of post-neonatal infant death, after 'congenital anomaly', but a few of these occurred throughout childhood. In the 15 to 17 year group, 'suicide or self harm' accounted for as many deaths as 'trauma'. 'Acute or chronic medical or surgical conditions' (that is, deaths from non-infectious diseases) were distributed reasonably evenly across the age groups after infancy.

The categories of death have been analysed by material deprivation quintiles of the area of residence of the child using both quintiles for England (Fig 3), and the North East (Fig 4). The difference reflects the fact that an area in, for example, quintile 3 for the North East might be in quintile 2 for England as a whole. The effect of these separate analyses is striking. The analysis using quintiles for England shows that the most deprived (quintiles 1 and 2) included almost three quarters of the deaths in most categories, suggesting a strong association between deaths and deprivation. The analysis using North East quintiles showed a much more even distribution of deaths in most categories, although the effect of deprivation remained pronounced for 'congenital anomalies' and 'perinatal deaths'. The very small numbers of deaths in children from ethnic minorities precluded any meaningful analysis.

The Coroner for the area in which the child died was involved in roughly half of the cases, but was much less likely to be involved in perinatal cases and much more likely to be involved in deaths in the 15 to 17 year olds, reflecting the nature of the cause of death in each of these groups. Overall, 95 (27%) of the deaths were known to be Coroners' cases but this may be an underestimate.

In 2009, the categorisation of 'preventability' was changed: instead, CDOPs were asked to state the presence or absence of 'modifiable factors' in the causal pathway leading to a child's death. In 22% of all deaths, either the case discussants agreed that the death was actually or potentially preventable, or they identified modifiable contributory factors. Such a categorisation was found least frequently among the neonatal deaths (7%) and most frequently among the 15 – 17 year olds (43%).

Conclusion

This is the first presentation and analysis of aggregated data on patterns of child death in the North East following the introduction of the child death review procedures. The association between deaths and deprivation is evident, especially among deaths from perinatal causes and congenital anomalies. There are two implications of the relatively small numbers in many of the cells in table 1. The first is that it is important to aggregate data over a much larger population than is covered by any single CDOP, and to do this over more than one year, if any systematic relationship between categories of death and age group, or temporal trends, are to be identified statistically. The second is to highlight the importance of detailed case review for each individual death in order to tease out lessons that can drive quality improvements, especially in health and social care.

Definitions

Neonatal deaths: deaths up to 28 postnatal days

Infant deaths: deaths up to 365 postnatal days

Table 1. Number of infant and child deaths in the North East of England 2008-2010 by age group and category of death

Category of Death	Age Group						
	<28 days	< 1	1-4	5-9	10-14	15-17	Total
Deliberate injury	0	1	0	0	0	1	2
Suicide/self harm	0	0	0	0	2	11	13
Trauma	0	5	6	6	9	10	36
Malignancy	1	0	6	3	8	9	27
Acute medical/surgical condition	1	1	7	7	7	9	32
Chronic medical condition	0	3	12	6	7	4	32
Congenital anomalies	48	24	6	4	2	3	87
Perinatal/neonatal event	118	12	1	1	0	0	132
Infection	1	4	5	2	1	2	15
Sudden unexplained death	1	19	4	0	1	2	27
Total	170	69	47	29	37	51	403

Figure 1. Number of infant and child deaths in the North East of England 2008-2010 by sex and age group.

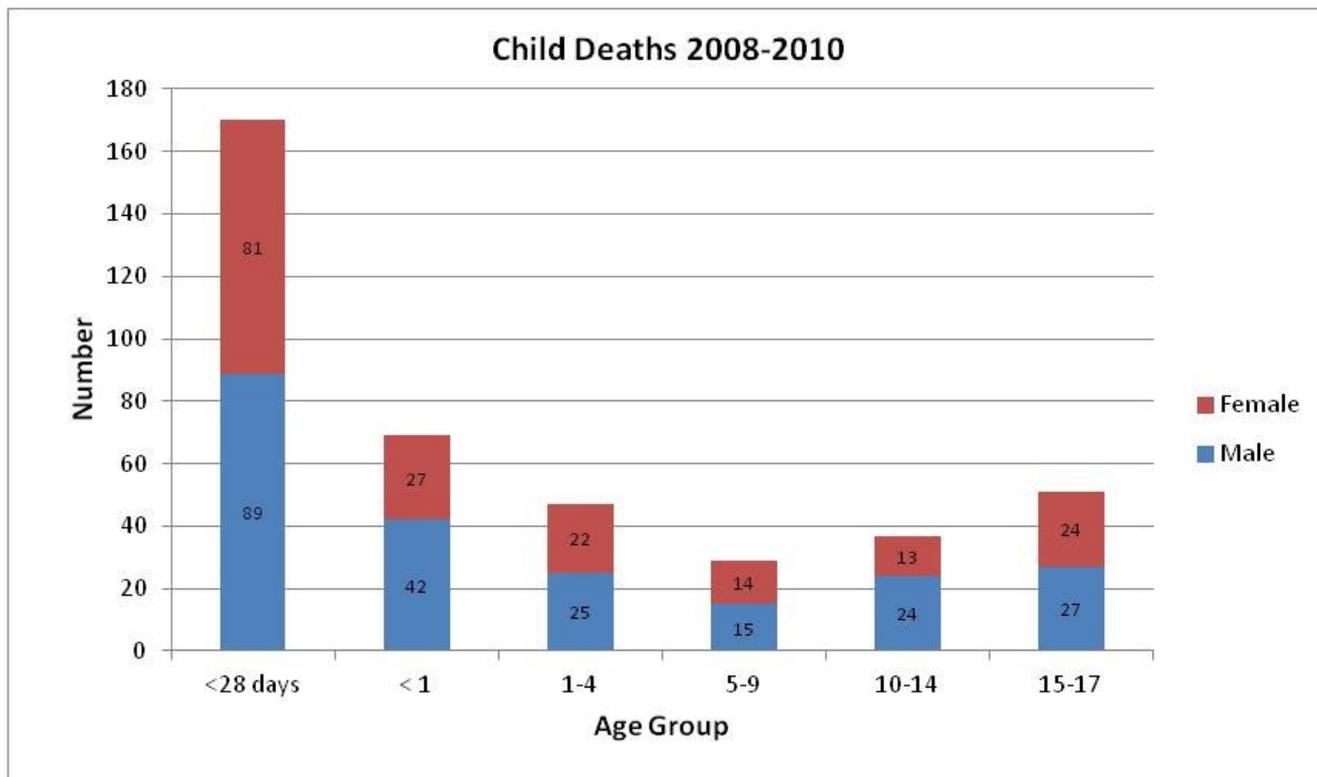


Figure 2. Number of infant and child deaths in the North East of England 2008-2010 by sex and category of death

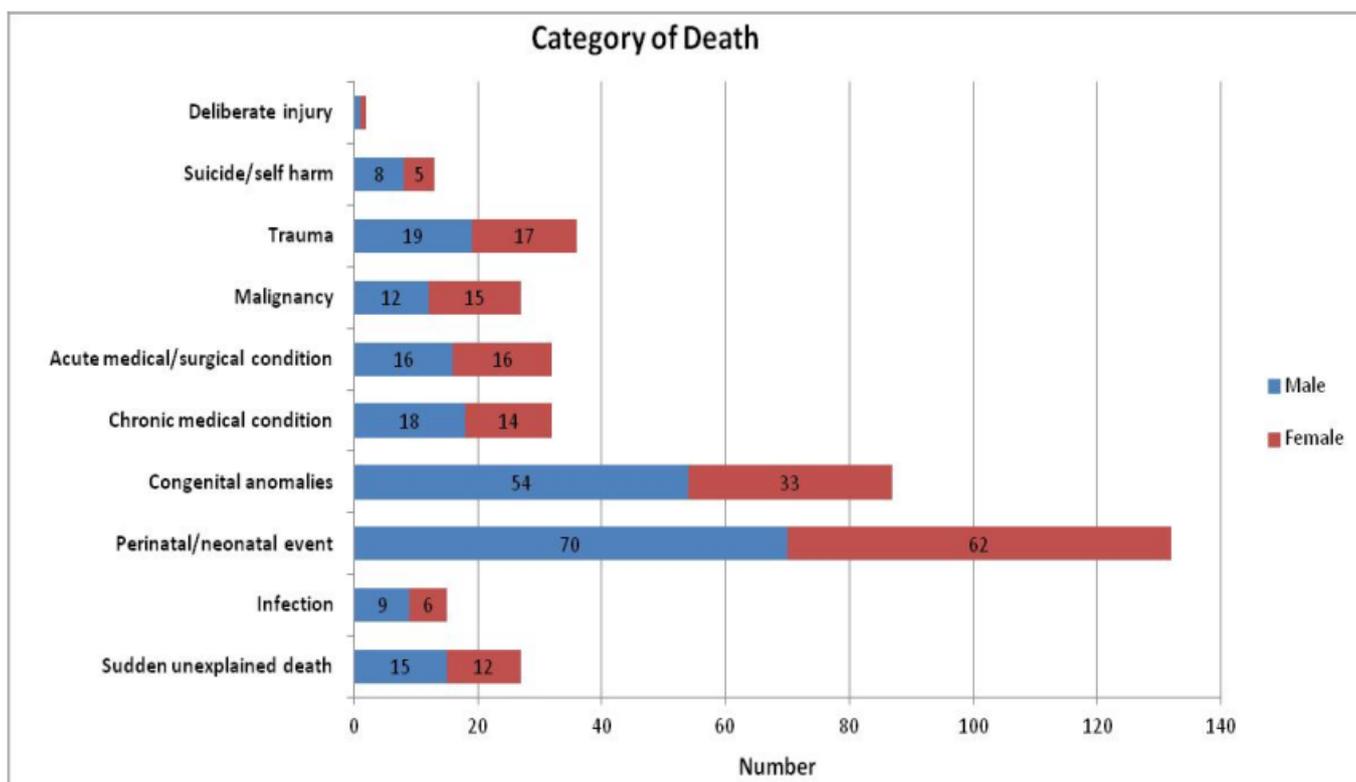


Figure 3. Number of infant and child deaths in the North East of England 2008-2010 by category of death and deprivation quintiles for England.

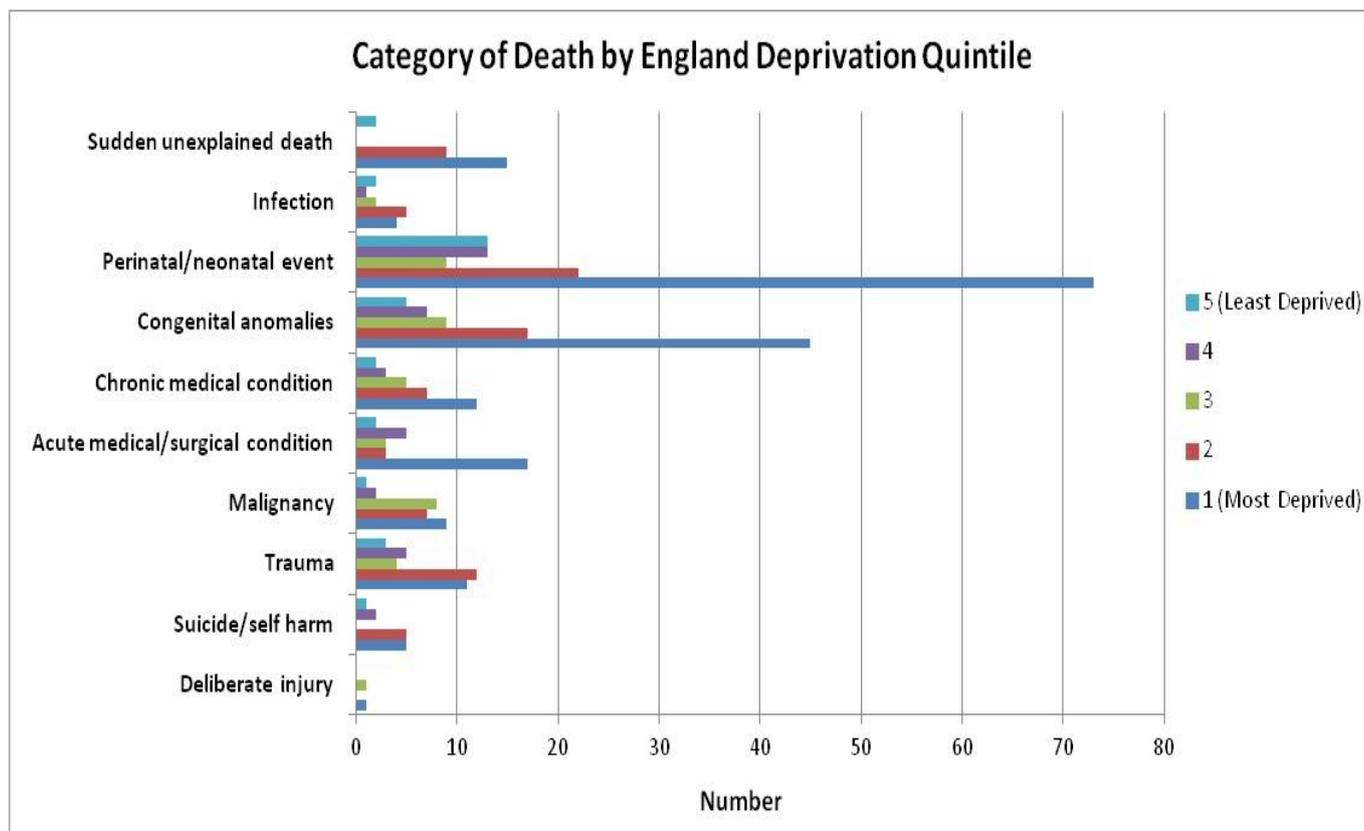
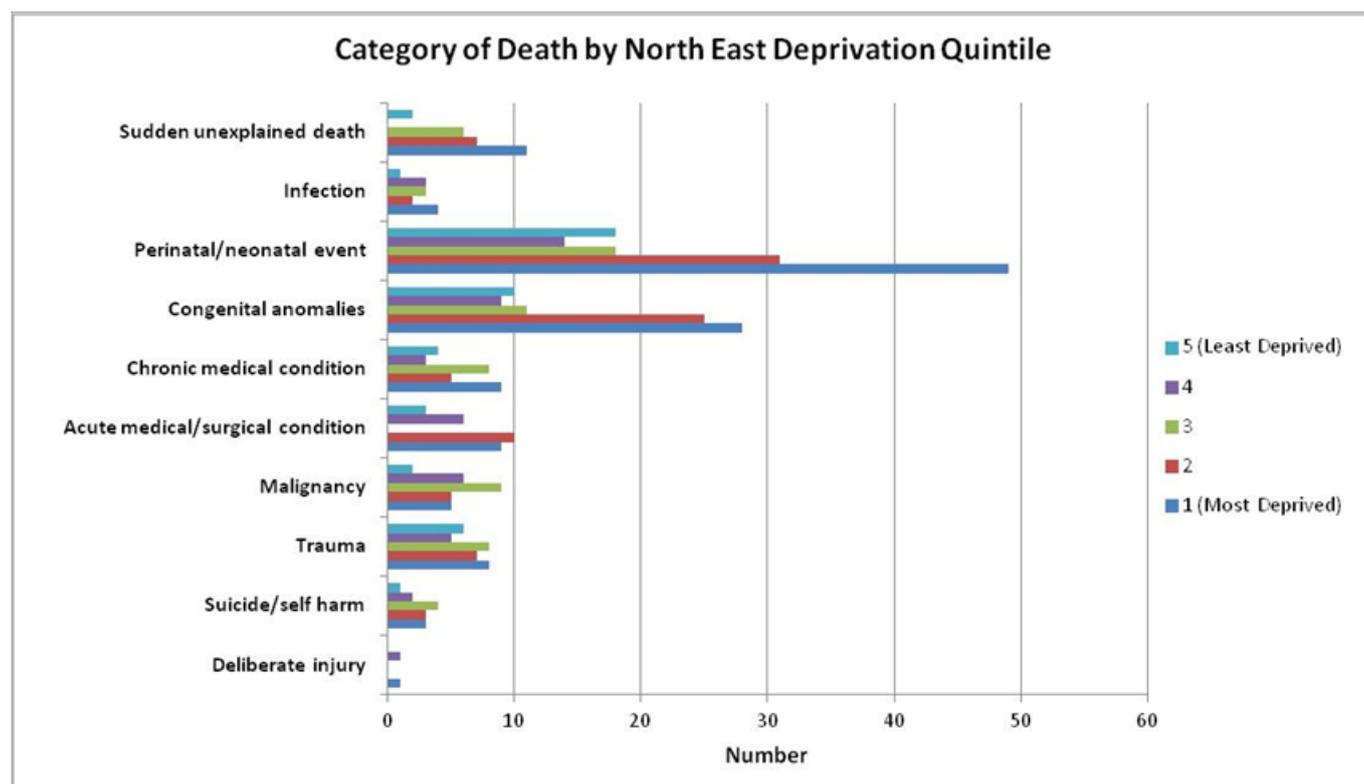


Figure 4. Number of infant and child deaths in the North East of England 2008-2010 by category of death and deprivation quintiles for North East England.



References

1. HM Government. Working Together to Safeguard Children: A guide to inter-agency working to safeguard and promote the welfare of children. London: Crown Copyright, 2010.

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