

North West Report of Child Deaths 2009/10

**A collaboration between NW Directors of Children's Services,
NW Local Safeguarding Children Boards, NHSNW, DHNW and
CMACE**



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The Centre for Maternal and Child Enquiries (CMACE) staff based in Manchester and at its Central Office in London collated the data, maintained the regional database and prepared the report.

Glossary

BMI	Body mass index
BPD	Bronchopulmonary dysplasia
CAMHS	Children and Adolescent Mental Health Services
CDOP	Child Death Overview Panel
CEMACH	Confidential Enquiry into Maternal and Child Health (now CMACE)
CMACE	Centre for Maternal and Child Enquiries
DCSF	Department for Children, Schools and Families
GONW	Government Office North West
IMD	Index of Multiple Deprivation
LSCB	Local Safeguarding Children Boards
NHSNW	NHS North West
NUU	Neonatal unit
NWPH	North West Public Health, Department of Health North West
ONS	Office of National Statistics
PDN	Perinatal death notification form
RTA	Road traffic accident
SCR	Serious case review
SUDI	Sudden unexpected death in infancy

1 Summary of main findings

Introduction

Since 1 April 2008 all Local Safeguarding Children Boards (LSCBs) have had a statutory responsibility to collect information on, and review the deaths of, all children from birth (excluding stillbirths) up to 18 years who are normally resident within their area. This is known as the Child Death Review Process. The duties of LSCBs regarding these processes are set out in Chapter 7 of *Working Together to Safeguard Children* (HM Government 2010). These include the collection of a nationally agreed minimum dataset, available on the *Every Child Matters* website.

In 2008 the Government Office North West (GONW) and NHS NW commissioned the Centre for Maternal and Child Enquiries (CMACE) to coordinate child death data collection across the region by providing a regional database and data collection services. They were supported by the North West Regional Safeguarding Strategy Board. This report details the findings from the second year of this collaboration. The regional collaboration was voluntary for the 23 LSCBs within the region which all decided to participate in 2009/10. The work was sponsored by GONW, NHS North West (NHSNW) and North West Public Health (NWPB).

Data capture

CMACE received information on 615 child deaths in the North West in 2009/10. This was lower than expected based on the experience in 2008/09 where information had been received on 670 child deaths. It was not part of CMACE's original commission to check levels of ascertainment against registrations of child deaths held by the Office for National Statistics (ONS). However, given our concerns about the completeness of ascertainment, we carried out this check for the 2009/10 data. We identified that we had not been notified on 22 deaths which were known to ONS. This indicates that overall ascertainment in 2009/10 was 96.5%. The great majority of the analyses in our report for 2009/10 had to be limited to those for which we were able to collect information from the LSCBs in the North West, i.e. the 615 deaths referred to above.

In section 7 of the report, we have analysed the rates of completion of each variable in the nationally agreed minimum dataset. For the great majority of the mandated variables on Forms A, B and the supplementary form for neonates, for which we had information from 2008/09, there has been a substantial increase in the extent of completion of data collected. It is clear nonetheless that LSCBs continue to struggle to collect information about the child's father.

Age of the children that died

We have been able to include the deaths ascertained via ONS in the analysis of the age of the children. Of the 637 children, 272 died between birth and 28 days, i.e. 42.7% of all deaths. A further 134 died between 28 days and one year of age, meaning that 63.7% of all child deaths occurred within the first year.

Children aged between 15 and 18 are twice as likely to die as those aged between 5 and 14.

Causes of death

The most comprehensive source of information on cause of death available at this stage from the child death review process in the North West was that provisionally coded by CMACE at notification. Obviously such provisional coding needs to be treated with great caution, although for the most part it was reflected in the more detailed assessments undertaken by CDOPs. According to the provisional assessments the most frequently occurring causes of death for neonates were respiratory disorders (40.8%) and major congenital anomalies (22.7%). For children aged 28 days to 18 years, the most frequently occurring causes of death were chromosomal, genetic and congenital anomalies (23.5%) and sudden unexpected, unexplained death (14.3%).

Child Death Overview Panels (CDOPs) and preventability

Of the 615 deaths notified to us, we received information on 327 CDOP assessments. This represented 64% of deaths of children aged over 28 days and 40% of neonates.

CDOPs assessed 14 of the deaths they reviewed as preventable, i.e. 4% and a further 45, i.e. 14%, as potentially preventable or with modifiable factors.

Ethnicity

Information on ethnicity was available for 506 out of the 615 deaths. Some caution is needed in interpreting the data on ethnicity and its association with child mortality. This is partly because of the amount of missing data which may not be evenly distributed amongst the different ethnic groups. Further, other than for the “white” population, the numbers are small and may thus be subject to considerable random variation. We therefore draw only tentative inferences on the impact of ethnicity. Nonetheless we noted that children of black/mixed ethnicity represented less than 1% of the population but accounted for 7% of the deaths and children of Asian ethnicity represented 5% of the population but 16% of the deaths. This is an area that merits further attention.

Deprivation

Sufficient information was available in 608 out of the 615 deaths to determine the deprivation quintile. Quintile 1 represents the least deprived 20% of the population of England and quintile 5 the most deprived 20%. The population in the North West is relatively deprived compared with the rest of England. The results therefore need to be adjusted to enable meaningful analysis to be carried out of the impact of deprivation on outcomes. Denominator data was provided by DHNW to facilitate this. Fifty five percent of the child population of the North West fell into quintiles 4 and 5.

Of the 608 deaths for which information was available, 300 were in quintile 5, the most deprived and 147 in quintile 4. We found that children in quintiles 1, 2 and 3 were equally likely to die, but children in quintiles 4 and 5 were, respectively, 2.2 and 2.4 times more likely to die than children in quintile 1.

We were able to match the level of deprivation with 51 of the deaths which had been assessed as preventable, potentially preventable or with modifiable factors. We found that 40 of these deaths, i.e. 78%, were among quintiles 4 and 5. It appears that more preventable deaths are occurring amongst more deprived children. This impact was particularly apparent in Sudden Unexpected Deaths in Infancy (see below).

Sudden Unexpected Deaths in Infancy

Forty six children aged from 28 days to one year were classified as having a sudden unexpected death in infancy. The association between deprivation and SUDI was significantly more marked than for other causes of child death. Forty two out of 46 (i.e. 91%) of SUDI deaths occurred in deprivation quintiles 4 and 5, indicating potential scope for prevention strategies.

It is important that the supplemental information mandated by the Department for Education in respect of SUDI is collected wherever possible as this will help in developing approaches to achieve a reduction in the number of these deaths. Where information was collected it indicates that some of the deaths occurred in circumstances known to contribute to SUDI. These include the child being put to sleep on its front, co-sleeping and sleeping on a sofa. Parental smoking, alcohol and substance misuse were also factors.

Suspected suicide

CMACE was notified of 10 child deaths in the 2009/10 data collection year that were provisionally identified as an apparent suicide. There were 15 child deaths from apparent suicide notified in 2008/09. The method for eight of these deaths was described as hanging. Seven of the deaths have been reviewed by the Child Death Overview Panel and the results reported back to CMACE. In all but one case the CDOP retained the assessment of suicide, with the remaining death classified as *trauma or other external factors* following the coroner’s verdict. CMACE has received

the cause of death as determined by the coroner for 6 of the deaths. In no case did the coroner give suicide as the cause of death.

In only one of the ten cases was there a known mental or behavioural disorder at the time of death and in one case there was a previously known mental or behavioural disorder. Two of the children had had contact with Child and Adolescent Mental Health Services (CAMHS). Five of the children were known to have been subject to a child protection plan though not at the time of death.

The North West regional collaboration

Due to funding restrictions, the North West regional collaboration on child death data collection has not continued into 2010/11. It is to be hoped that there will be scope at some stage in the future for further regional, or even national, collaboration on the collation and analysis of the data on child deaths collected as a result of the Child Death Review Process. The collaboration in the North West took place at a time when the data collection systems were still in their infancy and there were inevitably some challenges in achieving comprehensive data collection. Nonetheless, a significant amount was achieved. Areas with potential for the development of strategies for reducing child deaths were clearly identified even at this formative stage in the development of the system. Avoidable patterns in child mortality are much more difficult to detect at the level of the individual LSCB due to their relative rarity. Collaboration at a regional or national level is therefore much more likely to yield information that can help in reducing child mortality.

2 Summary

Overview

Table 1 shows the number of deaths notified to CMACE of children resident within the North West region that died between April 2009 and March 2010. In 2009/10 there were 615 child deaths notified, approximately 13% of all child deaths registered in England (using 2008 figures) and slightly less than the 670 notified in 2008/09. Forty four per cent of the deaths occurred in the neonatal period (less than 28 days after birth) and 56% were among children 28 days or older.

Table 1
Deaths among children resident in the North West, 2008/09 and 2009/10

	2008/09		2009/10	
	Number	Percentage	Number	Percentage
Neonatal deaths (0-27 days)	284	42.4	272	44.2
Child deaths (28 days - 18 years)	386	57.6	343	55.8
Total child deaths (0 days - 18 years)	670	100	615	100

[†] Percentages are calculated excluding any not known or missing values.

Preventable Deaths

In 2009/10, over half of the 615 deaths (53%) in the North West were reviewed by the Child Death Overview Panels (Table 2). More deaths of children 28 days or older were reviewed (64%) than neonatal deaths (40%). Table 2 also shows the categorisation of preventability or presence of modifiable factors in the child deaths. Preventability was determined after full review by the CDOP and could be classified as Preventable, Potentially Preventable, or Not Preventable. A small number of cases were determined to have insufficient information to classify preventability. It should be noted that in Spring 2010, the DCSF introduced an amended pro forma for the CDOPs to use when classifying deaths. This replaced the preventability question with one assessing the presence of modifiable factors. The definition of a modifiable factor, as outlined in *Working Together to Safeguard Children (2009)* is *one or more factors, in any domain, which may have contributed to the death of the child and which, by means of locally or nationally achievable interventions, could be modified to reduce the risk of future child deaths.*

Some child deaths were reviewed after the introduction of the amended CDOP assessment form and used the new system of identifying modifiable factors, rather than assessing preventability. Table 2 reports each separately, but subsequent tables will group together all deaths assessed as Preventable, Potentially Preventable, or With Modifiable Factors under one category: Four percent of deaths that were reviewed by the panel were assessed to be preventable and a further 14% were assessed to be potentially preventable or have modifiable factors. This is comparable with the preventability figures reported for England as compiled by the Department for Education which show 4% of deaths assessed as preventable and a further 15% as potentially preventable.

Table 2
Summary of reviews by Child Death Overview Panels, North West Region, 2008/09 and 2009/10

	2008/09		2009/10		
	North West		North West		England
	Number	Percentage ¹	Number	Percentage ¹	
Child deaths reviewed by CDOP	177	45.9	327	53.2	3450
Preventable child deaths	9	2.3	14	4.3	150
Potentially preventable child deaths	34	8.8	27	8.3	-
Child deaths with modifiable factors	18	5.5	-
Total number of preventable / modifiable deaths	43	11.1	59	18.0	

¹ Percentages are calculated excluding any not known or missing values.

Investigations of death

Table 3 shows the number of deaths that had a post mortem examination and/or were reported to the coroner. Among children (28 days to 18 years), 58% had a post mortem examination and 90% were referred to the coroners. Among infants less than 28 days, 21% had a post mortem and 24% were reported to the coroner.

Table 3
Investigations of deaths, North West Region 2009/10

Investigations	Number (Percentage ¹)		
	Neonatal Deaths (0-27 days)	Child Deaths (28 days – 18 years)	TOTAL
Was a post mortem conducted?			
Yes	46 (20.6)	154 (58.3)	200 (41.1)
No	177 (79.4)	110 (41.7)	287 (58.9)
Was the death reported to the coroner?			
Yes	63 (23.6)	219 (89.8)	282 (55.2)
No	204 (76.4)	25 (10.2)	229 (44.8)

¹ Percentages are calculated excluding any not known or missing values.

The proportion of children deaths investigated through a post mortem varied by cause of death. For instance, of those children whose death was categorised by the CDOP as deliberately inflicted injury, suicide, trauma or other extrinsic factors, acute medical condition or sudden unexpected death, all or almost all had a post mortem examination. For those whose deaths were categorised as malignancy, chronic medical condition, chromosomal or genetic condition, or perinatal event, the majority did not have a post mortem.

3 Socio-Demographic factors

Neonatal deaths

Table 4 shows the distribution of socio-demographic factors among the neonates that died. Approximately 61% of the infants that died were male and 39% female. Three quarters of the infants were White and over half (54%) were resident in the most deprived quintile.

Table 4
Socio-demographic factors of neonatal deaths, North West Region, 2008/09 and 2009/10

Characteristic	Neonates (0-27 days) Number (Percentage ¹)	
	2008/09	2009/10
Sex		
Male	155 (55.4)	163 (61.3)
Female	125 (44.6)	103 (38.7)
Ethnicity		
White	213 (81.6)	201 (75.3)
Black	12 (4.6)	12 (4.5)
Asian	29 (11.1)	48 (18.0)
Chinese	--	--
Mixed	4 (1.5)	4 (1.5)
Other	3 (1.1)	2 (0.7)
Asylum seeker		
Yes	2 (1.6)	--
No	122 (98.4)	139
Deprivation		
1 (least deprived)	14 (4.9)	24 (8.8)
2	38 (13.4)	19 (7.0)
3	33 (11.7)	22 (8.1)
4	44 (15.5)	61 (22.4)
5 (most deprived)	154 (54.4)	146 (53.7)

¹ Percentages are calculated excluding any not known or missing values.

Child Deaths

Table 5 shows the distribution of socio-demographic factors among the 343 children aged 28 days to 18 years that died. Approximately 61% of the children that died were under the age of 4. Over three quarters (76.2%) were white and just under half (46%) were resident in the most deprived quintile of the population.

Table 5
Socio-demographic factors of children that died, children ages 28 days to 18 years, North West Region, 2008/09 and 2009/10

Characteristic	Child Deaths (28 days-18 years) Number (Percentage)	
	2008/09	2009/10
Sex		
Male	214 (55.7)	207 (61.1)
Female	170 (44.3)	132 (38.9)
Age		
28-364 days	137 (35.5)	127 (37.0)
1-4 years	86 (22.3)	84 (24.5)
5-9 years	40 (10.4)	36 (10.5)
10-14 years	45 (11.7)	39 (11.4)
15-18 years	78 (20.2)	57 (16.6)
Ethnicity		
White	153 (76.1)	182 (76.2)
Black	7 (3.5)	14 (5.9)
Asian	34 (16.9)	33 (13.8)
Chinese	3 (1.5)	2 (0.8)
Mixed	3 (1.5)	5 (2.1)
Other	1 (0.5)	3 (1.3)
Asylum seeker		
Yes	1 (0.7)	1 (0.6)
No	148 (99.3)	156 (99.4)
Deprivation		
1 (least deprived)	23 (6.3)	23 (6.8)
2	46 (12.6)	34 (10.1)
3	33 (9.0)	39 (11.6)
4	62 (17.0)	86 (25.6)
5 (most deprived)	201 (55.1)	154 (45.8)

[†] Percentages are calculated excluding any not known or missing values.

Age

Table 6 shows the age distribution of 615 child deaths in the North West Region compared to the ages of all children living in the region in 2009. The rate ratios are given, which is the ratio of the rate of death in each age band to the rate of death in the reference group, in this case 5 to 9 year olds, as the rate of death was lowest in this age band. Unsurprisingly, the rate of death among infants less than one year is much higher than the reference group, with the rates of death among 1 to 4 year olds and 15 to 18 year olds 2 to 3 times higher than that in the reference group. Confidence intervals, which indicate whether the differences in rates between the groups are significantly significant, are also provided.

Table 6
Deaths by age compared to the regional population, North West Region 2009/10

Age	Child Deaths 2009/10	Child Population 2009	Rate Ratio [95% CI]
	0 – 18 years	0 – 18 years ²	
	N (% ¹)	N in 000s (%)	
<1 year	399 (64.9)	87 (5.9)	48.5 [34.5, 68.2]
1-4 years	84 (13.7)	334 (22.6)	2.7 [1.8, 3.9]
5-9 years*	36 (5.9)	380 (25.7)	1.0 [0.6, 1.6]
10-14 years	39 (6.3)	409 (27.6)	1.0 [0.6, 1.6]
15-18 years	57 (9.3)	270 (18.2)	2.2 [1.5, 3.4]

¹ Percentages are calculated excluding any not known or missing values.

² Population data was provided by Department of Health North West

* Reference group

Table 7 shows how the deaths assessed by the CDOP as preventable (including potentially preventable deaths and those with modifiable factors) were distributed by age. It appears from this that the greatest number of preventable or potentially preventable deaths is amongst children aged 15-18 years.

Table 7
Preventable deaths by age group, children ages 0 to 18 years, North West Region 2009/10

Age	Preventable (% of assessed cases) ¹
0-27 days	7 (6.5)
28-364 days	22 (25.9)
1-4 years	9 (16.1)
5-9 years	5 (26.3)
10-14 years	5 (21.7)
15-18 years	11 (30.6)
Total	59 (18.0)

¹ Percentages are calculated excluding any not known or missing values.

Ethnicity

Table 8 shows the ethnicities of the children who died in the North West Region compared to the ethnic distribution in the general child population in the North West. Compared to deaths among White children, children of Black or Mixed ethnicity had a considerably increased rate of death, 13 times higher. Asian children had a rate of death 4 times higher than White children. Confidence intervals are again provided to show whether the differences in death rates between the groups can be considered statistically significant.

Table 8
Deaths by ethnic group compared to the regional population, North West Region 2009/10

Ethnicity	Child Deaths 2009/10 0 – 18 years	Child Population 2009 0 – 18 years ²	Rate Ratio
	N (% ¹)	N in 000s (%)	
White*	383 (75.7)	1266 (94.3)	1.0 [0.9, 1.1]
Black/Mixed	35 (6.9)	9 (0.7)	12.9 [9.1, 18.2]
Asian	81 (16.0)	67 (5.0)	4.0 [3.2, 5.1]
Chinese	2 (0.4)	1 (0.0)	10.4 [2.6, 41.8]
Other	5 (1)	--	--

¹ Percentages are calculated excluding any not known or missing values.

² Population data was provided by Department of Health North West

* Reference group

Table 9 shows how the deaths assessed by the CDOP as preventable (including potentially preventable deaths and those with modifiable factors) were distributed by ethnicity. It appears from this that the greatest number of preventable or potentially preventable deaths are amongst children of Asian ethnicity.

Table 9
Preventable deaths by ethnic group, children ages 0 to 18 years, North West Region 2009/10

Ethnicity	Preventable (% of assessed cases) ¹
White	33 (16.7)
Black	2 (12.5)
Asian	12 (25.5)
Chinese	--
Mixed	--
Other	--
Total	47 (17.7)

¹ Percentages are calculated excluding any not known or missing values.

Deprivation

Table 10 identifies the increasing risk of death of a child as deprivation increases. The proportion of children in each deprivation quintile in 2009 (0 – 18 years) is used as a proxy to enable this analysis to be carried out. While the death rates in the least deprived three quintiles are generally similar, the rates of death among children living in the fourth and most deprived quintiles are twice as high.

Table 10**Rate ratio of death of children (0-18 years) in North West by deprivation quintile**

Deprivation Quintile	Child Deaths 2009/10 0 – 18 years	Child Population 2009 0 – 18 years ²	Rate Ratio
	N (% ¹)	N in 000s (%)	
1 (least deprived)*	47 (7.7)	177 (13.2)	1.0 [0.7, 1.5]
2	53 (8.7)	213 (15.9)	0.9 [0.6, 1.4]
3	61 (10.0)	222 (16.5)	1.0 [0.7, 1.5]
4	147 (24.2)	252 (18.8)	2.2 [1.6, 3.0]
5 (most deprived)	300 (49.3)	479 (35.7)	2.4 [1.7, 3.2]

¹ Percentages are calculated excluding any not known or missing values.

² Population data was provided by Department of Health North West

* Reference group

Table 11 shows how the deaths assessed by the CDOP as preventable (including potentially preventable deaths and those with modifiable factors) were distributed according to the 2004 Index of Multiple Deprivation, which provides a relative ranking of areas across England according to their level of deprivation. It appears from this that the greatest number of preventable or potentially preventable deaths are amongst children within the most deprived quintile.

Table 11**Preventable deaths by quintile of deprivation group, children ages 0 to 18 years, North West Region 2009/10**

Deprivation Quintile	Preventable (% of assessed cases) ¹
1 (least deprived)	4 (16.7)
2	3 (10.3)
3	5 (18.5)
4	13 (17.3)
5 (most deprived)	33 (19.9)
Total	58 (18.1)

¹ Percentages are calculated excluding any not known or missing values.

4 Details of the Deaths

Timing

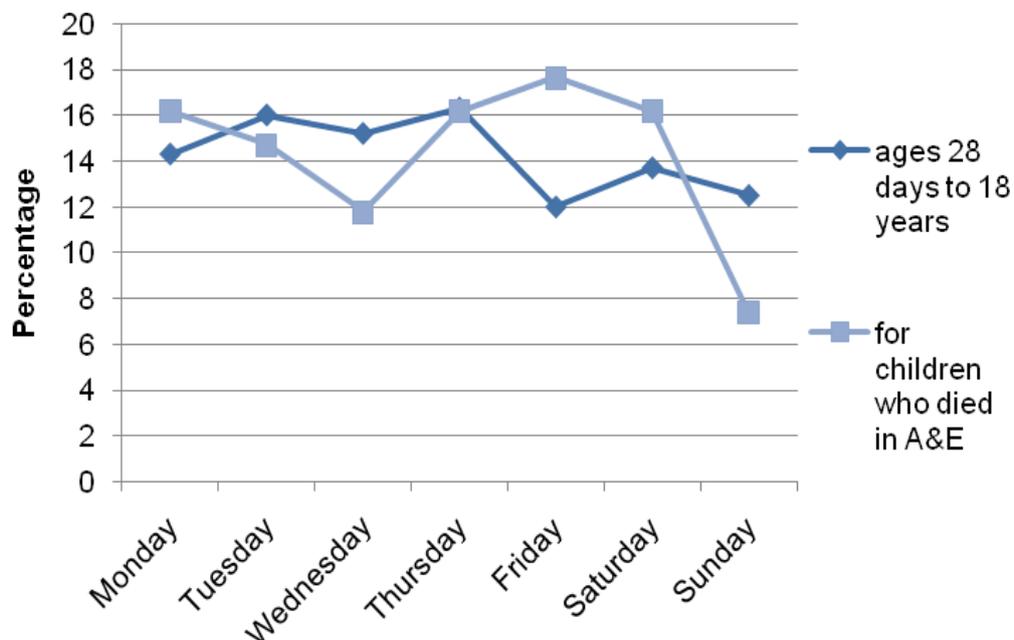
Table 12 shows the distribution of child deaths by day of the week among all children, 0 days to 18 years. Figure 1 illustrates the timing of death by day of the week for all older children and specifically for those children who died in the emergency department.

Table 12
Day of death, North West Region 2009/10

Day	Number (Percentage ¹)		
	Neonatal Deaths (0-27 days)	Child Deaths (28 days – 18 years)	TOTAL
Monday	39 (14.3)	49 (14.3)	88 (14.3)
Tuesday	45 (16.5)	55 (16.0)	100 (16.3)
Wednesday	37 (13.6)	52 (15.2)	89 (14.5)
Thursday	35 (12.9)	56 (16.3)	91 (14.8)
Friday	33 (12.1)	41 (12.0)	74 (12.0)
Saturday	34 (12.5)	47 (13.7)	81 (13.2)
Sunday	49 (18.0)	43 (12.5)	92 (15.0)
Total	272	343	615

¹ Percentages are calculated excluding any not known or missing values.

Figure 1
Day of death for all children and for those that died in A&E, children ages 28 days to 18 years, North West Region 2009/10



Figures 2, 3 and 4 show the month of death for children (ages 28 days to 18 years) whose death was due to road traffic collisions, infection or SUDI.

Figure 2
Month of death for deaths due to road traffic collisions, children ages 28 days to 18 years, North West Region 2009/10 (N=22)

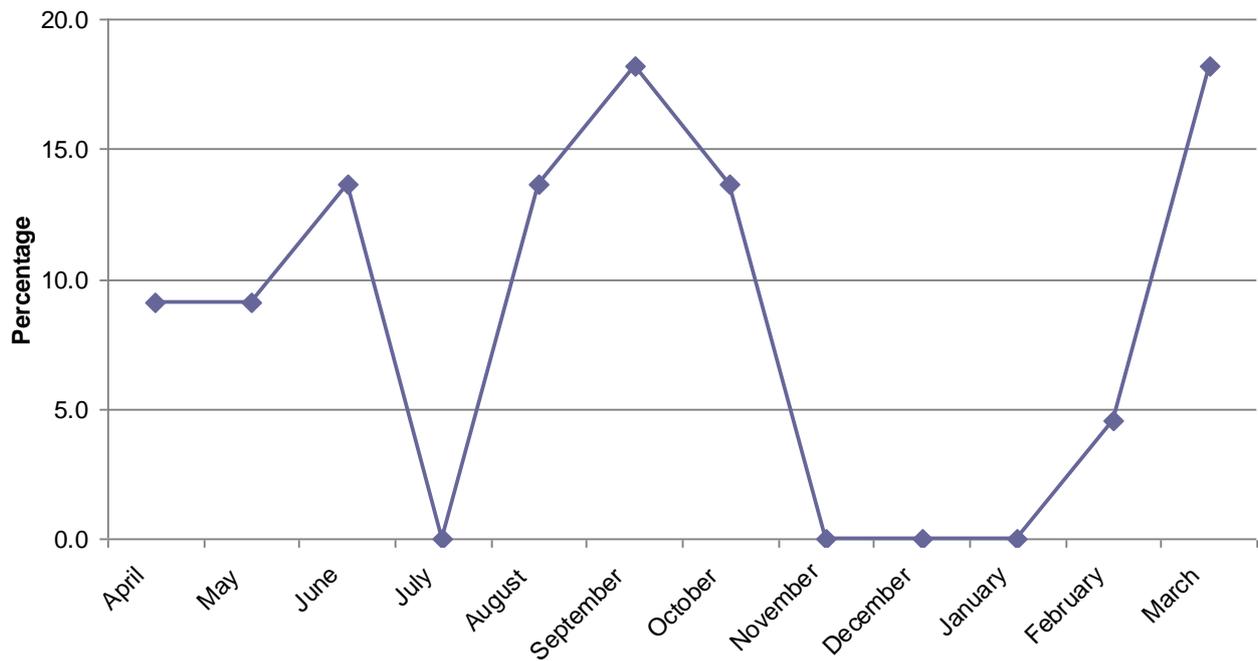


Figure 3
Month of death for deaths due to infection, children ages 28 days to 18 years, North West Region 2009/10 (N=21)

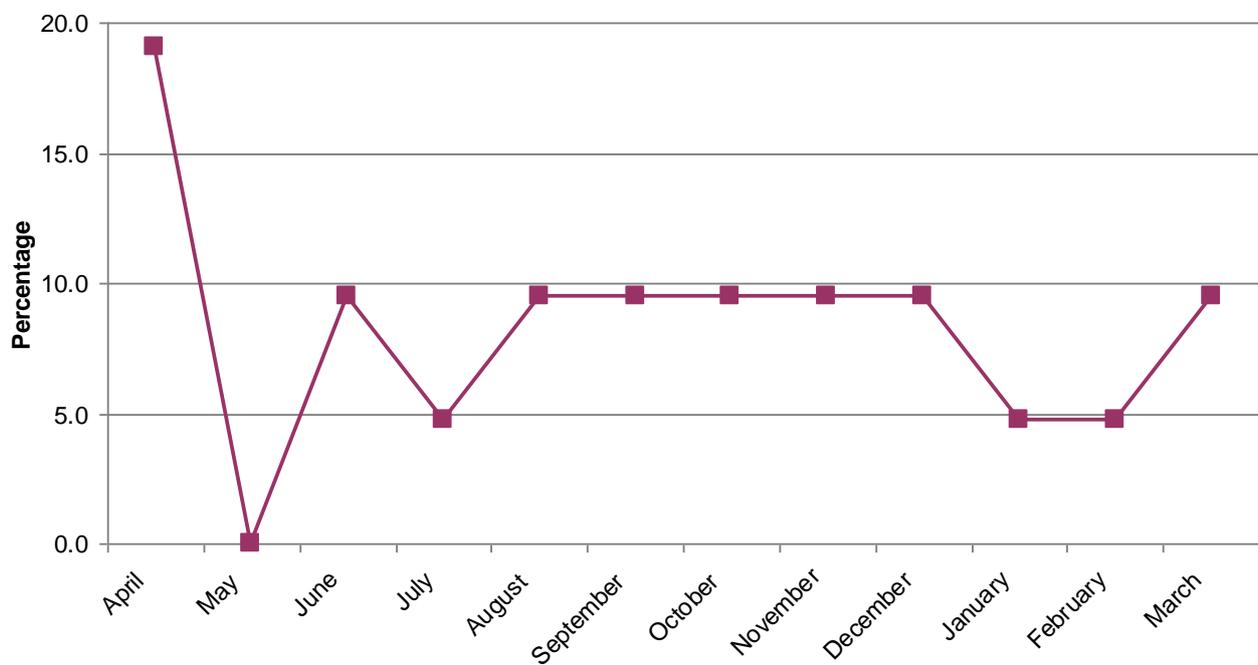
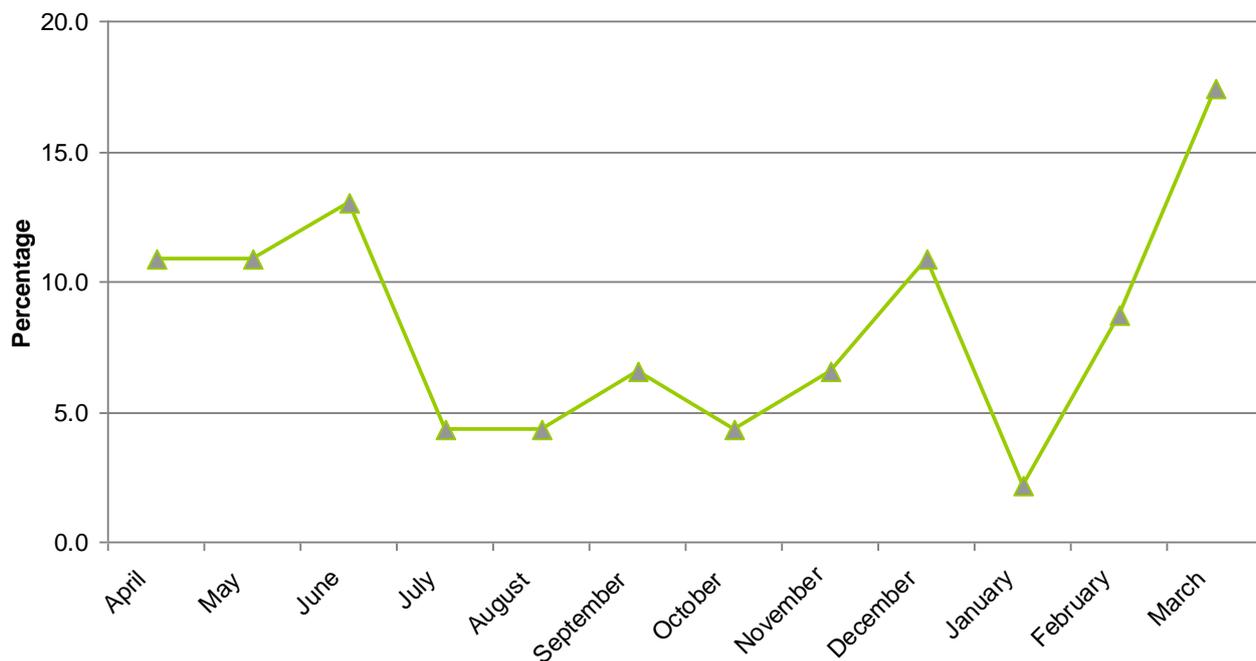


Figure 4
Month of death for deaths due to SUDI, children ages 28 days to 18 years, North West Region 2009/10 (N=46)



Mode of Death

Figure 5 shows the distribution of mode of death for all children over 28 days. Table 13 shows the expectedness and preventability of deaths by mode of death. Ninety-two percent of deaths where the child was found dead or collapsed were considered unexpected, and deaths were assessed as preventable for 24% of children who were found dead or collapsed.

Figure 5
Mode of death, children ages 28 days to 18 years, North West Region 2009/10

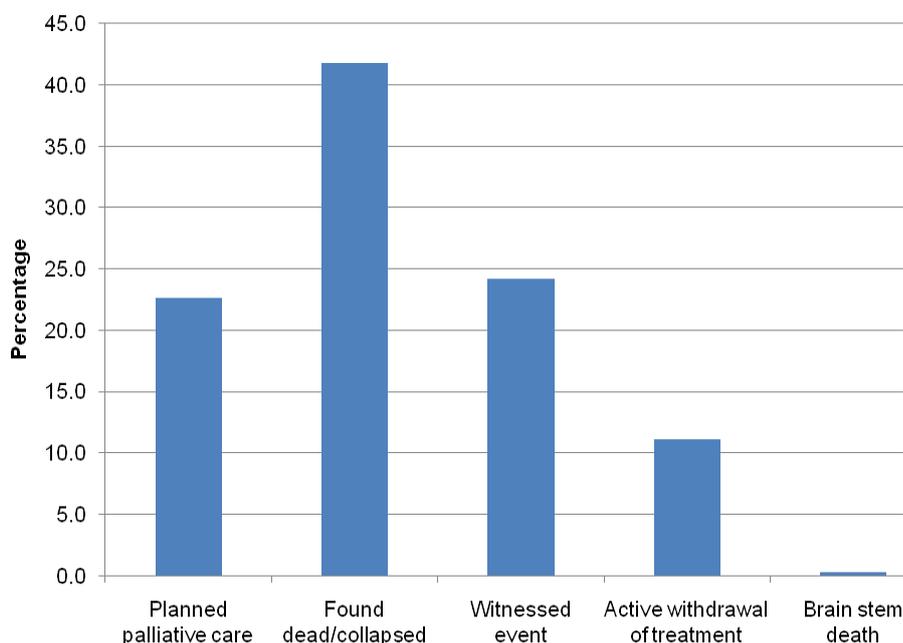


Table 13
Mode of death, children ages 28 days to 18 years, North West Region 2009/10

Mode of Death	Number (% of children in that mode ¹)		Total Child Deaths (28 days to 18 years)
	Unexpected	Preventable	
Expected death: planned palliative care	2 (3.0)	6 (9.0)	67
Found dead/collapsed	114 (91.9)	30 (24.2)	124
Witnessed event	43 (59.7)	10 (13.9)	72
Active withdrawal of treatment	8 (24.2)	5 (15.2)	33
Brain stem death	1 (100)	--	1
Total	168	51	297

¹ Percentages are calculated excluding any not known or missing values.

Place of Death

Table 14 shows the location of death among children ages 28 days to 18 years that died. Of the neonatal deaths, only three babies died outside of a hospital. Sixty-three percent of deaths among older children occurred in the hospital.

Table 14
Place of death, children ages 28 days to 18 years, North West Region 2009/10

Location	Number (% of children in that location ¹)		Total Child Deaths (28 days to 18 years)
	Unexpected	Preventable	
NHS	92 (46.7)	25 (12.7)	197 (63.1)
Acute hospital			
Emergency department	60 (88.2)	11 (16.2)	68 (21.8)
Paediatric ward	4 (17.4)	2 (8.7)	23 (7.4)
Neonatal unit	2 (7.4)	3 (11.1)	27 (8.7)
Intensive care unit	11 (28.2)	7 (17.9)	39 (12.5)
Other	8 (42.1)	--	19 (6.1)
Department unknown	7 (33.3)	2 (9.5)	21 (6.7)
Mental health inpatient unit	--	--	--
Residence	52 (65.8)	12 (15.2)	79 (25.3)
Home of normal residence	43 (61.4)	10 (14.3)	70 (22.4)
Other private residence	5 (100)	2 (40.0)	5 (1.6)
Foster home	3 (100)	--	3 (1.0)
Residential care	1 (100)	--	1 (0.3)
In the community	17 (100)	8 (47.1)	17 (5.4)
Public place	14 (100)	7 (50.0)	14 (4.5)
School	3 (100)	1 (33.3)	3 (1.0)
Hospice	1 (9.1)	1 (9.1)	11 (3.5)
Abroad	4 (80.0)	4 (80.0)	5 (1.6)
Other	3 (100)	--	3 (1.0)
Total	169 (54.2)	50 (16.0)	312

¹ Percentages are calculated excluding any not known or missing values.

Figure 6
Place of death, children ages 28 days to 18 years, North West Region 2009/10

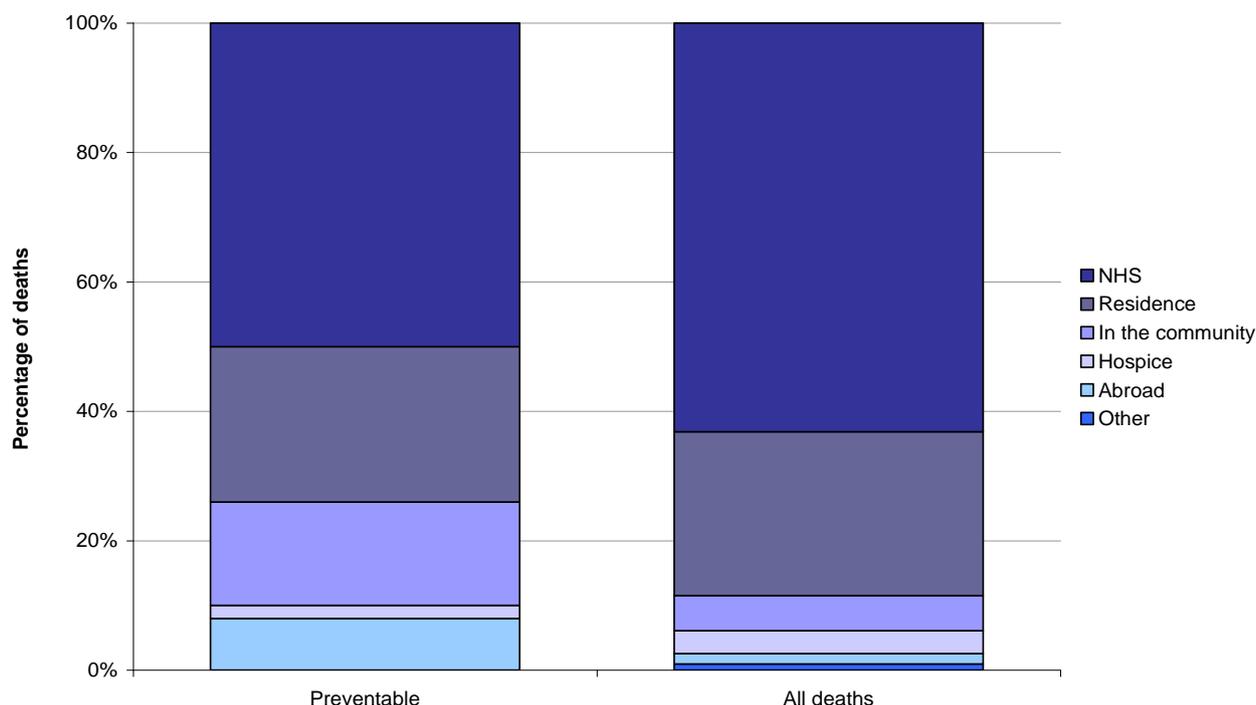


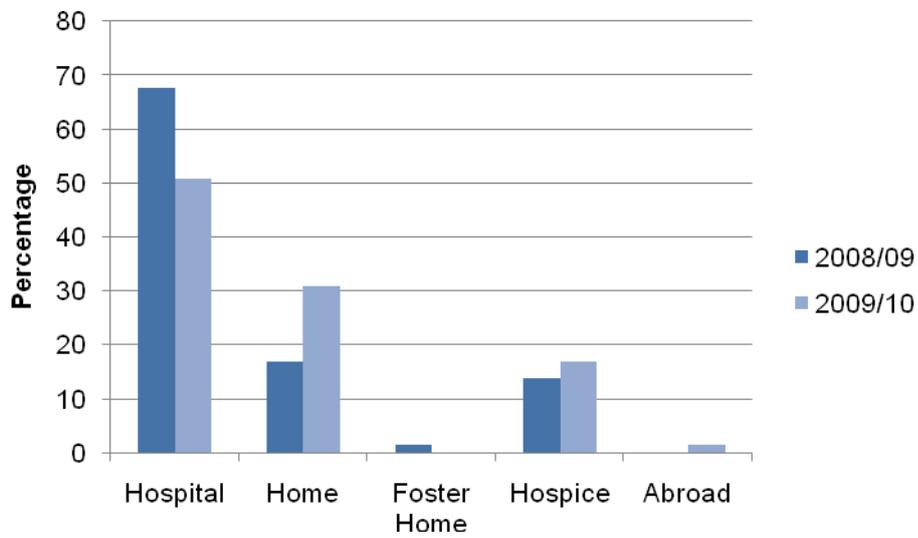
Table 15 shows the location of hospital deaths in 2009/10 (for children 28 days or older) compared to the North West region in 2008/09 and the *Why Children Die* regions of 2006. There were proportionately fewer children whose location of death was recorded as the intensive care unit this year compared to both last year and the *Why Children Die* data. Proportionately more children were noted to have died in the emergency department in the North West region (both years) than in other regions. Proportionately more children died in the neonatal unit or an “other” or unspecified department than in the previous two years.

Table 15
Location of deaths in hospital, children ages 28 days to 17 years, *Why Children Die* 2006 compared to North West Region 2008/09 and North West Region 2009/10

Hospital Department	<i>Why Children Die</i> 2006		North West 2008/09		North West 2009/10	
	Number	Percentage	Number	Percentage	Number	Percentage
Intensive care unit	227	40.2	56	26.7	39	19.8
Emergency department	152	26.9	78	37.1	68	34.5
Paediatric ward	103	18.2	26	12.4	23	11.7
Neonatal unit	57	10.1	15	7.1	27	13.7
Other/Unknown	26	4.6	35	16.7	40	20.3
Total	565	100	210	100	197	100

Figure 7 shows the location of death among children whose mode of death was categorised as an expected death with planned palliative care. While half of these children died in hospital, this was significantly less than 2008/09, with a concurrent non significant increase in the number of children receiving palliative care at home or in a hospice.

Figure 7
Place of death for children whose mode of death was “Expected death: Planned palliative care,” children ages 28 days to 18 years, North West Region 2008/09 and North West Region 2009/10



5 Cause of Death

Overall Classification of Deaths

Table 16 shows the cause of child deaths for the North West 2009/10 for children aged 28 days to 18 years. When notifications were first received, CMACE coded a provisional cause of death for 342 children aged 28 days to 18 years. When the Child Death Overview Panels review individual cases, a collective decision is recorded as to the primary cause of death. Often the Panels are able to take into account information that was not available at notification when categorising the cause of death. This is especially true for deaths that were initially coded as sudden and unexpected which are later found to have an underlying cause. The most prevalent causes of death, according to the CDOP categorisations, were chromosomal, genetic and congenital anomalies; sudden unexpected, unexplained deaths and chronic medical conditions.

Table 16
Cause of death, children ages 28 days to 18 years, North West Region, 2008/09 and 2009/10

	Number (Percentage ¹)			
	2008/09		2009/10	
	Provisional	CDOP	Provisional	CDOP
Deliberately inflicted injury, abuse or neglect	14 (3.8)	4 (2.8)	11 (3.2)	2 (1.0)
Severe abuse	1		--	
Suspected homicide	13		10	
Severe neglect leading to death	--		1	
Deaths from war, terrorism or other mass violence	--		--	
Suicide or deliberate self-inflicted harm	18 (4.9)	5 (3.5)	9 (2.6)	6 (3.1)
Suicide	15		9	
Alcohol abuse	--		--	
Drug abuse	1		--	
Other forms of self-harm	2		--	
Trauma and other external factors	45 (12.2)	19 (13.2)	38 (11.1)	19 (9.7)
Road traffic accident	29		22	
Head injury, other or multiple trauma	5		9	
Burn injury	3		2	
Drowning	5		4	
Unintentional self-poisoning	--		--	
Anaphylaxis & other extrinsic factors	3		1	
Malignancy	35 (9.5)	13 (9.0)	34 (9.9)	23 (11.7)
Solid tumours	17		21	
Leukaemias & lymphomas	12		12	
Malignant proliferative conditions such as histiocytosis	6		1	
Acute medical or surgical condition	26 (7.0)	9 (6.3)	27 (7.9)	9 (4.6)
Chronic medical condition	37 (10.0)	19 (13.2)	42 (12.3)	25 (12.8)
Chromosomal, genetic and congenital anomalies	89 (24.1)	26 (18.1)	66 (19.3)	46 (23.5)
Perinatal / neonatal event	27 (7.3)	16 (11.1)	24 (7.0)	23 (11.7)
Prematurity	26		20	
Birth-related injury	1		1	
Other	--		3	
Infection	17 (4.6)	13 (9.0)	21 (6.1)	15 (7.7)
Sudden unexpected, unexplained death	61 (16.5)	20 (13.9)	70 (20.5)	28 (14.3)
SUDI	55		46	
Unascertained at any age	6		24	
Total	369	144	342	196

¹ Percentages are calculated excluding any not known or missing values.

Figure 8
Cause of death, children ages 28 days to 18 years, North West Region, 2008/09 and 2009/10

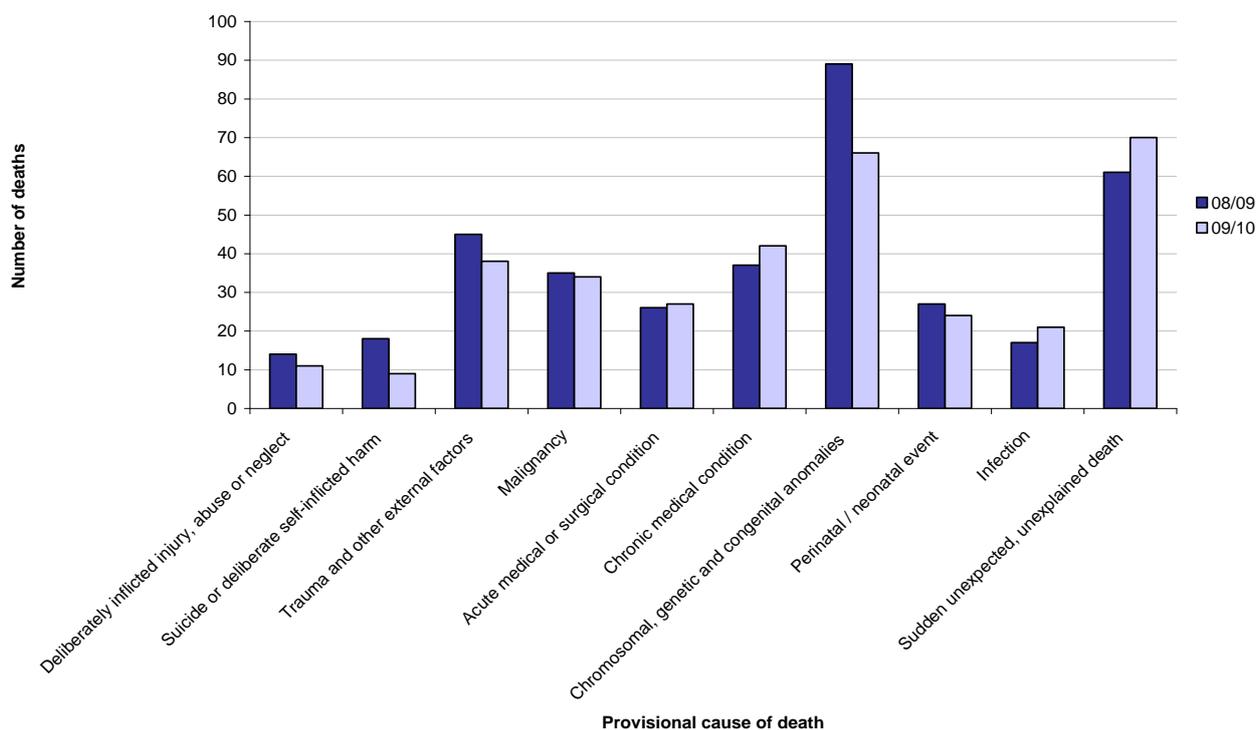


Table 17 shows the causes of death among neonates. Rather than the CDOP death classification system, in which the majority of deaths would be categorised as *Perinatal / neonatal event* or *Chromosomal, genetic and congenital anomalies*, the cause of death based on the CMACE classification of neonatal deaths is reported, which gives more detail. The cause of death is systematically coded by the CMACE regional office, based on events and conditions that are reported in the PDN from the maternity unit. Among neonatal deaths, respiratory disorders (primarily stemming from prematurity) were the leading cause of death, and major congenital anomalies were the second most frequent cause of death.

The causes of death in the North West region in 2009/10 were similar to those of all neonates who died in England, Wales, Northern Ireland and the Crown Dependencies in 2008. The North West had proportionally more neonatal deaths due to congenital anomalies (22.7% v 21.0%), extreme prematurity (13.0% v 9.3%) and respiratory disorders (40.8% v 37.7%) than the UK nations specified and proportionally fewer deaths due to neurological disorders (9.2% v 14.2%) and infection (6.7% v 8.4%).

Table 17
Cause of death, neonates, North West Region, 2008/09 and 2009/10

	2008/09		2009/10	
	Number	Percentage ¹	Number	Percentage ¹
Major Congenital Anomaly	42	19.7	54	22.7
Central nervous system	4		4	
Cardiovascular system	6		15	
Respiratory system	3		5	
Gastro-intestinal system	--		1	
Urinary tract	5		3	
Musculo-skeletal system	4		4	
Multiple anomalies	9		7	
Chromosomal disorders	6		8	
Metabolic Disorders	1		2	
Other	4		5	
Extreme prematurity (less than 21+6 weeks)	29	10.2	31	13.0
Respiratory disorders	99	46.5	97	40.8
Severe pulmonary immaturity	58		64	
Surfactant deficiency lung disease	20		11	
Pulmonary hypoplasia	9		8	
Meconium aspiration syndrome	--		1	
Primary persistent pulmonary hypertension	1		0	
Chronic lung disease / bronchopulmonary dysplasia (BPD)	1		1	
Other (includes pulmonary haemorrhage)	10		12	
Gastro-intestinal disease	2	0.9	5	2.1
Necrotising enterocolitis (NEC)	2		5	
Other	--		0	
Neurological disorder	17	8.0	22	9.2
Hypoxic-ischaemic encephalopathy (HIE)	13		13	
Intraventricular / Periventricular haemorrhage	3		6	
Other	1		3	
Infection	15	7.0	16	6.7
Generalised (sepsis)	10		14	
Pneumonia	--		0	
Meningitis	4		1	
Other	1		1	
Injury / Trauma	--	--	--	--
Other specific causes	7	3.3	7	2.9
Malignancies / tumours	1		0	
Other	6		7	
Sudden unexpected deaths	2	0.9	4	1.7
SUDI	--		1	
Infant deaths – Cause unascertained	2		3	
Unclassified	--	--	2	0.8

¹ Percentages are calculated excluding any not known or missing values.

Table 18 illustrates the provisional causes of death by age group. In this way, we can see which causes of death are more prevalent within different age groups.

Table 18
Provisional cause of death by age, North West Region 2009/10

	Number (% of children in age group ¹)				
	28-364 days	1-4 years	5-9 years	10-14 years	15-18 years
Deliberately inflicted injury, abuse or neglect	1 (0.8)	7 (8.3)	1 (2.8)	--	2 (3.6)
Severe abuse	--	--	--	--	--
Suspected homicide	1	6	1	--	2
Severe neglect leading to death	--	1	--	--	--
Suicide or deliberate self-inflicted harm	--	--	--	4 (10.3)	5 (8.9)
Suicide	--	--	--	4	5
Alcohol abuse	--	--	--	--	--
Drug abuse	--	--	--	--	--
Other forms of self-harm	--	--	--	--	--
Trauma and other external factors	--	12 (14.3)	4 (11.1)	9 (23.1)	13 (23.2)
Road traffic accident	--	7	2	3	10
Head injury, other or multiple trauma	--	4	--	3	2
Burn injury	--	--	1	1	--
Drowning	--	--	1	2	1
Unintentional self-poisoning	--	--	--	--	--
Anaphylaxis & other extrinsic factors	--	1	--	--	--
Malignancy	1 (0.8)	10 (11.9)	9 (25.0)	6 (15.4)	8 (14.3)
Solid tumours	--	6	8	3	4
Leukaemias & lymphomas	1	4	1	3	3
Malignant proliferative conditions	--	--	--	--	1
Acute medical or surgical condition	4 (3.1)	3 (3.6)	6 (16.7)	4 (10.3)	10 (17.9)
Chronic medical condition	13 (10.2)	15 (17.9)	3 (8.3)	3 (7.7)	8 (14.3)
Chromosomal, genetic and congenital anomalies	31 (24.4)	11 (13.1)	11 (30.6)	6 (15.4)	7 (12.5)
Perinatal / neonatal event	23 (18.1)	1 (1.2)	--	--	--
Prematurity	20	--	--	--	--
Birth-related injury	--	1	--	--	--
Other	3	--	--	--	--
Infection	8 (6.3)	8 (9.5)	1 (2.8)	3 (7.7)	1 (1.8)
Sudden unexpected, unexplained death	46 (36.2)	17 (20.2)	1 (2.8)	4 (10.3)	2 (3.6)
SUDI	46	--	--	--	--
Unexplained death of an older child	--	17	1	4	2
Total	127 (100)	84 (100)	36 (100)	39 (100)	56 (100)

¹ Percentages are calculated excluding any not known or missing values.

Figure 7 shows the deaths that were classified by the notifier as unexpected and by the CDOP as preventable (including potentially preventable and with modifiable factors) by cause of death as determined by the CDOP. Deaths due to external factors or deliberate harm were most likely to be considered preventable or potentially preventable or to have modifiable factors identified. Table 19 shows the CDOP categorisation of cause of death for neonatal deaths and the proportion of each that were considered unexpected or preventable. Few neonatal deaths were thought to be either unexpected or preventable.

Figure 7
Unexpected and preventable deaths by cause of death as categorised by CDOP, children ages 28 days to 18 years, North West Region 2009/10

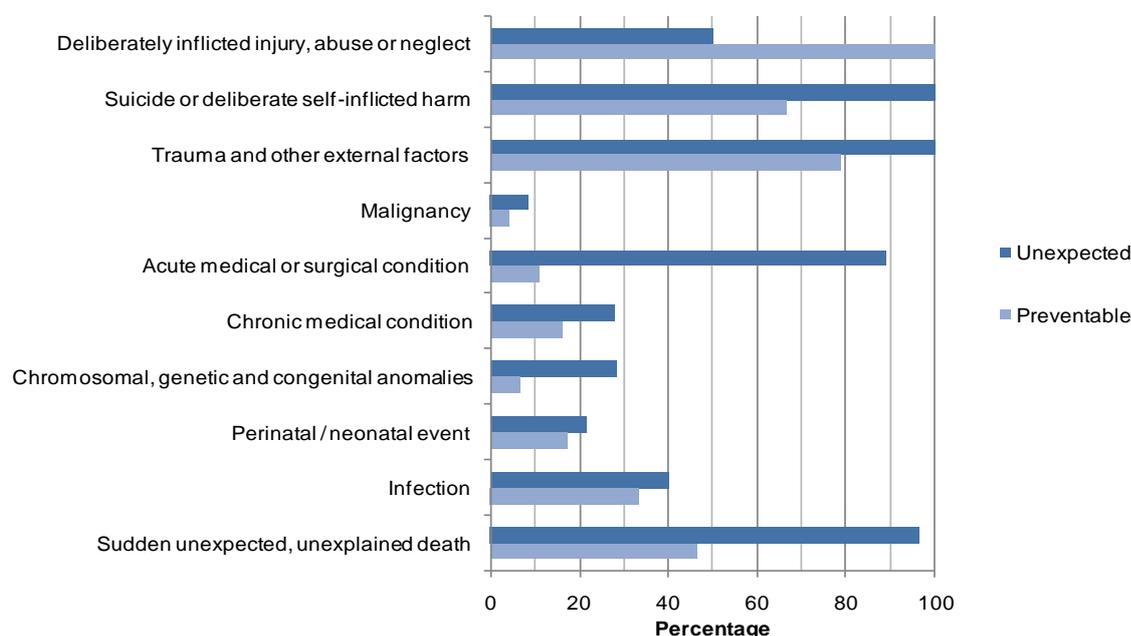


Table 19
Unexpected and preventable deaths, neonatal deaths, North West Region 2009/10

CDOP classification of death	Number (% of children in that cause of death group ¹)		
	Unexpected	Preventable	TOTAL Neonates
Deliberately inflicted injury, abuse or neglect	--	--	--
Suicide or deliberate self-inflicted harm	--	--	--
Trauma and other external factors	--	--	--
Malignancy	--	--	--
Acute medical or surgical condition	--	--	--
Chronic medical condition	--	--	--
Chromosomal, genetic and congenital anomalies	2 (5.7)	2 (5.7)	35
Perinatal / neonatal event	10 (14.5)	4 (5.8)	69
Infection	1 (33.3)	--	3
Sudden unexpected, unexplained death	1 (100)	1 (100)	1
Total	14 (13)	7 (6.5)	108

¹ Percentages are calculated excluding any not known or missing values.

Non-natural Deaths and Events

Further information surrounding the circumstances of deaths was recorded, including events occurring that led to the death. Table 20 shows the number of these events among the total deaths in the North West 2009/10 compared to those that occurred in 2008/09.

Table 20

**Events known to have occurred, children ages 28 days to 18 years, North West Region
2008/09 and 2009/10**

	2008/09		2009/10	
	Number	Percentage ¹	Number	Percentage ¹
Road traffic collision	26	6.7	21	6.1
Drowning	5	1.3	4	1.2
Fires / burns	2	0.5	2	0.6
Poisoning	--	--	--	--
Other accident	5	1.3	7	2
Substance misuse	1	0.3	--	--
Apparent homicide	9	2.3	6	1.7
Apparent suicide	12	3.1	9	2.6
Total	60	15.5	49	14.3

¹ Percentages are calculated excluding any not known or missing values.

Sudden unexpected deaths in infancy

Tables 21 and 22 show additional information that is known for the 46 children that were classified at notification as having a sudden unexpected death in infancy.

Table 21
Additional information about SUDI deaths, children ages 28 days to 1 year, North West Region 2009/10

	Number	Percentage ¹
Age		
28 days-2 months	19	41.3
3-5 months	18	39.1
6-8 months	7	15.2
9-11 months	2	4.3
Birthweight		
<2.5 kg	9	31.0
2.5 - 3.9 kg	19	65.5
4.0 kg or more	1	3.4
<i>Not known</i>	17	--
Gestational age at birth		
<30+0 weeks	1	3.2
30+0 to 36+6 weeks	8	25.8
37+0 weeks or more	22	71.0
<i>Not known</i>	15	--
Deprivation quintile		
1 (least deprived)	1	2.2
2	2	4.3
3	1	2.2
4	15	32.6
5 (most deprived)	27	58.7
Mother smoker		
Yes	24	75.0
No	8	25.0
<i>Not known</i>	14	--
Father smoker		
Yes	17	81.0
No	4	19.0
<i>Not known</i>	25	--
Mother known to abuse alcohol		
Yes	7	33.3
No	14	66.7
<i>Not known</i>	25	--
Father known to abuse alcohol		
Yes	6	40.0
No	9	60.0
<i>Not known</i>	31	--
Mother known substance abuser		
Yes	9	36.0
No	16	64.0
<i>Not known</i>	21	--
Father known substance abuser		
Yes	6	46.2
No	7	53.8
<i>Not known</i>	33	--

Table 22**SUDI supplemental information, children ages 28 days to 1 year, North West Region 2009/10**

	Number	Percentage ¹
What position was child put to sleep on?		
Back	11	57.9
Front	5	26.3
Side	3	15.8
<i>Not known</i>	27	--
Was the child sleeping with another person at the time of death?		
Yes	14	43.8
No	18	56.3
<i>Not known</i>	14	--
Where was the child put to sleep?		
Bed	11	34.4
Cot	8	25.0
Carry cot	--	--
Sofa	4	12.5
Moses basket	2	6.3
Car chair	--	--
Pram	2	6.3
Other	5	15.6
<i>Not known</i>	14	--

¹ Percentages are calculated excluding any not known or missing values.

Suicides

CMACE has been notified of 10 child deaths in the 2009/10 data collection year that were provisionally identified as an apparent suicide. There were 15 child deaths from apparent suicide notified in 2008/09. Nine of the 10 child death in 2009/10 (90%) were marked on the B form as an apparent suicide. Seven of the deaths have thus far been reviewed by the Child Death Overview Panel and results reported back to CMACE; all but one of these have been classified as *Suicide or Self-harm*, with the remaining death classified as *Trauma or other external factors*, following the coroner's verdict. One of these deaths was determined to be "Preventable", and three were classified as "Potentially Preventable".

Of the 10 deaths, 4 (40%) were of children aged 14 years or less (the youngest was 11 years old), and 6 (60%) were of children 15 to 17 years of age. Four (40%) of the children were males. All of the children were of white ethnic origin. Four (40%) children were in the most deprived quintile, and one (10%) child lived in the least deprived quintile.

Table 23

Circumstances of death for deaths notified as apparent suicides, children ages 28 days to 18 years, North West Region 2009/10

	Number	Percentage
Mode of death		--
Planned palliative care	--	--
Found dead / collapsed	10	100
Witnessed event	--	--
Active withdrawal of treatment	--	--
Brain stem death	--	--
<i>Not known</i>	--	--
Place of death		
Home	3	30
Hospital	3	30
Other private residence	1	10
Foster home	1	10
Residential care	--	--
Public place	2	20
School	--	--
Hospice	--	--
Mental health unit	--	--
Abroad	--	--
Other	--	--
<i>Not known</i>	--	--
Method of suicide		
Hanging	8	80
Jumping / lying before a road	1	10
Self-poisoning	1	10
<i>Not known</i>	--	--
Attempted resuscitation		
Yes	4	40
No	4	30
<i>Not known</i>	3	30

Table 24**Health of the children for deaths notified as apparent suicides, children ages 28 days to 18 years, North West Region 2009/10**

	Number	Percentage
Known mental or behavioural disorder at time of death		
Yes	1	10
No	9	90
<i>Not known</i>	--	--
Known previous mental or behavioural disorder		
Yes	1	10
No	9	90
<i>Not known</i>	--	--
Medications prescribed at time of death		
Yes	1	10
No	7	70
<i>Not known</i>	2	20
Developmental delay or impairment		
Yes	3	30
No	7	70
<i>Not known</i>	--	--
Receiving special education support		
Yes	4	40
No	3	30
<i>Not known</i>	3	30

Table 25**Social circumstances of children for deaths notified as apparent suicides, children ages 28 days to 18 years, North West Region 2009/10**

	Number	Percentage
Quintile of deprivation		
1 (least deprived)	1	10
2	1	10
3	2	20
4	2	20
5 (most deprived)	4	40
<i>Not known</i>	--	--
In education		
School	6	60
College	1	10
Not in education	1	10
Left education		
Employed	--	--
Unemployed	1	10
<i>Not known</i>	1	10
Who child lived with at time of death <i>(does not equal 100% as some children lived with more than one carer)</i>		
Mother	6	60
Father	4	40
Step-parent	1	10
Other relative(s)	1	10
Foster carer(s)	1	10
Private fostering	--	--
Residential unit	1	10
Other	1	10
<i>Not known</i>	--	--
Subject to child protection plan		
At time of death	--	--
Previously	5	50
Not at all	3	30
<i>Not known</i>	2	20
Subject to statutory order		
At time of death	1	10
Previously	3	30
Not at all	5	50
<i>Not known</i>	1	10
Assessed as child in need (Section 17)		
At time of death	--	--
Previously	4	40
Not at all	5	50
<i>Not known</i>	1	10
Domestic violence in household		
Yes	2	20
No	6	60
<i>Not known</i>	2	20

Figure 8
Month of death for deaths notified as apparent suicides, children ages 28 days to 18 years, North West Region 2009/10

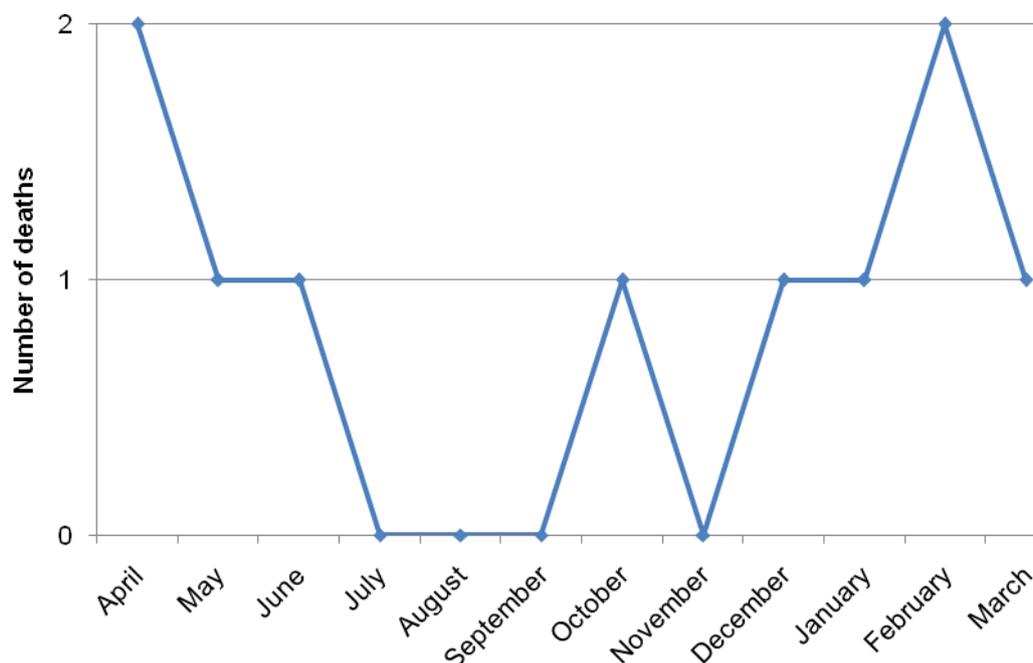


Table 26
Agencies involved with children for deaths notified as apparent suicides, children ages 28 days to 18 years, North West Region 2009/10

Agencies	Number	Percentage
<i>(does not equal 100% as some children had involvement with multiple agencies)</i>		
Health	2	20
Hospital in-patient	2	20
Hospital out-patient	--	--
Emergency Department	2	20
GP	4	40
Health Visitor	4	40
School Nurse	5	50
CAMHS	2	20
Other Health	--	--
Police	3	30
Children's Social Services	3	30
School	1	10
Connexions	2	20
Probation	--	--
Other	8	80

About half of the agencies that were identified as being involved at some time with the child did not indicate when the last involvement was. Of those that did have times indicated, only 5 agencies were involved with a child in the year prior to death: hospital out-patient, GP, school nurse, police and school. CAMHS was involved with two children, but it was not indicated when the last involvement was.

CMACE received the cause of death as determined by the coroner for 6 of the child deaths and in no cases was the initial assessment of suicide confirmed.

Medical Conditions

Table 27 shows medical conditions that were present at time of death among children ages 28 days to 18 years. Almost three quarters of the children who died had at least one medical condition at the time of death.

Table 27
Medical conditions present at the time of death, children ages 28 days to 18 years, North West Region 2009/10

Condition	Number	Percentage [†]
None	78	27.3
Congenital condition	44	15.4
Perinatal condition	28	9.8
Respiratory disease	26	9.1
Neurological disease	14	4.9
Renal/urinary disease	13	4.5
Cardiac disease	12	4.2
Gastrointestinal/liver disease	9	3.1
Neoplastic disease	5	1.7
Metabolic disease	2	0.7
Haematological disease	2	0.7
Mental and behavioural disorder	2	0.7
Endocrine disease	--	--
Other	28	9.8
Condition not stated	83	29.0

[†] Percentages are calculated excluding any not known or missing values.

Influenza A H1N1 (swine flu)

In 2009/10, seven children in the North West region who died were known or suspected to have had influenza A H1N1 (swine flu) before their death. In one case the final cause of death was thought to be a chronic medical condition rather than the infection.

Of the remaining 6 children, four (67%) were known to have had virological confirmation of H1N1 influenza. Four (67%) were also known to have been given antiviral medications. Five (83%) of the children died in an intensive care unit; the remaining child died at home.

Three children (50%) had H1N1 noted on the death certificate, and the other 3 had no death certificate available. Only 3 (50%) of the children had the CDOP assessments available; all had cause of death categorised as Infection. The 3 children where death certificates were available were not necessarily the same three whose deaths had been assessed by the CDOP.

Three children (50%) were between the ages of 10 and 14. The average age was 9 years (range 0 – 15 years). Five of the children were female (83%). It was unknown whether one child had any medical conditions previous to or at the time of death; the other 5 all had chronic medical conditions, such as cerebral palsy, epilepsy / seizures, and congenital heart disease. The deaths occurred throughout the main period of the pandemic in the UK (August to February), with half of the deaths occurring in October, which was the peak month of estimated number of clinical cases of H1N1 throughout the UK (Pebody 2010).

6 History of the Children

Information about children's health and circumstances prior to death may help inform the overall picture of these children, as well as providing more information when considering intervention strategies.

Maternal Factors among Neonatal Deaths

Table 28 shows information about antenatal care among mothers of infants (less than 28 days) that died.

Table 28
Late booking for antenatal care, neonates, North West Region 2009/10

Antenatal Care	Number	Percentage ¹
Booked late (>12+6 weeks)	81	31.2
Booked later than 20+6 weeks	11	4.2
Average gestation at booking	12 ⁺²	
Minimum	4 ⁺⁴	
Maximum	29 ⁺²	
<i>Missing</i>	12	

¹ Percentages are calculated excluding any not known or missing values.

Table 29
Gestational age at delivery, neonates, North West Region 2009/10 compared to England, Wales, Northern Ireland and Crown Dependencies 2008

Gestation at delivery	North West Region 2009/10		England, Wales, Northern Ireland and the Crown Dependencies 2008 ²	
	Number	Percentage ¹	Number	Percentage ¹
<24 ⁺⁰ weeks	82	30.7	695	30.5
24 ⁺⁰ to 27 ⁺⁶	79	29.6	537	23.6
28 ⁺⁰ to 31 ⁺⁶	26	9.7	236	10.4
32 ⁺⁰ to 36 ⁺⁶	23	8.6	257	11.3
37 ⁺⁰ to 41 ⁺⁶	56	21.0	529	23.2
42 ⁺⁰ or more	1	0.4	23	1.0
Average	28			
Minimum	15			
Maximum	42			
<i>Missing</i>	5			

¹ Percentages are calculated excluding any not known or missing values.

² CMACE: Perinatal Mortality 2008

Care Provision

Table 30 shows the care that was received by children ages 28 days to 18 years. It is notable that few of the children had any contact with primary care in the 3 months prior to their death, as 74% were known to have medical conditions at death, many of which would presumably be regularly assessed in primary care.

Table 30
Care before death, children ages 28 days to 18 years, North West Region 2009/10

	Number	Percentage ¹
Contact with primary care in 3 months prior to death		
GP	43	12.6
Health visitor	21	6.2
School nurse	6	1.8
Practice nurse	3	0.9
In hospital for longer than 3 months or from birth		
Yes	43	24.7
No	131	75.3
Medication prior to death		
None	62	29.8
Antibiotics	35	16.8
Insulin	1	0.5
Asthma prevention / treatment	8	3.8
Anticonvulsants	18	8.7
Corticosteroids	6	2.9
Antidepressants	0	0
Methylphenidate	0	0
Major tranquilisers	5	2.4
Other	47	22.6
Surgery within the last 30 days		
None	123	82.6
Intra-cranial	1	0.7
Intra-thoracic	10	6.7
Intra-abdominal	6	4
Other	7	4.7
Type not specified	2	1.3

¹ Percentages are calculated excluding any not known or missing values.

Almost half of the children ages 28 days to 18 years who died were recorded as having some kind of developmental delay, impairment or disability. The most prevalent impairments were learning impairments (15% of all children who died) and motor impairments (13% of all children who died).

Family and Social Risk Factors

Information regarding the family and social background of children that died may offer information about at-risk children and potential strategies for intervention. Table 31 shows children ages 28 days to 18 years that died who were under child protection plans or subject to statutory orders. Some children were subject to more than one plan / order. Figures 9 and 10 show the most recent child protection plans and statutory orders, respectively, that the child was under prior to his or her death.

Table 31

Child protection and statutory orders among the children and their families, children ages 28 days to 18 years, North West Region 2009/10

	Number (Percentage ¹)		
	At time of death	Previously	Never
Child or sibling subject to any child protection or statutory order	19 (7.1)	32 (12.0)	216 (80.9)
Child protection plan	6	11	241
Child subject to statutory order	8	5	233
Assessed as child in need (Section 17)	6	29	201
Sibling subject to child protection plan	2	14	214
Sibling subject to statutory order	4	5	221

¹ Percentages are calculated excluding any not known or missing values.

Figure 9

Most recent child protection plan, children ages 28 days to 18 years, North West Region 2009/10

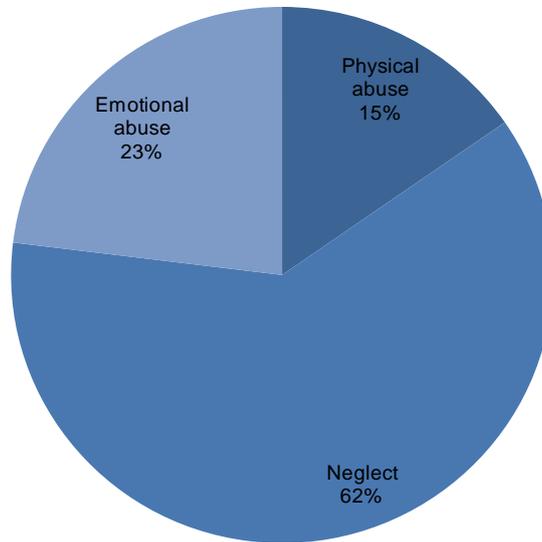


Figure 10

Most recent statutory order, children ages 28 days to 18 years, North West Region 2009/10

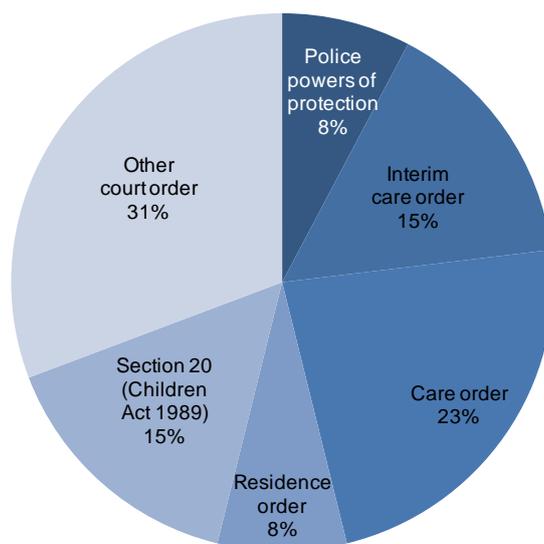


Table 32 shows the known presence of domestic violence in the household for children ages 28 days to 18 years that died. Thirty percent of all children who died were known to have domestic violence in the household. Seventy-eight percent of these children with known domestic violence in the household died unexpectedly and 22% had preventable deaths.

Table 32

Domestic violence in household, children ages 28 days to 18 years, North West Region 2009/10

	Number (% of total children in that group ¹)		Total Child Deaths (28 days to 18 years) (% of all child deaths ¹)
	Unexpected	Preventable	
Domestic violence in the household			
Yes	36 (78.3)	10 (21.7)	46 (29.9)
No	56 (51.9)	19 (17.6)	108 (70.1)

¹ Percentages are calculated excluding any not known or missing values.

Table 33

Social/family risk factors among neonatal deaths, North West Region 2009/10

	Number (Percentage ¹)
	Neonates (0-27 days)
Siblings subject to child protection plan	
Yes	1 (0.7)
No	138 (99.3)
Domestic violence in the household	
Yes	6 (4.3)
No	132 (95.7)

¹ Percentages are calculated excluding any not known or missing values.

Table 34 shows the agencies that were involved with children prior to their death. Although many agencies were involved with the children at some point in the children's lives, few of these were involved in the 6 months prior to the children's deaths. For example, children's social care was involved with 41 children, but only 10 (24%) children had the last contact with social care in the last 6 months of life.

Table 34
Agencies involved with the child, children ages 28 days to 18 years, North West Region
2009/10

	All contact with agencies		Children with first contact within 6 months prior to death		Children with last contact within 6 months prior to death	
	Number	Percentage (% of all children)	Number	Percentage (% of children who had first contact within 6 months)	Number	Percentage (% of children who had last contact within 6 months)
Health	137	39.9	15	10.9	32	23.4
Hospital in-patient	79	23.0	22	27.8	40	50.6
Hospital out-patient	34	9.9	1	2.9	12	35.3
Emergency dept	28	8.2	7	25.0	14	50.0
GP	60	17.5	5	8.3	19	31.7
Health visitor	70	20.4	14	20.0	23	32.9
School nurse	28	8.2	3	10.7	8	28.6
CAMHS	3	0.9	--	--	--	--
Other Health	4	1.2	--	--	--	--
Police	21	6.1	3	14.3	4	19.0
Children's social care	41	12.0	5	12.2	10	24.4
School/nursery etc	14	4.1	2	14.3	5	35.7
Connexions	3	0.9	--	--	--	--
Probation	--	--	--	--	--	--
Other	187	54.5	6	3.2	22	11.8

7 Details of the Children's Families

Even for children that did not have known social or family risk factors, information about children's living arrangements prior to their deaths may be informative for the regional assessment of deaths. Table 35 shows the family members and other adults with whom children were living. Eighteen percent of children, ages 28 days to 18 years, who died were living in single-parent households, all with their mother. This compares to 23% of all children (0 to 16 years old) in the North West region who live in single-parent households (Health Survey for England 2008).

Table 35
Who the child was living with at the time of death, children ages 28 days to 18 years, North West Region 2009/10

Adults	Number (% of children in that group ¹)		Total Child Deaths (28 days to 18 years)
	Unexpected	Preventable	
Mother only	37 (68.5)	9 (16.7)	54 (18.1)
Father only	--	--	--
Mother and Father together	74 (54.8)	21 (15.6)	135 (45.2)
Mother + 1 or more other ²	21 (72.4)	7 (24.1)	29 (9.7)
Father + 1 or more other ²	3 (100)	1 (33.3)	3 (1.0)
Mother and Father and others ²	17 (53.1)	5 (15.6)	32 (10.7)
Others only ²	8 (22.2)	4 (11.1)	36 (12.0)
Foster carers	5 (55.6)	2 (22.2)	9 (3.0)
Private fostering	--	--	--
Residential unit	1 (100)	--	1 (0.3)

¹ Percentages are calculated excluding any not known or missing values.

² The "other" group includes other relatives, parent's partner, long-term hospital, hospice, etc

Table 36 shows characteristics of family members with whom children were living for older children and Table 37 shows family characteristics for neonatal deaths.

Table 36
Family and Environment, children ages 28 days to 18 years, North West Region 2009/10

	Number (Percentage ¹) <i>unless otherwise specified</i>		
	Mother	Father	Other Significant Adult
Age – Average (Range)	31.69 (15-57)	35.50 (16-73)	35.46 (16-60)
Smoker	51 (35.9)	36 (42.9)	8 (66.7)
Learning disability	15 (9.6)	1 (1.1)	3 (25.0)
Mental health issues	36 (22.8)	7 (8.3)	1 (10.0)
Alcohol misuse	17 (10.8)	13 (15.3)	1 (11.1)
Substance misuse	14 (9.3)	10 (11.6)	--
Known to police	55 (30.9)	65 (47.8)	13 (59.1)

¹ Percentages are calculated excluding any not known or missing values.

Table 37
Family and Environment, neonates, North West Region 2009/10

Factor	Number (Percentage ¹) <i>unless otherwise specified</i>
	Parent or other Significant Adult
Maternal Age ²	28.5
Average (Range)	(15 – 43)
Maternal Smoking ²	17 (6.3)
Learning disability	--
Mental health issues	9 (6.5)
Alcohol misuse	6 (2.3)
Substance misuse	10 (3.8)

¹ Percentages are calculated excluding any not known or missing values.

² Mother only

8 Data Quality and Completion Rates

The following section is intended to inform the regional collaboration in regards to the data quality and completion in the second year. The completion rates of various data items may offer insight into variables and information that are inherently difficult to obtain. Details of the parent or other carers also have very low completion rates, which may indicate that these factors are inherently problematic (Figure 11). For neonatal deaths, the variables that are collected by the CMACE supplementary form are more likely to have lower completion rates than those collected on the PDN itself (Figure 12). This may be due to difficulty in finding these items in maternal case notes.

Figures 11 and 12 show the completion rates for variables from the A and B forms for child deaths in 2009/10 compared to deaths in 2008/09. As can be seen, the information for virtually all the variables was more fully obtained in the second year of data collection.

Figure 11
Completion rates for variables from Notification form (Form A), children ages 28 days to 18 years, North West Region 2009/10 compared to 2008/09

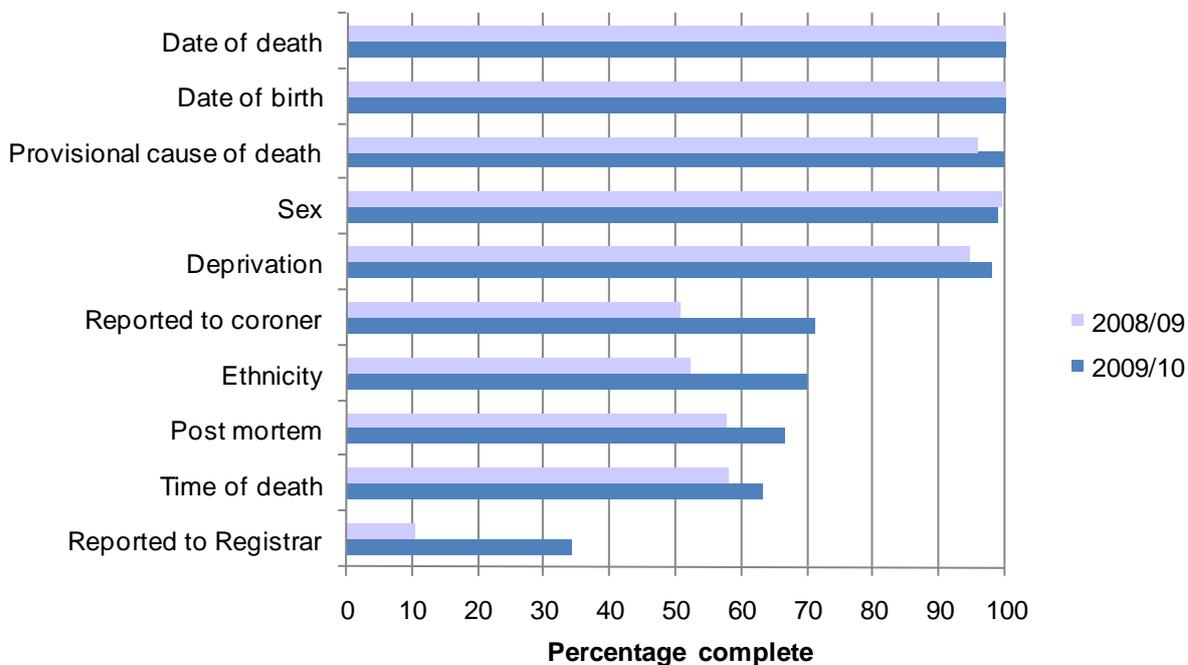


Figure 12
Completion rates for Form B, children ages 28 days to 18 years, North West Region 2009/10

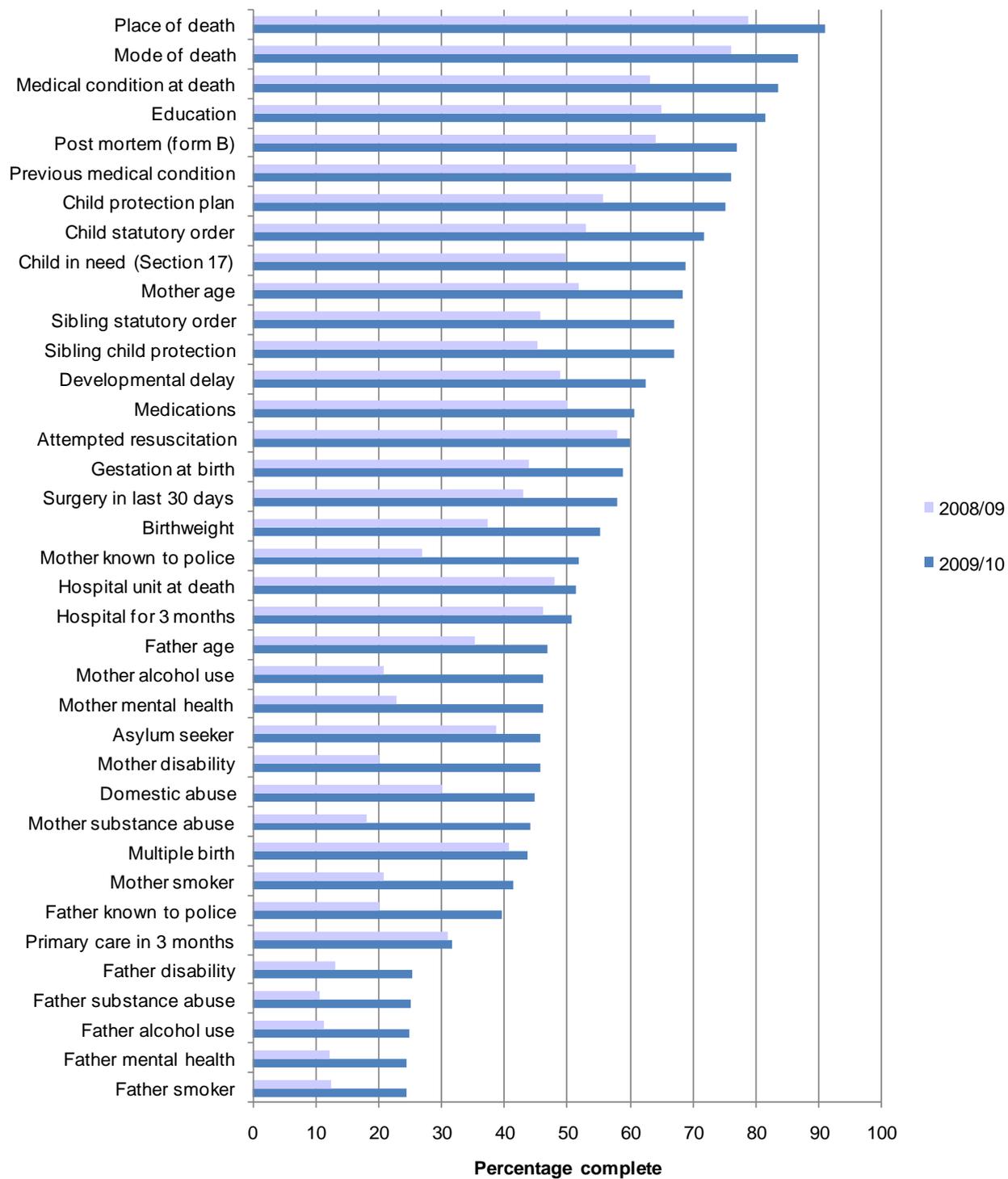
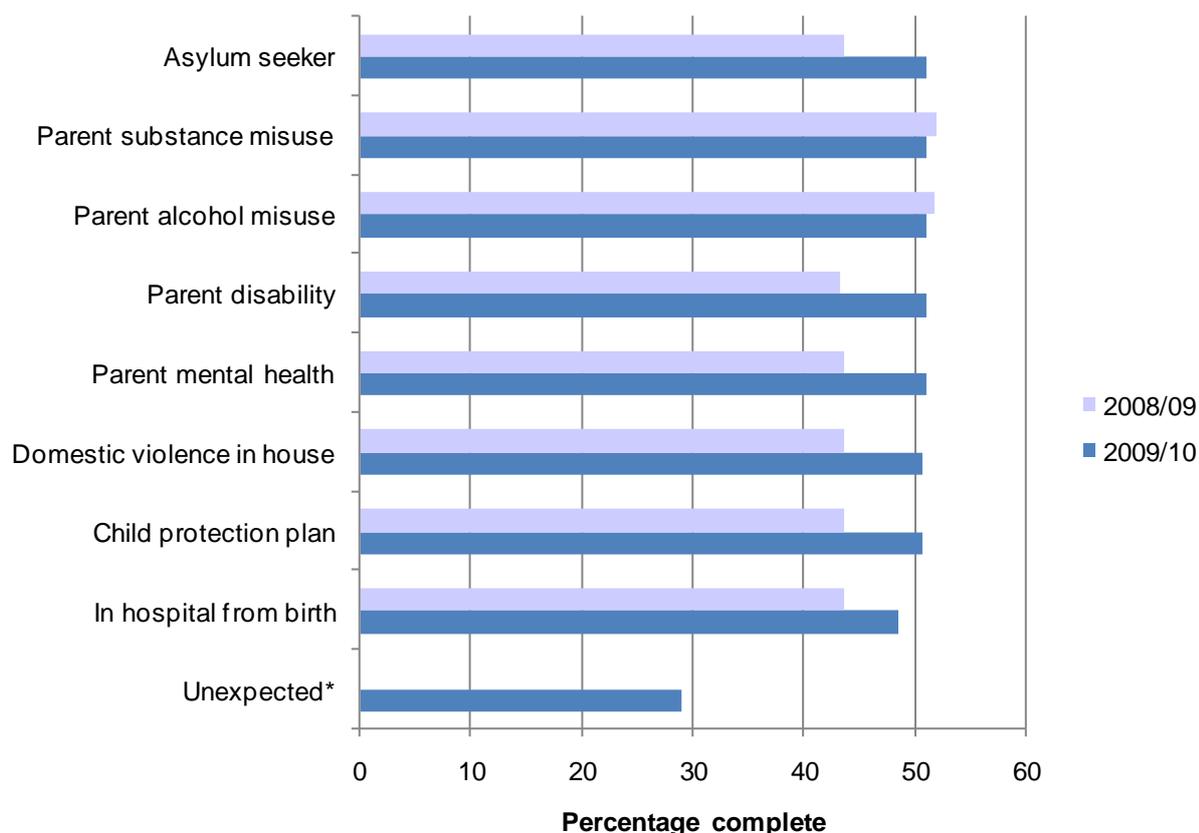


Figure 13
Completion rates for PDN Supplementary Form, neonates, North West Region 2009/10



*Not collected in 2008/09

The variables that have high rates of completion as opposed to low rates of completion are shown in Tables 38 and 39. The number of LSCBs that had the highest and lowest completion rates for each variable is also shown. This information may give the regional collaboration more information about the variables that are difficult to collect versus whether some authorities are struggling more than others to obtain data.

Table 38
Best completed variables

	Overall (average) completion rate	Completion rate of highest authority	Number of authorities with this rate	Completion rate of lowest authority	Number of authorities with this rate
Sex	98.8	100	21	78.6	1
Deprivation quintile	98.0	100	20	70.6	1
Place of death	91.0	100	11	50.0	1
Mode of death	86.6	100	4	50.0	1
Medical condition at death	83.4	100	6	50.0	1
Education / occupation	81.3	100	2	37.5	1
Post mortem (form B)	77.0	100	3	47.1	1
Previous medical conditions	76.1	100	3	50.0	1
Child protection plan	75.2	100	1	33.3	1
Child statutory order	71.7	100	1	22.2	1

Table 39
Worst completed variables

	Overall (average) completion rate	Completion rate of highest authority	Number of authorities with this rate	Completion rate of lowest authority	Number of authorities with this rate
Multiple birth	43.7	100	1	0	2
Mother smoker	41.4	100	1	7.7	1
Father known to police	39.7	80	1	0	1
Reported to Registrar	34.1	100	1	0	5
Primary care in 3 months	31.8	100	1	5.9	1
Father disability	25.4	80	1	0	1
Father substance abuse	25.1	80	1	8.3	1
Father alcohol use	24.8	80	1	0	1
Father smoker	24.5	100	1	0	1
Father mental health	24.5	80	1	0	1

Figure 14 shows the overall completion rate among LSCBs.

Figure 14
Average completion rate for all variables, Forms A and B and CDOP variables, for each LSCB, children ages 28 days to 18 years, North West Region 2009/10

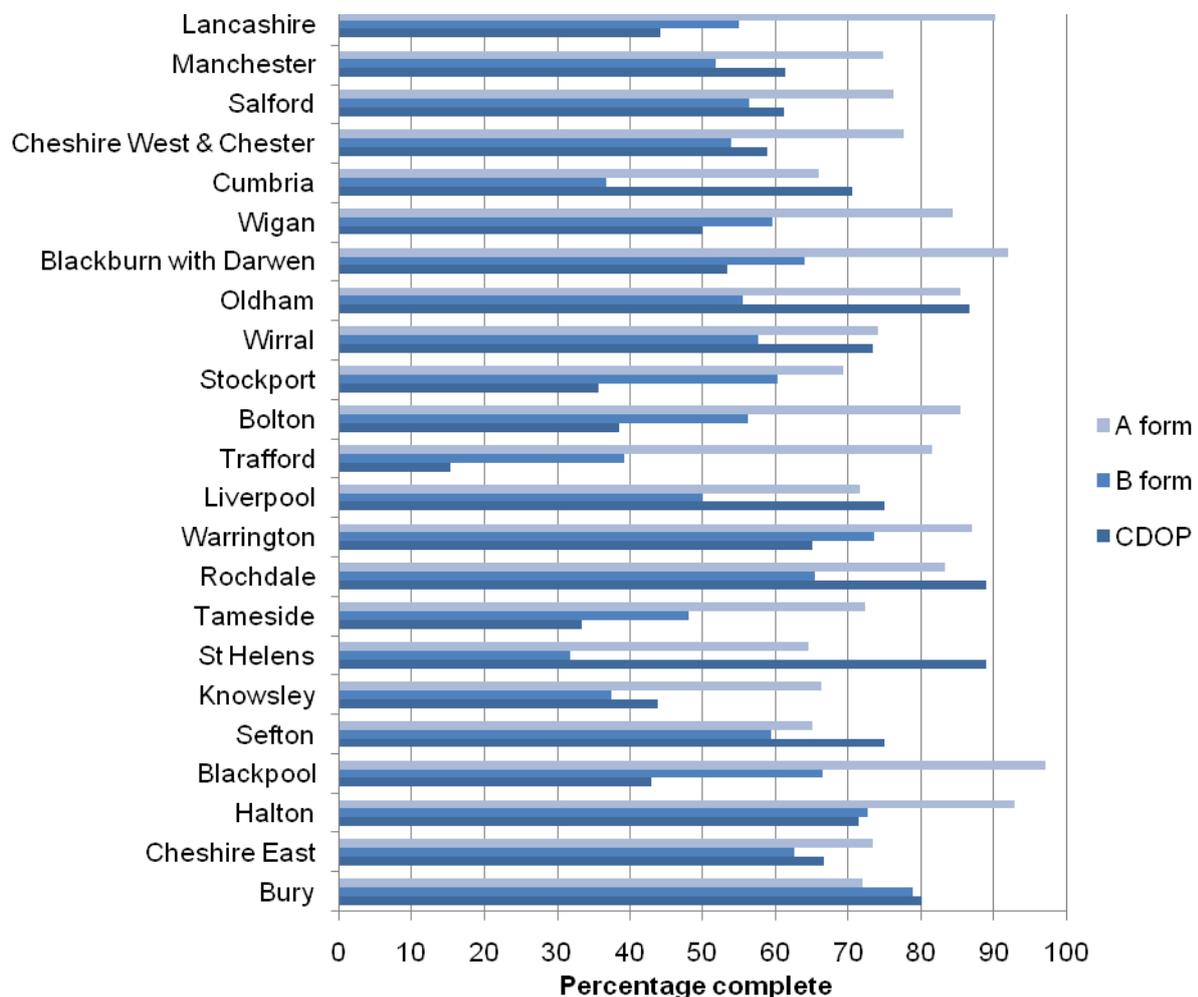


Table 40

Average completion rate for variables on Forms A and B, for LSCBs grouped together by size (based on number of deaths), children ages 28 days to 18 years, North West Region 2009/10

Group	Average number of deaths	Average completion rate
1 (smallest 4 LSCBs)	6.3	73.1
2	8.6	61.6
3	12.0	61.5
4	15.0	66.7
5 (largest 5 LSCBs)	30.2	62.3