

Conclusions

Some features and factors clearly affect the local rate of infant deaths.

Cause of death

Over half were of low birth weight, which links to maternal health and nutrition before and during pregnancy.

Maternal health

Smoking and diet of mothers appear to be potentially significant contributors to the high local rate.

Early uptake of antenatal care and especially detection of individual risk behaviours in mother and of twins is important.

For mothers today, both their present nutritional status and as a child is relevant. In other words especially those who had a poorer nutrition as a child need a good diet in pregnancy. This becomes a really significant challenge for the health of local women, given the increasing levels of overweight and obesity today.

Genetic counselling for families that have already had a congenitally abnormal child is important, given the increased risk for future children.

Ethnicity of the infant deaths

The local rate was more than double that nationally for the non South Asian population. The local rate for babies of Pakistani origin was higher, as nationally. So locally infant deaths are a problem for families irrespective of ethnicity.

Marrying close relatives

The impact of consanguinity needs to be widely understood in contributing to congenital abnormalities in children of such relationships, i.e. it raises the risk to from 1 in 50 to 1 in 25 of births. Of much greater importance is the much higher risk of 1 in 4 births in families where there is already a congenitally abnormal child. So they need to be offered counselling including about consanguineous relationships in the close relations of such families.

In short marriage within families can be over exaggerated as a factor in congenital abnormality, except for very few where congenital abnormality has already occurred.

Next steps

Infant death will still occur within the population, but there are clear local action points to reduce the current increasing local rate. These include:

Supporting good maternal and family health

A key recommendation of the Annual Health Reports in both 2003 and 2005, it cannot be understated in its importance.

The personal behaviours of mothers profoundly affect the health of their unborn child and the health of their existing children into their own adulthood. Key behaviours are:

- Not smoking using the whole family approach including reassuring South Asian mothers that they can receive a fully confidential service.
- Having good balanced nutrition including the importance of reducing obesity and being underweight. So ensuring that the appropriate levels of folic acid, iron and vitamin D are included in a woman's diet via supplements if necessary to reduce the incidence of rickets and neural tube defects. Ideally, all South Asian children and women should have regular vitamin D supplements particularly when pregnant or breastfeeding.
- Stopping alcohol consumption and/or drug taking.
- Reducing unintended pregnancies.

Key information and support also needs to be offered to all parents after birth, e.g. on breastfeeding, diet, reducing accidents and about appropriate benefits.

All staff should ensure that all required data is collected and recorded in a timely and accurate way and to support future monitoring.

Smoking by the family significantly affects the health of the children so this remains a key priority for all services to support smoking families.

More awareness of genetic conditions which may cause infant death

Locally we need to understand better the impact genetics can have on future generations particularly in managing increased risk. It is important for communities locally to fully understand the role of consanguinity in contributing to congenital abnormalities in children of such relationships.

The actual impact of consanguinity on congenital abnormality in infant death, and the implications and impact it has on children and their families who live with resulting disabilities locally needs to be widely understood.

Good ante natal care is accessible and accessed

So the importance needs to be known within all communities. Key issues are:

- Accessing ante-natal care as soon as possible ensures that any factors arising can be well managed throughout the majority of the pregnancy.
- The management of diabetes, particularly gestational, assessment of any genetic inheritance issues and multiple pregnancies is particularly important as these carry higher risks of suffering infant death.
- Locally, services need to ensure that they can also respond and support women whose first language may not be English.
- Work locally should focus on ensuring all women are aware of and fully understand the programmes available and are able to make an informed decision about uptake.
- Access to support for healthy eating including supplements and not smoking.

Infant deaths in north Kirklees

Summary version - January 08



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Background

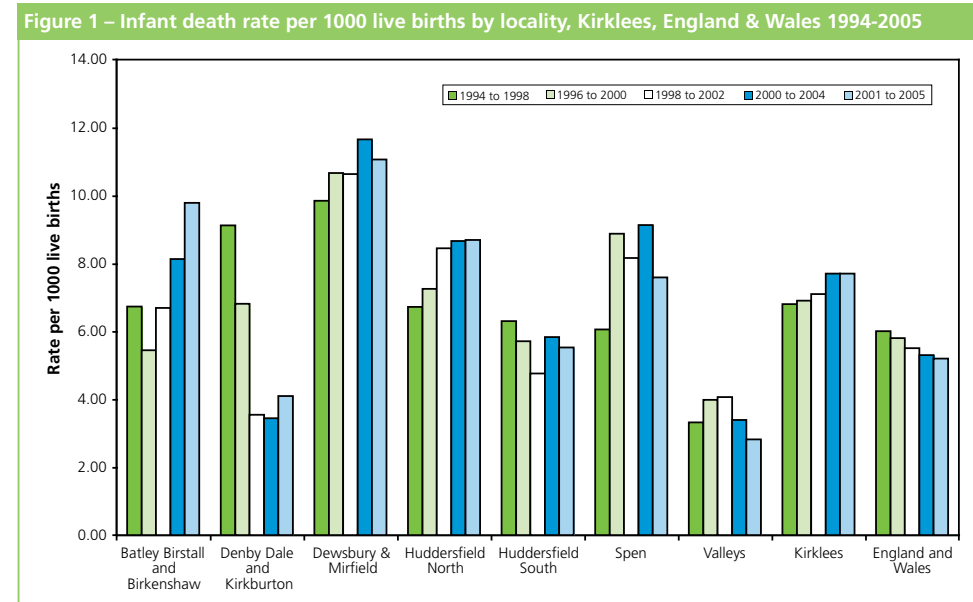
In the North Kirklees Annual Health Report for 2005, the Director of Public Health raised concern about increasing infant death rates. This then became a major priority for investigation by the Local Public Service Boards for Adults & Healthy Communities and for Children & Young People. This is a report of that investigation whose purpose was:

- To try and identify the factors that affect infant death
- To understand better what was happening locally,

In order to see if the situation could be improved.

The PCT collaborated closely with Mid Yorkshire Hospitals NHS Trust in carrying out a detailed analysis of paper records of all 106 infant deaths which occurred in north Kirklees during 2002 to 2005. The issues emerging from the analysis have also been discussed with the lead clinicians for maternity, obstetrics and paediatrics.

What is the problem about infant death?



Source: Office of National Statistics

Figure 1 shows wide inequalities between localities across Kirklees. Over 12 years the trend is up in four localities, most notably Batley, Dewsbury, Huddersfield North and Spen.

Births in north Kirklees

- The number of births is static for a number of years, around 2600, although the rate is higher than in England and Wales.
- In 2004, 34% of the live births were to mothers of South Asian origin, higher than the overall proportion of the population. This proportion of babies born to South Asian origin mothers is increasing.

Factors affecting infant death

A number of factors are associated with infant death. These include:

- congenital abnormalities
- prematurity
- low birth weight
- gender of the foetus
- age of the mother
- ethnicity
- deprivation including social class
- lifestyle behaviours
- access to relevant services

Congenital abnormalities are errors in the normal development of a foetus and are present from birth. They can also lead to premature delivery of the baby and a lower birth weight.

Congenital abnormalities arise for several reasons, including older age of the mother, as a result of genetic imbalance (i.e. inherited) or following maternal illness e.g. viral infection such as rubella. Taking Folate is effective in reducing the risk of certain congenital abnormalities.

Consanguinity is where two people are related to each other because they share a common ancestor. They are more likely to have the same genetic mutation that could result in a rare genetic disorder. The risk of having a child with a congenital or genetic disorder is about 2% in unrelated couples but rises to 4% in first cousins. Having a child with a recessive disorder, means that the risk for the parents of further affected children rises to 1 in 4.

Birth weight partly reflects the health of the mother and can affect the health of the foetus if low or high. If the baby is born prematurely it will have a low birth weight, so is more prone to ill health.

Smoking in pregnancy is the main risk for low birth weight, increasing the risk by 3.5 times for a baby born at full term. It accounts for 20-30% of all low birth weight babies in the USA. The more cigarettes smoked the more likely it is that an infant will be lower birth weight.

Nutritional status of a mother affects the birth weight of her child, and the risk in later life for that child of cardiovascular disease and non insulin dependent diabetes, especially if the mother is also obese or excessively thin. Taking the average number of decayed, missing or filled teeth in 5 year olds as a proxy for nutrition in young families, the rates for Batley and Dewsbury are 3, compared to 1.5 nationally. This shows a significant potential problem in the nutrition of these families and thus for their future children.

Maternal diseases such as diabetes, hypertension and renal disease, particularly if these diseases are not well monitored throughout pregnancy can also lead to low birth weight.

Breast feeding can help reduce infant death because it improves the child's nutrition and immunity in the first few months of life.

Alcohol consumption can lead to foetal abnormalities, particularly when the mother drinks to excess in the first trimester. The same is true for taking drugs. Both can leave the baby suffering addiction to the substance.

Summary of features and factors for infant deaths in north Kirklees during 2002-05

The gender, age and cause of death for infants who died was similar to the national picture.

The following factors were identified as risks at national level but did not appear to be influencing factors in north Kirklees:

- Age of mother – very few deaths occurred in young or old mothers who were the groups at greatest risk
- Social class – the pattern amongst deaths locally mirrors the profile of north Kirklees i.e. deaths were not particularly more frequent in lower social classes than the rest of north Kirklees.

Key infant features and factors

- The non South Asian death rate was over 50% higher than the national rate i.e. 8.6 vs. 5.
- The stillbirth rate was only slightly higher than the national rate.
- More than 2 in 3 of deaths occurred in the first month.
- Half were of South Asian origin, mainly Pakistani, compared to 1 in 3 births being of South Asian origin.
- Multiple births were far higher locally than nationally and mainly of white origin.
- Over half were born prematurely i.e. before 37 weeks of gestation.
- Over half were of low birth weight, which is linked to prematurity. This may be linked to the higher rates of smoking at delivery locally.
- Twice as many white babies, compared to Pakistani, were born before 31 weeks gestation. So white babies tended to have prematurity as their cause of death whereas Pakistani had congenital abnormality, and were more likely to be born near term.
- Cause of death is also related to the age of birth, as prematurity is a cause of death. This and congenital abnormality were responsible for over 2 in 3 of the deaths. Of those dying of congenital abnormality only 1 in 4 were premature.

Key maternal features and factors

- Very few were at the extremes of age of motherhood i.e. under 18 or over 40 years.
- Sibling history of congenital abnormality existed for 1 in 6 of the babies, mainly in Pakistani families.
- Over 1 in 3 of all mothers booked later than 16 weeks, especially Pakistani, (excluding not recorded), thus delaying early identification of relevant factors to manage.
- Screening for infection was high but for certain genetic screening was extremely low for South Asian mothers.
- Smoking was significant but alcohol and drug use was not.