

CESDI

Confidential Enquiry into Stillbirths and Deaths in Infancy

Executive Summary

of the
**6th
Annual
Report**

Focusing on:
The '1 in 10' Enquiries 1996-97
The '4kg and over' Enquiries 1997
Perinatal Pathology
Record Keeping
and
Developing the Enquiries

Since 1992 the Confidential Enquiry into Stillbirths and Deaths in Infancy (CESDI) has pioneered different approaches to gathering and interpreting information on a national scale in a variety of topics in maternity, neonatal and infant care. Much of the 6th Annual Report summarises the lessons that have been learnt through this process and discusses the ways forward.

Rapid Report Form Returns - 1997

The Rapid Report Form is the notification system used by CESDI since 1993. In 1997 10,418 deaths were notified: 1299 legal abortions, 1774 late fetal deaths, 3440 stillbirths, 2648 neonatal deaths, and 1257 postneonatal deaths.

Completeness of ascertainment is assessed using data from the Office for National Statistics (ONS) as the 'gold standard'. This is based on Death Notifications collected by the Registrar of Births and Deaths. The proportion of ONS deaths reported by CESDI rose from 93% in 1993 to 99% in 1996. In 1997 the numbers reported to CESDI exceeded the registered numbers of stillbirths, neonatal and infant deaths. This may be due to non registration or duplication of some records. Postneonatal deaths are the most difficult category to collect, but this too improved from 86% in 1993 to 95% in 1997.

The stillbirth rate (5.1/1000 total births) is significantly less for the first time since 1993. The neonatal (4.0/1000 live births), postneonatal (1.9/1000 live births) and combined (stillbirth, neonatal and postneonatal) (11.3/1000 total births) death rates are unchanged over the last 4 years.

Postmortem Rates

The postmortem rate for England, Wales and Northern Ireland was 54%, ranging from 44% in Mersey to 65% in South Western. This level has fallen slightly from 58% in 1993. Stillbirths were most likely to have a postmortem (62%) and neonatal deaths least likely (41%).

The '1 in 10' Enquiries (573 deaths in 1996-1997)

The purpose of the '1 in 10' programme was to sample a broad range of losses and thus to inform future work programmes. The criteria for '1 in 10' enquiry were all losses reported to CESDI excluding age at death greater than 27 completed days, weight at birth less than 1kg, fetal death before 24 completed weeks of pregnancy, and known major congenital abnormality.

Enquiries were held on 573 babies in 1996 to 1997. The following grading system was used:

Grade 0 no suboptimal care

Grade 1 suboptimal care not relevant to the death

Grade 2 suboptimal care where different care might have made a difference

Grade 3 suboptimal care where different care would reasonably be expected to have made a difference

Half of the enquiries were given an overall grade 2 (160) or grade 3 (124).

The results highlight the need for review of standards in antenatal and intrapartum care. The key findings were as follows:

Stillbirths (422 of the '1 in 10' enquiries)

- Stillbirths are the largest group of deaths between 20 weeks and one year of age (35% of all losses reported to CESDI)
- The terms 'unexplained' and 'unavoidable' are often used, yet enquiries revealed large numbers of potentially avoidable factors (45% had an overall grade 2 or 3).
- Whilst the majority of fetal deaths occurred in 'low risk' women, a significant minority had risk factors which were recognised either at the first antenatal visit (25%) or during the antenatal period (39%)
- A postmortem modified the clinical assessment in 12% of stillbirths.

Intrapartum deaths (87 of the '1 in 10' enquiries)

- Intrapartum related deaths represented 15% of the '1 in 10' group
- Care in labour particularly stands out as an area of practice for further review (72% had an overall grade 2 or 3).

The '4kg and over' Enquiries (151 deaths in 1997)

Large babies have an increased frequency of difficult deliveries, fetal distress, shoulder dystocia and gestational and pre-existing diabetes in the mother. In 1997 all babies (151) that died weighing 4kg and over were subject to a confidential enquiry organised by CESDI. Postneonatal deaths (after the first month) were excluded.

The risks of various causes of death in relation to the weight of the baby was calculated using data on all registered deliveries in England, Wales and Northern Ireland and the Rapid Report Form returns in 1997.

During pregnancy and up to the first year, babies weighing 4kg and over compared with those between 2.5 and 3.9kg are significantly:

- less likely to die overall
- more likely to die from an intrapartum related event

Thus particular attention should be given to suboptimal care issues related to labour.

The key findings from the review of the 151 enquiries are as follows:

Gestational diabetes and pre-existing diabetes

Three per cent (4) of this group were from mothers with pre-existing diabetes and 8% (12) related to gestational diabetes. The contribution from undiagnosed gestational diabetes could not be assessed.

Recommendations include :

- better supervision and early recourse to insulin treatment in the hyperglycaemic subject.
- if a large baby is suspected, other risk factors should be sought and, if found, followed up by a glucose tolerance test.

Antenatal Care

Failure to recognise or act appropriately in a case with a suspected large baby was the commonest antenatal comment made by the panels. Frequently it related to the circumstances in which the size of the baby was disregarded.

- If a large baby is suspected clinically, this should be communicated to the team caring for the woman in labour.

The inaccuracy of estimating weight in utero precluded other specific recommendations.

Intrapartum Care

Most comments were not specific to the size of the baby. Fetal surveillance problems were the commonest, with CTG interpretation as the most frequent criticism. Delay in delivery and inappropriate choices for the mode of delivery was the second commonest criticism. Unwise attempts at vaginal delivery may reflect the inexperience of the staff at the time of delivery.

Thus with a clinically suspected large baby:

- the delivery team should be alert for delay in late labour. This includes careful documentation with the use of a partogram to monitor the progress of labour.
- the delivery team should be alert for the possibility of shoulder dystocia.
- experienced staff should decide on and undertake or directly supervise any instrumental delivery

All delivery suites should have:

- clear protocols for the management of shoulder dystocia (5th Annual Report)
- a high level of awareness and training of all birth attendants in the management of shoulder dystocia
- 'Fire drills' for the training of staff in the management of shoulder dystocia.

Care of the newborn

The most frequent adverse comment on paediatric care was delay in resuscitation for babies of 4kg and over. Delays in the arrival of the paediatrician, difficulties in intubation, failure to identify pneumothorax and lack of basic skills were highlighted.

All delivery suites should ensure that:

- there are clear protocols for calling a paediatrician
- the attending paediatrician has adequate experience in resuscitation skills

Paediatricians on call for the labour ward must:

- attend promptly when called urgently
- be aware of the possible consequences of difficult deliveries including potential co-existing cerebral trauma
- having excluded other causes of failure to respond to resuscitation, be alert to the possibility of pneumothorax

Postnatal care

The significance of heart murmurs in the neonate is highlighted:

- echocardiography may be indicated in the presence of a heart murmur in the neonate

Perinatal Pathology

Asking recently bereaved parents for permission for a postmortem examination is not easy and guidance on this issue is given in a new leaflet entitled 'The Fetal and Infant Postmortem, Brief Notes for the Professional'. It covers legal requirements and consent to the procedure as well as the procedure itself.

The perinatal postmortem can make an important contribution to our understanding of some deaths when it is of a high standard. Guidelines for the reporting of postmortems were presented in the first CESDI report and subsequently by the Royal College of Pathologists. An audit of reports of postmortems on intrapartum related deaths between 1994 and 1995 demonstrated marked variability in standards. It concluded that there is still a considerable need to improve observational, diagnostic, and interpretive skills:

- Failure to take samples for histology frequently (50%) contributed to the poor standards of reports
- An 'adequate commentary' was available for only 35%

Record Keeping

Record keeping is a vital part of the care and communication process.

- Poor record keeping, as judged by the Enquiry panels occurred in a third of cases reviewed in the '1 in 10' enquiries.
- The major problem was a failure to document events adequately. This has major medico-legal consequences and highlights an area of care and communication that could be improved at minimal cost.

Developments in the enquiry programme

Recording and collating 'opinion' on a national basis is a complex task. The limitations of enquiries on deaths only and the lack of comparative data is discussed.

As a response, the current enquiry programme Project

27/28 has introduced :

- collection of denominator data
- enquiries on survivors
- pre-delivery assessors blinded to the outcome
- a structured enquiry form
- a 'standards' document at the enquiry

Project 27/28

Prematurity is the major cause of neonatal deaths, especially in the very low birthweight group of less than 1.5kg which accounts for 1-2% of births and approximately half of neonatal deaths. This group is also a major contributor to long term neurological disability. Despite growing professional and public interest in the care given to babies born before 32 weeks' gestation, little is known about their epidemiology. This is because gestational age at birth is not routinely collected on all live births in the United Kingdom. Our national data on livebirths is derived from registration information; there is no appropriate denominator data for gestation.

CESDI is currently identifying all babies born in the 27 to 28 weeks gestational range in England, Wales and Northern Ireland. This group of babies will provide denominator data for survival figures.

Aims and objectives of Project 27/28

- 1 To identify all babies born alive in England, Wales and Northern Ireland between 27 and 28 weeks gestation and to identify whether they survived or not.
- 2 To provide a cohort of all livebirths between 27 and 28 weeks, from which the survivors for enquiries will be randomly selected.
- 3 To undertake a confidential enquiry on all early neonatal deaths and an equivalent number of the survivors in this gestational range.
- 4 To address the association of care given in pregnancy and up to the first seven days of life with the survival of babies in the key gestational range 27 to 28 weeks.
- 5 To provide a national and regional audit of a series of obstetric and perinatal standards.

The protocol for Project 27/28 is described in detail in the Report.

Changing practice

The messages of CESDI are wide ranging and are applicable to the entire spectrum of health workers. Dissemination of these messages is therefore of paramount importance. In 1998 a study was commissioned from the Office for Public Management on the dissemination of CESDI findings to professionals. It concluded that:

- Awareness of CESDI was very high amongst midwifery professionals, and senior clinicians and managers, but was much lower for front line staff, especially for paediatric and neonatal staff.
- The findings have greater impact when there is personal contact with CESDI staff or activities.

The responses of the Royal Colleges and other statutory bodies responsible for training and accreditation to the 4th and 5th Annual Reports are reported and continue to be encouraging.

The future

CESDI is now under the umbrella of the National Institute for Clinical Excellence (NICE), thereby re-emphasising its role in improving standards of care. Good quality information is essential to decision making. But there are large and very basic gaps in national statistics relating to maternity and infant care. The Regional structure of CESDI is well placed to gather such clinical information which is fundamental in the setting and implementation of national clinical guidelines, as part of clinical governance.

ACKNOWLEDGEMENTS

Particular thanks are due to the considerable contribution of the district co-ordinators and the many others based throughout England, Wales and Northern Ireland, who, often without recognition and in their own time, undertake work for CESDI.

A full copy of the 6th Annual Report can be obtained from:

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**Tel: 0207 486 1191
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