Health and Wellbeing Board

26 July 2017

Thematic Review of County Durham and Darlington Child Death Overview Panel

Report of Dr Mike Lavender, Consultant in Public Health Medicine, Chair of Child Death Overview Panel

Purpose of the Report

1. To inform the Health and Wellbeing Board with an analysis of emerging themes identified by the Child Death Overview Panel (CDOP) following a review of all child deaths in County Durham and Darlington where there were modifiable factors that could have contributed to the child's death.

Background

2. The Child Death Overview Panel (CDOP) is a sub-committee of the County Durham and Darlington Local Safeguarding Children Boards (LSCBs) and is responsible for reviewing all deaths of children who reside in County Durham or Darlington.

3. The information received from all agencies involved in the child's care is reviewed by the panel. The panel considers whether there were any modifiable factors that could have contributed to the death. A summary of the facts relating to each death is recorded on a Form C. This includes the cause of death and any learning points. The panel is required to submit an LSCB1 annual data return to the Department for Education on behalf of the LSCBs.

4. The role of CDOP is to determine whether a child death was deemed preventable through modifiable factors which may have contributed to the death and to decide what, if any, actions could be taken to prevent future such deaths. The response by partner agencies to recommendations related to individual cases is monitored by CDOP. The main learning points and examples of good practice are summarised in the CDOP Annual Reports.

5. The Rapid Response Nurses who are linked to CDOP process support parents and provide them with feedback from the review if they so wish.

6. A function of CDOP also includes 'identifying patterns or trends in local data and reporting these to the LSCB'. To identify any recurrent themes, the Chair of the CDOP working with the Designated Paediatrician for Child Deaths conducted a thematic review of child deaths between April 2014 and May 2016.

Process

7. All child deaths where there were modifiable factors discussed by CDOP between April 2014 to May 2016 were included in the review. For these cases, the summary Form Cs and all additional information considered by CDOP were included in the review. These case notes from each death were reviewed by the Chair of the CDOP and the Designated Paediatrician for Child Deaths to identify any common themes. For each case, the cause of death, the key issues and learning points were highlighted.

Results

8. Of the 114 cases seen by CDOP between April 2014 and May 2016, 33 were noted as having modifiable factors. Table 1 shows the number of cases with modifiable factors by category of the cause of death.

Table 1 Number of cases by category of the cause of death

Category of cause of death	Number of cases
Unexpected neonatal death at term	6
Premature birth	5
Sudden Unexpected Death in Infancy	7
Trauma and accidents	7
Unexpected death from medical conditions	7
Suicide	1
Total	33

Unexpected neonatal death at term

9. Table 2 outlines the issues and learning points identified in each of the six cases whose cause of death was classified as an unexpected neonatal death at term (normal gestational period). There were six different specific causes of death identified (including one 'unascertained'), with some common issues and common learning points

Table 2 Unexpected neonatal deaths at term

Cause of death	Issues	Learning points
Cerebral bleed after prolonged second stage of labour	CTG interpretation Delay in initiating the escalation policy	Review the policy of foetal blood sampling in second stage of labour. Escalation policy to be initiated at the earliest opportunity. Closer monitoring of length in 2nd stage of labour.

Multi-organ failure due to E. Coli sepsis due to colonic perforation	CTG interpretation Delay in initiating the escalation policy	Consultant must be informed of babies admitted to Special Care Baby Unit (SCBU) who require respiratory support. Handover of information for women in labour so that the urgency of a situation is clearly communicated.
Unascertained	CTG interpretation	Simulation exercises for the resuscitation of babies. CTG interpretation training.
Meconium aspiration syndrome secondary to asphyxia	CTG interpretation Escalation policy	Review guidance for intermittent monitoring of foetal heart during low-risk labour. Training to ensure correct equipment used for foetal heart monitoring. Ante-natal CTG recordings should be verified by an experienced person (Band 7 midwife or an obstetric middle-grade doctor) prior to a woman being discharged. CTG training
1. Neonatal Encephalopathy and Intraventricular Haemorrhage 2. Poorly Controlled Gestational Diabetes	Service issues (implementing NICE clinical guidelines)	Local guidelines revised to comply with the recommendations in NICE clinical guidance on the management of diabetes in pregnancy.
Intra-uterine pneumonia from aspiration of amniotic fluid, due to utero-placental insufficiency	CTG interpretation Delay in initiating the escalation policy	Visibility of equipment in main theatre needs to be improved. CTG training. Ultrasound growth charts to be reviewed and standardised in line with regional and national guidance

10. There are two recurrent themes from these cases; CTG interpretation and the escalation policy.

1) Interpretation of the CTG monitoring the foetal heart rate during labour.

Cardiotocograph monitoring (CTG) is a device for recording the foetal heartbeat and the uterine contractions during labour as one way of assessing the baby for any signs of distress. It is well recognised that the interpretation of CTG readings can be difficult in many circumstances. However, it is such an important indicator of the welfare of a baby during

labour that all delivery suites have a policy to ensure that CTG reading is consistently carried out to a high standard and all members of staff have access to regular training and supervision. The incorrect interpretation of the CTG was identified as a factor in five out of the six cases raising questions about the level of training and experience of the staff involved.

2) Escalation policy

The escalation policy refers to circumstances when the junior doctor on-call for the maternity unit requests the advice from a senior doctor when a delivery is not progressing as expected. There are two obstetrician led maternity units in County Durham and Darlington Foundation Trust. One is in the University Hospital of North Durham and the other in Darlington Memorial Hospital. The consultant cover for the two units is not significantly different from most other maternity units of a similar size. It is normal for junior and staff grade doctors to provide the medical cover at night and at weekends. During these periods all such units have policies for a consultant to be called in from home to assist with a difficult labour and delivery.

11. CTG interpretation and the escalation policy were identified as themes in the CDOP Thematic Review 2008 to 2014. Both factors have also been highlighted by two external reviews of maternity service in County Durham and Darlington, one in 2009 and the other in 2016.

12. Since the CDOP process started in 2008, national, regional and local guidelines have included the recommendation for all obstetric led maternity units to work towards having a consultant present for 168 hours per week (24/7). If these standards had been met when these deaths occurred then the recommendation for an escalation policy would have been unnecessary.

Premature birth

13. Table 3 outlines the issues and learning points identified in each of the five cases whose cause of death was classified as a premature birth. Although there were four different specific causes of death identified, there were some common issues and common learning points that were relevant to the majority of cases. These were in relation to communication between professionals and access to experienced senior staff through the implementation of the escalation policy.

Table 3 Premature births

Cause of death	Issues	Learning points
Premature rupture of membranes Intra-uterine infection	Difficulty with communication between two maternity services, both working at high activity level	Improved communication between units when a Neonatal Intensive Care cot is required. Improved communication between units on the transfer of critically ill babies

Extreme prematurity	Delay in ambulance transfer to tertiary unit due to pressures on the ambulance service. Communication between the Obstetrician and Consultant Paediatrician. Neonatal resuscitation techniques.	Consultant to Consultant communication for pre-term deliveries.
Severe respiratory distress syndrome due to extreme prematurity	Staffing on a bank holiday Delay in contacting Consultant Paediatrician Only one Consultant Paediatrician available for birth of twins Communication difficulties between the tertiary units and maternity units prior to the arrival of the neonatal transport teams Equipment problems Technical difficulties in regard to intubation/airway management of the babies.	Communication between units. Staff planning and rotas. Equipment audit. Review of resuscitation for extremely pre-term babies Review process for Consultant Paediatricians sustaining the skill set required for effective resuscitation and management of premature babies.
Severe respiratory distress syndrome due to extreme prematurity	As above (twin)	As above (twin)
Extreme prematurity	Communication with Consultant Paediatrician at the time of delivery. Staff did not follow the formal process for confirmation of death. Staff did not follow the protocol for delivery and management of extreme pre-term birth. Staff did not follow nationally recognised practice for the management of extremely pre-term birth.	Review the policy and training regarding the management of pre- term maternal admissions. Consistent resuscitation procedures between ante natal and labour wards.

Sudden Unexpected Death in Infancy

14. Table 4 outlines the issues and learning points identified in the seven cases whose cause of death was classified as a sudden unexpected death in infancy (SUDI). There were four different specific causes of death identified and in three cases the cause of death was recorded as ‘unascertained’. Common issues were co-sleeping of a caregiver with the child and smoking

within the household. In one case a learning point around escalation of cases by junior doctors to more experienced consultants was identified.

Table 4 Sudden unexpected death in infancy

Cause of death	Issues	Learning points
SUDI	Co-sleeping	Advice to parents on causes of SUDI.
Unascertained	Co-sleeping Smoking in the home	Advice to parents on causes of SUDI.
Unascertained	Co-sleeping Drug misuse in home No senior paediatrician involved during three hospital admissions in one week. Discharged from hospital inappropriately.	Review of communication policy between drug treatment services, community midwives and health visitors. Review of hospital discharge policy
SUDI	Parental smoking	Advice to parents on causes of SUDI.
SUDI	Parental smoking Co-sleeping	Advice to parents on causes of SUDI.
Unascertained	Co-sleeping	Advice to parents on causes of SUDI.
Accidental suffocation	Co-sleeping Smoking in household	Advice to parents on causes of SUDI.

Trauma and accidents

15. Table 5 outlines the issues and learning points identified in the seven cases whose cause of death was classified as trauma or accident. In most cases the associated learning points were specific to the particular cause of death. Some cases shared a common factor of communication between professionals and agencies.

Table 5 Deaths associated with trauma and accidents

Cause of death	Issues	Learning points
Strangulation	Homicide Mental health of mother	No mental health assessment carried out. Communication between professionals and agencies.
Head injury	Abuse (domestic violence)	Key learning points identified and followed up as part of the Serious Case Review. Communication between professionals and agencies a major factor.

Abusive Head Trauma	Shaken baby	Information sharing and communication between hospital and police
Severe head injuries and chest injuries following a road traffic accident	Motorbike modification	There is no legal requirement for anyone selling a motorbike to declare they have made modifications that would affect its performance. This was a matter of concern to the investigating Police Officers.
Multiple injuries as a result of a crushing accident	Health and safety	The HSE investigation recommended a full risk assessment around the use of similar machinery.
Accidental drowning	Inadequate signage	Improved signage
Unascertained	Drug and alcohol misuse in parents	Training needs identified – knowledge gap in understanding of Hidden Harm and the impact of substance misusing parents on children.

Unexpected death from medical conditions

16. There were seven cases of unexpected deaths from medical conditions (Table 6). Common themes identified within the learning points included problems with communication (between bodies, senior and junior staff and wider colleagues) and escalation policies.

Table 6 Unexpected deaths from medical conditions

Cause of death	**Issues**	**Learning points**
Raised intracranial pressure due to blockage of the shunt for treating hydrocephalus	Service issues – blocked shunt	Complex cases requiring treatment planning between different hospitals should be discussed at Consultant to Consultant level to minimise risk of miscommunication.
Pulmonary embolus following severe sepsis. Congenital neuro-disability.	Service issue – care planning	Consultant involvement in managing complex cases. Communications between local and tertiary services.
Hashimoto encephalopathy	No emergency care plan or family held record on discharge. Escalation policy not implemented.	Emergency care plan for children with complex health needs. Consultant involvement in managing complex cases.
Acute pulmonary embolism	Service issue - eight month wait for surgery.	Review of priorities for surgery.

Asthma	Service issue – Asthma guidelines not followed. Ambulance delays	Review of procedures to monitor asthma treatment compliance in primary care. Improved awareness and guidance in schools to manage children with asthma.
Congenital adrenal hyperplasia	Service issue - management of children with failure to thrive	Review the clinical policy on the management of babies failing to gain weight.
Unascertained. Likely to be due to sickle cell disease	Service issue – inappropriate early discharge.	Review communication between Consultants and nurses. Review the management of sickle cell disease and the need for specialist advice.

Suicide

17. There was one death by suicide in this review. The learning points and issues are detailed in Table 7.

Table 7 Death by suicide

Cause of death	Issues	Learning points
Suicide	Mental health services – coordination and transfer of care between military psychiatrist and primary care.	Provide the military psychiatric services with information about regional CAMHS services.

Conclusions

18. This report needs to be considered within the context of a broader consensus within the NHS to improve standards within maternity services[1]. There is no evidence from routinely available information or from the CDOP thematic reviews to suggest that the services provided by the NHS locally are any different to other hospitals of a similar size[2].

19. The low number of child deaths with modifiable factors each year in the population covered by County Durham and Darlington local authorities means that it is unlikely that a theme will emerge from within one year and included in the CDOP annual report. Only by looking at child deaths over a longer period and focusing on the deaths with modifiable factors can emerging themes be identified.

[1] Better Births: Improving outcomes of maternity services in England.

https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf

[2] MBRACE-UK Perinatal Mortality Surveillance Report May 2016.
https://www.npeu.ox.ac.uk/downloads/files/mbrrace-uk/reports/MBRRACE-UK-PMS-Report-2014.pdf

20. This is the second thematic review by the County Durham and Darlington CDOP since it was established in 2008. For information the tables from the 2014 report are included in the Appendix. Table 8 summarises the recurrent themes identified in both reviews.

Table 8 Recurrent themes from the reviews in 2014 and 2016

Age group	Theme
Perinatal and infant deaths	CTG training
	Escalation policies
	Resuscitation of neonates
	Communication between professionals and units on the transfer of neonatal care
	Awareness of risk factors to prevent SUDI
Child deaths	Mandatory training in paediatric resuscitation
	Emergency care plans for children with complex health problems

21. From both reviews, a particular concern is the number of unexpected deaths of babies at a normal gestational age with common modifiable factors around their care during labour. For the 2016 review, a subgroup of CDOP met to consider a number of these cases in more depth. The purpose of the meeting was to consider the learning points and actions recommended for each case. This took into account the findings and recommendations of the external review of obstetric and paediatric services commissioned by County Durham and Darlington Foundation Trust.

22. The conclusion from the CDOP subgroup meeting was that it was not necessary to make any further recommendations and the panel was assured that the action plan agreed by the CCGs and CDDFT would address most of the learning points highlighted by the CDOP Thematic Review. However, the subgroup concluded that the recommendations and action plans would not fully address all of the learning points. These related to service issues beyond the scope of local hospitals to change without the collaboration of neighbouring hospitals and regional services. An example of this is improvements in the care pathway for seriously ill babies between local services and regional neonatal intensive care units for the transfer of care. To address these concerns the LSCB could look to other groups such as the Health and Wellbeing Boards and Overview and Scrutiny Committees to look into this further.

23. The CDOP subgroup questioned whether the actions to address concerns regarding CTG interpretation and the escalation policy went far enough given the recurrence of these issues over several years. The subgroup discussed these issues taking into account the way in which obstetric and paediatric services are currently provided. The recurrent themes of CTG interpretation and escalation policies are the direct consequence of the current service

model. For example a more rapid progress toward a 7 day consultant delivered obstetric and acute paediatric service is beyond the remit of CDOP would make an escalation policy redundant and improve training and supervision of CTG interpretation.

24. To address these broader concerns the CDOP has taken into account of the findings in the *Wood Report: Review of the role and functions of Local Safeguarding Children Boards*[3] in relation to the future of CDOPs.

Recommendations

25. The Health and Wellbeing Board is recommended to:

(a) Note the findings of the CDOP Thematic Review.

(b) Take into account the learning points identified by the thematic reviews when considering plans for maternity and paediatric services.

Contact: Dr Mike Lavender, Consultant in Public Health
Tel: 03000 267681

[3] Wood Report: Review of the role and functions of Local Safeguarding Children Boards. March 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526329/Alan_Wood_review.pdf

Appendix 1: Implications

Finance – None

Staffing – None

Risk – None

Equality and Diversity / Public Sector Equality Duty – None

Accommodation – N/A

Crime and Disorder – N/A

Human Rights – N/A

Consultation – N/A

Procurement - None

Disability Issues - None

Legal Implications – None

Appendix 2: Tables from the CDOP Thematic Review 2008 to 2014

Table 1 Numbers of cases in each category of death, as classified as part of the thematic review

Category of cause of death	Number of cases
Unexpected neonatal death at term	4
Premature birth	4
Sudden Unexpected Death in Infancy	7
Trauma and accidents	8
Unexpected death from medical conditions	11
Suicide	2
Total	36

Table 2 Unexpected neonatal deaths at term

Cause of death	Issues	Learning points
Sepsis following traumatic forceps delivery	CTG interpretation. Delay seeking medical assessment. Not seen by consultant on SCBU.	CTG interpretation training. Escalation policy. Consultant delivered care in SCBU and obstetric unit.
Intra-partum trauma	CTG interpretation. Delay in escalating to senior staff. Prolonged second stage of labour.	CTG interpretation training. Escalation policy. Consultant delivered obstetric service.
Intra-partum asphyxia	CTG interpretation. Delay in escalating to senior staff. Prolonged second stage of labour.	CTG interpretation training. Escalation policy. Consultant delivered obstetric service.
Intra-partum asphyxia	CTG interpretation. Difficulty attaching scalp electrode. Emergency CS.	CTG interpretation training. Escalation policy. Consultant delivered obstetric service. Staffing levels on labour ward.

Table 3 Premature births

Cause of death	Issues	Learning points
Premature birth	Expected death	Antibiotic treatment in neonatal care
Premature birth	Transfer between hospitals. Poor communication.	Provision of PICU beds.
Premature birth	Specialist neonatal care pathway not followed.	Quality standards in PICU service.
Premature birth	Pre-term labour attending an urgent care centre.	Provision of maternity services in County Durham and Darlington.

Table 4 Sudden Unexpected deaths in infancy

Cause of death	Issues	Learning points
SIDS	Bed sharing. Mother on medication.	Psychiatrists- awareness of bed-sharing while on medication
SIDS	Died in care of relative - smoker, alcohol, medication.	FSID - include information on child care by others.
SIDS	Pre-term. Co-sleeping.	Reinforced guidance on co-sleeping.
SIDS	Co-sleeping. Alcohol. Smoking.	Concerns over the way parents were treated. Changes to SUDIC procedures.
SIDS	Drug misuse	Communication between agencies. Information sharing and confidentiality agreements.
SIDS	Pre-term. Over-wrapping.	Skeletal survey post-mortem.
Viral infection	Domestic violence. Previous SIDS. Sleeping in a buggy.	Provision of paediatric ophthalmology for post-mortem examination.

Table 5 Trauma or accidents

Cause of death	Issues	Learning points
RTA	Crossing a busy road	Improved lighting, barriers and signs
Accidental death	Crushed by patio door	HSE and Trading Standards informed
Murdered	Mother had mental illness	Serious case review
Murdered	Bruising in an immobile child. No action taken.	Serious case review
Murdered	Bruising in an immobile child. No action taken.	Serious case review
RTA	Inexperienced rider. Modified motor bike	Police - query the need to change the law
Accidental death	Crushed by concrete bollard	HSE investigation
Drowning	Swimming in river	DCC - request for signs, lifebelt. Awaiting reply.

Table 6 Unexpected deaths caused by medical conditions

Cause of death	Issues	Learning points
Asthma	Delay in seeking medical help	Care shared between divorced parents. Awareness of this at asthma reviews.
Asthma	BTS guidelines not followed in primary care. In appropriate discharge. Not seen by consultant.	Management of asthma in primary care. Paediatric assessment for every admission.
Septicaemia	Delay instigating intensive care	Mandatory training and joint exercises in paediatric resuscitation.
Diabetic KA	Delay in seeking medical help.	Education for parents with children with diabetes. Emergency care plan for children with complex health needs.
E. Coli and HUS	Early discharge with inadequate discharge arrangements.	Management guidelines for HUS. PICU checklist. Mandatory training and joint exercise in paediatric resuscitation.
Encephalopathy	Rare condition with treatable complications. No consultant assessment on admission. No follow up. No escalation from nurse led unit after discharge.	Consultant paediatrician assessment in all complex cases. Emergency care plan for children with complex health needs.
Epilepsy	Delay in seeking medical help	Discussion with parents on SUDEP. Emergency care plan for children with complex health needs.
Hirschprung's disease	NICE guidance for rectal biopsy. Compliance with treatment.	Coroner Section 28 letter to NICE
Hirschprung's disease	Conservative treatment by RVI. Lost to follow up. Growth failure. No review in primary care for 2 years.	Paediatric discharge policy. Community paediatric and school nursing policy on growth monitoring. Emergency care plan for children with complex health needs.
Hydrocephalus	Shunt revision RVI. Immediate discharge to North Tees.	Monitor in Newcastle for at least 24hrs. Consultant to consultant transfer protocol. Assessment of shunt procedures.
PE due to septicaemia	Severe pneumonia not recognised in nurse-led unit	Consultant paediatrician assessment in all complex cases. Emergency care plan for children with complex health needs.

Table 7 Suicide

Cause of death	Issues	Learning points
Suicide	Discharged by the army. Lack of collaboration between army and NHS psychiatry service.	Direct referral by Army to CAMHS - no response so far. Guidance to GPs for parents to contact CAMHS. Improved communication between agencies
Suicide	Self-discharge from CAMHS. Follow up letter not sent.	CAMHS to ensure follow up letter included in discharge arrangements. Improved communication between agencies