Sudden Unexpected Death in Infancy- The clinical experience

15th May 2013

Dr Kirsty Haslam

OBJECTIVES

- Overview of rapid response & SUDIC process
- Child death overview panel (CDOP)
- Local data from Bradford & Airedale
  - Last 6 months deaths
  - Last 5 years CDOP data

•LANDMARK DOCUMENTS

- Laming report (2003)
- Every Child Matters (2004)
- Kennedy report (2004)
- Working together to safeguard children (2006) (2009) (2012)
- CEMACH Why children die (2008)
- Preventing childhood deaths (2008)

Process to be followed when a child dies

All deaths

Death of a child

Suspicious?

Info collected on child

Unexpected?

Interagency CP/Criminal Ix

Interagency rapid response

Final case discussion

Coroners inquest

CDOP

Serious case review

Unexpected child death

Death of a child that was not anticipated as a significant possibility 24 hours before the death, or where there was a similarly unexpected collapse leading to or precipitating the events that led to the death (DFES).

- Not including expected death from known medical causes, or unexpected death where a clear medical cause was apparent eg RTA

The rapid response to an unexpected death

Immediate response

Early response

Later response

Identifying contributory factors

Establishing cause of death (coroner)

Support for family

B&A Rapid response- Immediate

- First 2-3 hours after child dies
- Transfer to hospital
- A&E care
- Initial history and examination
- Immediate investigations
- Multi-agency liaison

Appendix 5- Specimen list: Blood

Sample	Test bottle	Request	Send to
Blood (1ml min; aim 2-5ml)	Blood culture	Culture & sensitivity	Microbiology
Blood spots	Guthrie card	Acylcarnitines	Biochemistry
Blood (1-2ml)	Lithium heparin (green top)	Karyotype (if dysmorphic)	Cytogenetics
Blood (1ml)	EDTA (pink top)	DNA storage	DNA lab
Blood (1 ml)	Serum (brown top)	LFTs, plasma amino acids	Biochemistry
Blood (5 ml)	Serum (brown top)	Toxicology	Biochemistry (refridgerate if weekend)

Appendix 5: Specimen list- Other

Urine (5-10ml)	Universal container	Urine metabolic screen	Biochemistry (refridgerate if weekend; do not freeze)
Urine (1-5ml)	Universal container	Culture & sensitivity	Microbiology (Ring lab to process acutely). After 22.00 refridgerate and ring lab next day to process acutely)
Urine (6-10ml)	Universal container	Toxicology	Biochemistry Freeze -20^{0}C
Nasopharyngeal aspirate	NPA 'trap' with sterile saline	Culture & sensitivity	Microbiology
Nasopharyngeal aspirate	NPA 'trap' with sterile saline	Viral culture, immunofluorescence, PCR etc	Virology (via Microbiology)
Swabs (from any identifiable lesions)	Standard charcoal swab	Culture & sensitivity	Microbiology
Xrays	-	Skeletal survey	Radiology

Additional samples to be considered

Skin biopsies for cytogenetics and fibroblast culture (will be done routinely at post mortem).

Muscle biopsy if history is suggestive of mitochondrial disorder (can be d/w pathologist to be taken as an extra sample at post mortem).

NB suture after taking specimen to ensure no bleeding

Specimen sampling

- Consent from coroner for tissue sampling
- Clear documentation of tissue sampling
- Chain of evidence
- Documented verbal consent from parents if medical sampling & PM

•Post mortem- Aim

- To find a medical explanation of cause of death
- Rule out other diseases/problems
- Identify conditions important for family to be aware of
- Provide knowledge that may help family or children in the future
- PM may not always find a cause of death

•Post mortem

- Initial PM report
- Final PM report can take several months
- Tissue retention:
  - Samples may be returned to family
  - Kept by hospital as part of child medical records
  - Used for use in research, future testing, teaching
  - Disposed of by the hospital

- Whole organs:
  - Family may wish to delay funeral until organs returned

Issues

- Fibroblast culture from skin biopsy
- Urine samples- nappy? Frozen?
- Notes to accompany body
- Medical/forensic pm
- Leeds/Sheffield/Other
- Organ donation

•Organ/tissue donation

- Organs
  - Need to die in hospital
  - Declared brain dead, preferably still ventilated
- Tissues- skin, bone, heart valves, corneas, tendons
  - Need to get to mortuary <6 hours post death
  - Retrieval <24 hours after death
  - Cornea can be retrieved <36 hours after death
- Minimum age of donation
  - Heart valves-any age
  - Cornea >3 years
  - Tendons > 17 years
- Co-ordinator
- Leaflets

B&A Rapid response- Early

- Within 24 hours
  - Consider joint home visit
- Within 48 hours
  - Report for pathologist and coroner (on call or SUDIC)
  - A&E Nursing staff complete child death checklist
- Post mortem
- Within 5-7 days
  - Multi-agency information discussion post interim post mortem report
- Ongoing family support

Joint home visit

- Ideally within 12 hours
  - Police
  - Experienced health professional
  - Member primary care team
- Holistic evaluation of circumstances of death
- Further detailed history & analysis
- Provide support to the family

Registration of death

Can be done as soon as medical certificate issued or when coroner issued 'Form B‘

If there is an inquest death is registered at the conclusion of inquest

Once death registered a death certificate can be issued

•Funeral

- •Funeral can only be held once
  - - death certificate issued or
  - - appropriate Form B from Coroner

B&A Rapid response-Later

- By 28 days
  - SUDIC report for coroner
- At about 6 weeks
  - Follow up of family (SUDIC or on call)
- When full post mortem report available or within 2-3 months
  - Final multi-agency case discussion and report
  - Discussion with coroner re: attendance at inquest
  - ?SUI- inform relevant clinical and risk Mx teams
  - Feedback to family
- Coroners inquest

Final multi-agency meeting

- 2-3 months after death
  - GP
  - HV
  - Midwife/school nurse
  - Hospital team
  - Lead paediatrician
  - Pathologist
  - Investigating police officer
  - Social care
  - Coroner

Final multi-agency meeting

- Share information
- Agree cause of death
- Plan future care for the family

- Lead paediatrician
  - Report for coroner
  - Feedback to family

•Coroners inquest

- •Unexpected deaths mostly where cause of death
  - Uncertain, or
  - Unnatural eg RTC
- •An inquiry to:
  - Confirm who has died, when and where
  - Establish cause of death in broad terms
- •Does not involve accusations or blame

•Coroners inquest

•Parents may be called as a witness and then have to attend
•If not called parents can choose if they wish to attend
•Parents can ask questions at the inquest and may be asked questions
•Other professionals may be present
•An inquest is open to the public and journalists may be present

•Further info : www.fsid.org.uk/childdeathreview

CHILD DEATH OVERVIEW PANEL

Collect & analyse info about each childs death to identify

-serious case review

-safety and welfare of children in area

-wider public health concerns

•CDOP

- Collect & analyse info about each childs death to identify
  - serious case review
  - safety and welfare of children in area
  - wider public health concerns
-

Immediate response- sources

- Intranet hospital clinical guidelines
- www.bradford-scb.org.uk/
- Child death overview panel related documents

•SUDIC Protocol

- General principles
- Child death key contacts
- Rapid response protocol
- Appdx 2- Paed Hx proforma children 0-1 y
- Appdx 3- Paed Hx proforma children 1-18 y
- Appdx 4- Body maps
- Appdx 5- List of specimens
- Appdx 6- Chain of evidence form
- Appdx 7,8- Checklist
- Form A- Notification of child death review team
- Form B- Agency report form

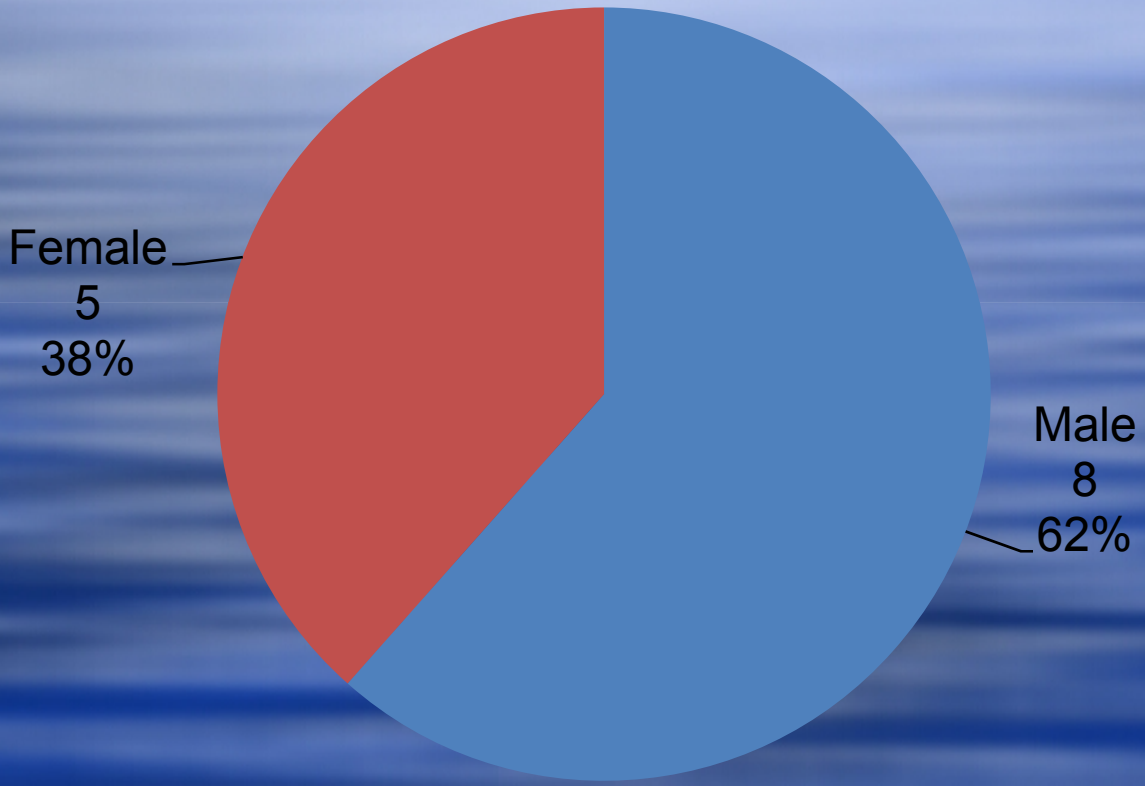
Category of Death

- 1. Deliberately inflicted injury, abuse or neglect
- 2. Suicide or deliberate self-inflicted harm
- 3. Trauma & other external factors
- 4. Malignancy
- 5. Acute medical or surgical condition
- 6. Chronic medical condition
- 7. Chromosomal, genetic and congenital anomalies
- 8. Perinatal/Neonatal event
- 9. Infection
- 10. Sudden unexpected, unexplained death, excludes SUDEP (cat 5)

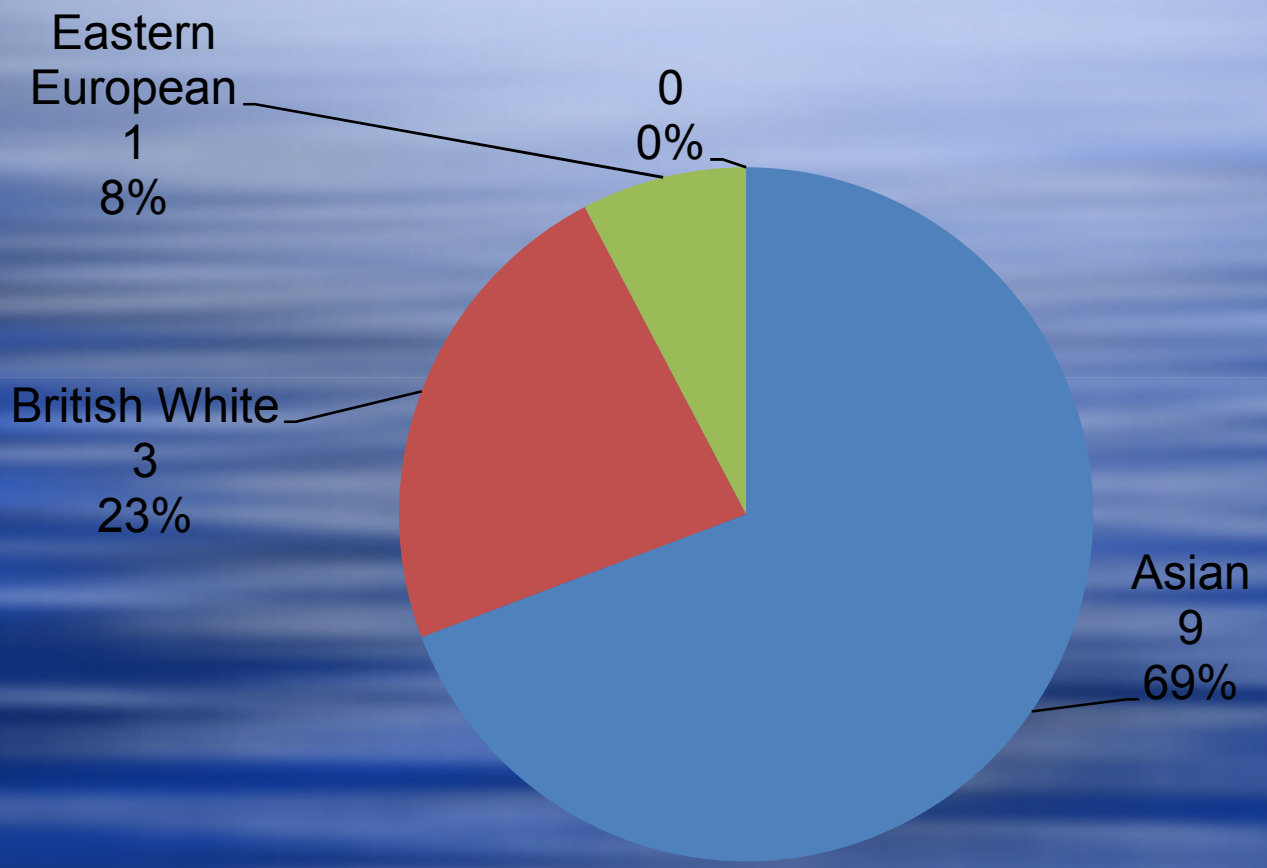
Deaths Sept 2012-Feb 2013

- 29 deaths
- 13 Neonatal
- 16 Paediatric

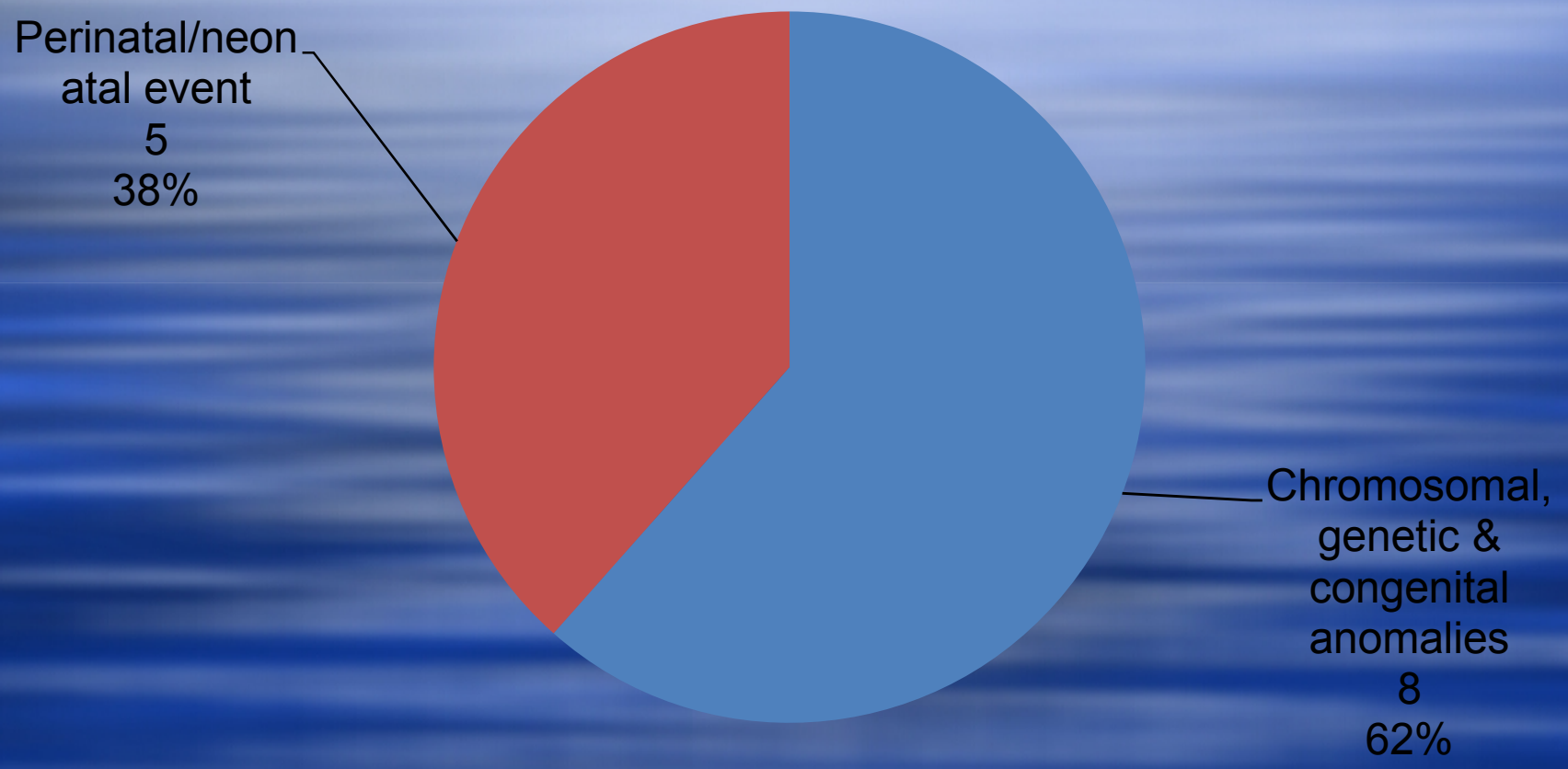
Neonatal deaths- Gender



Neonatal deaths- Ethnicity



Neonatal deaths- Category



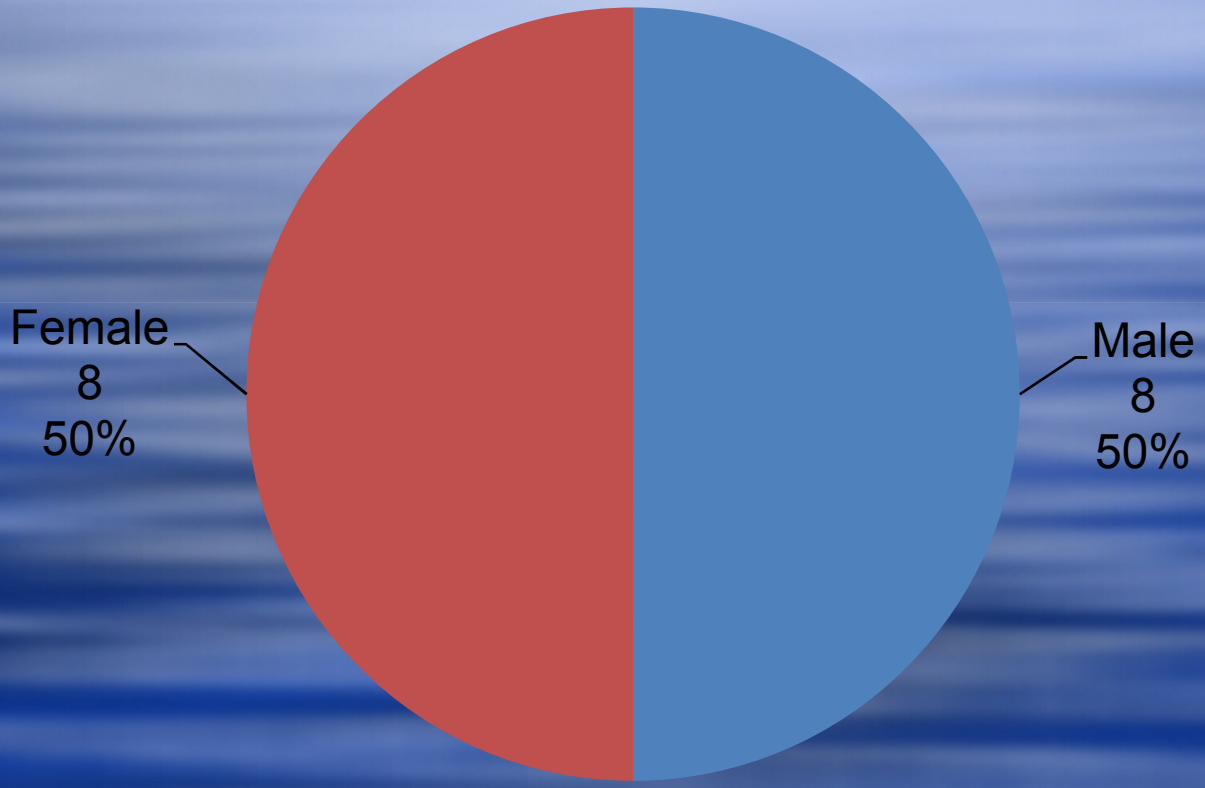
Category 7

- Multiple congenital anomalies x 2 neonates
- Hypoplastic left heart
- Transposition great arteries
- Meckel gruber
- Anencephaly
- Trisomy 18
- ?Metabolic + cardiac arrythmias

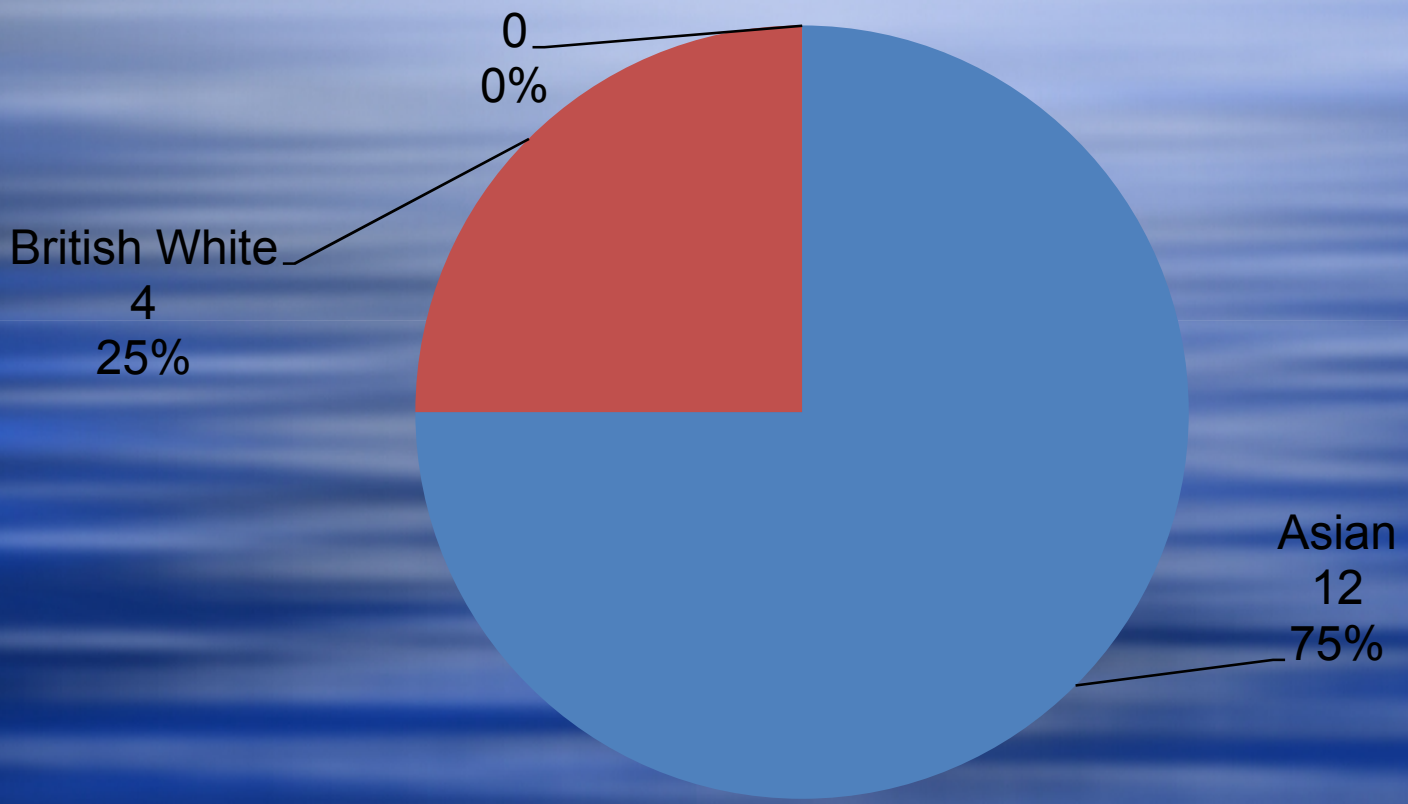
Category 8

- Extreme prematurity x 4 neonates
- HIE

Paediatric deaths- Gender



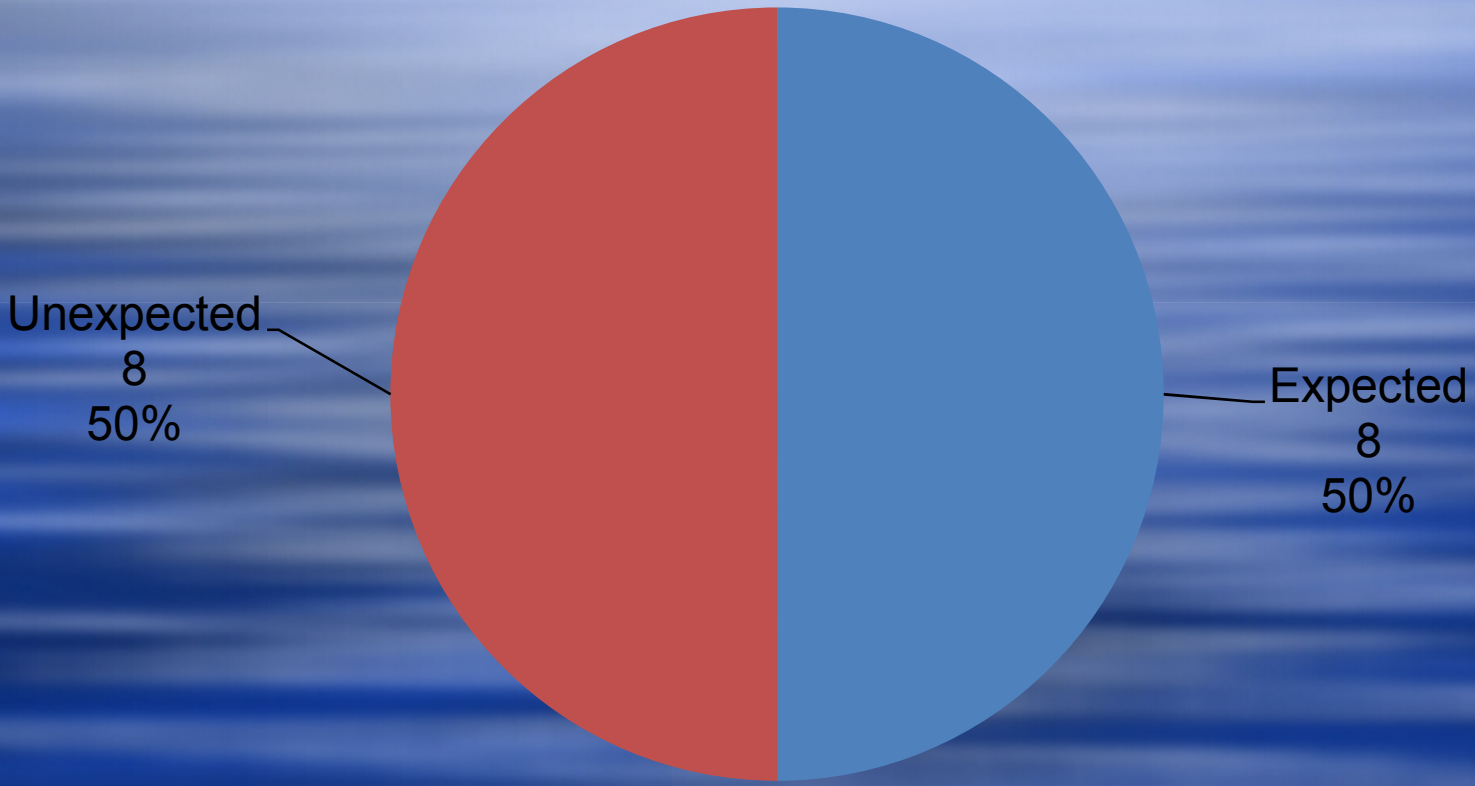
Paediatric deaths-Ethnicity



Paediatric deaths-Age

- 0-1 year 3
- 1-4 year 7
- 5-11 year 5
- 12-15 year 1
- 16-18 year 0

Paediatric deaths- Expectation



Expected deaths- Category

- 4. Malignancy 2
- 7. Chromosomal etc 5
- ? Insufficient detail 1

Unexpected deaths- category

•1. Deliberate injury	1
•3.Trauma	2 (RTA, Drowning)
•5.Acute medical/surgical	1 (asthma)
•9. Infection	?2 (chicken pox, Grp A strep)
•10. SIDS	1
•??	1 (AH)

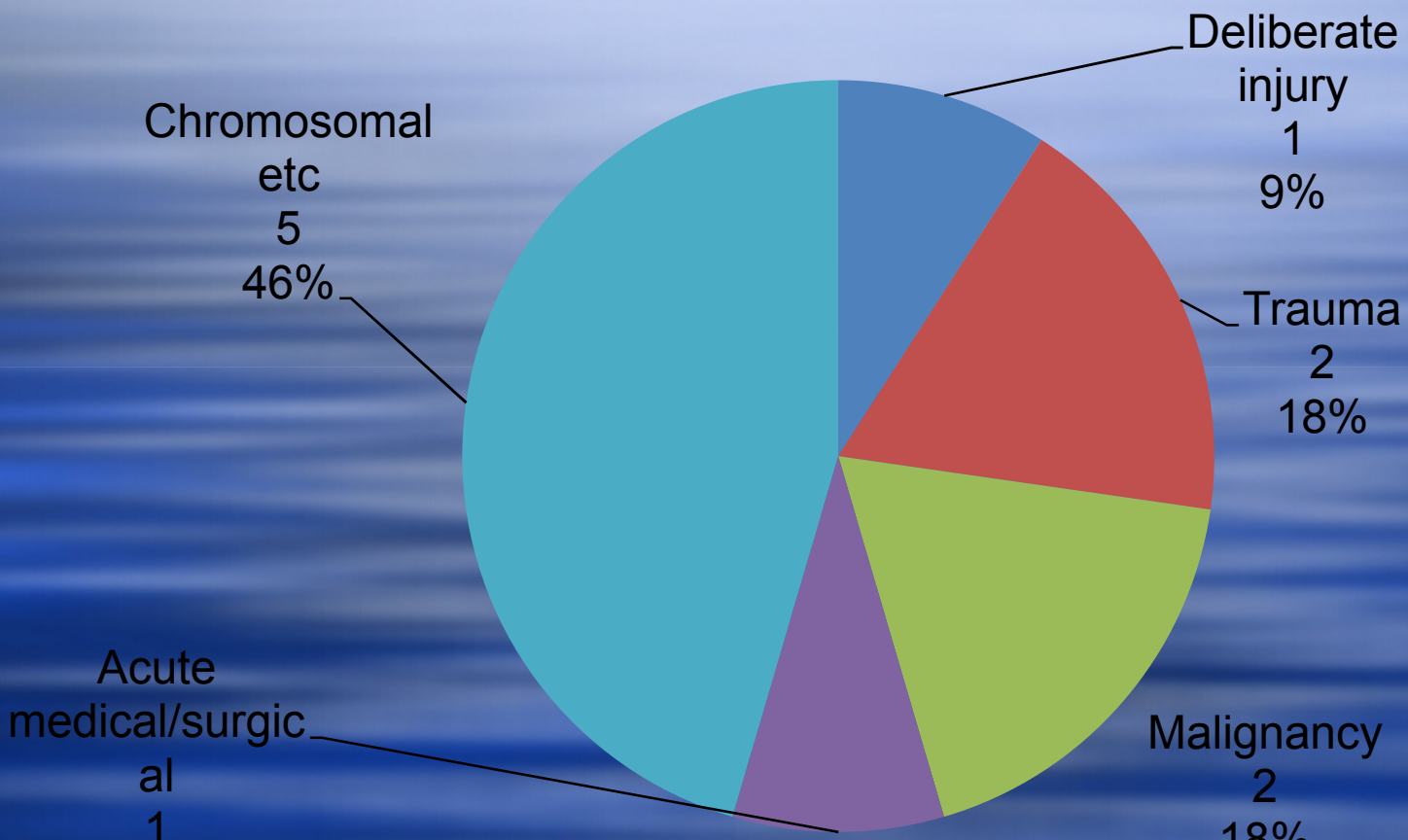
Unexpected deaths-Cause

- Medical reason apparent 3
  - Multi-organ failure, AVSD repaired, Trisomy 21
  - Severe bilateral pneumonia, chicken pox, devp delay, Epilepsy
  - Asthma

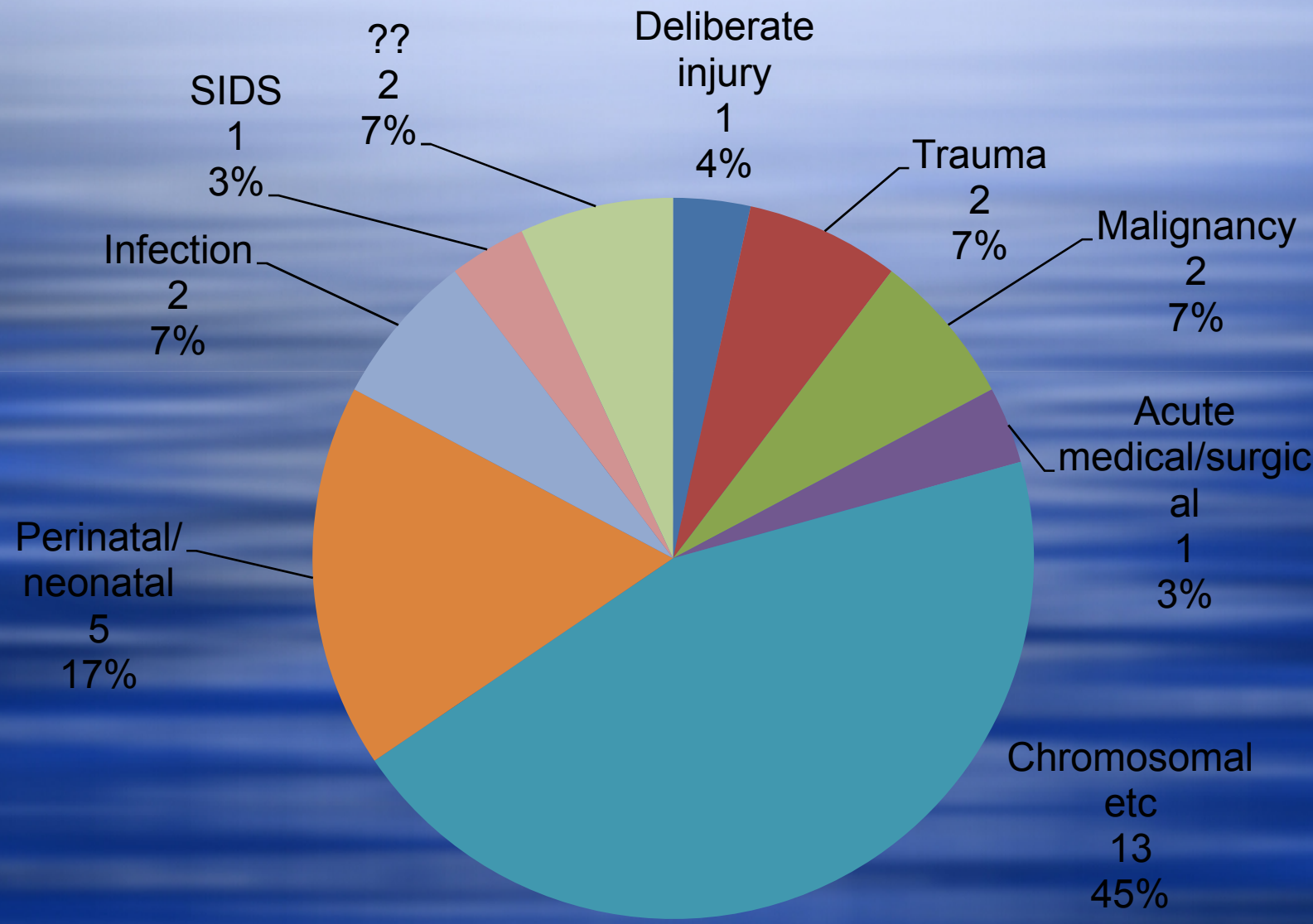
Unexpected death-Cause

- No initial clear medical cause
- All these cases had a Rapid Response
- First 3 cases had a home visit
  - SIDS
  - Drowning
  - Murder
  - RTA
  - Cardiac arrest - (Grp A strep)

All Paediatric Deaths- Category



All Deaths- Category



Child death reviews April 2008-April 2013

Child Death Review Panel

Child Death Notifications 2008 – 2012

Notifications and reviews April – March:

	2008 – ’09	2009 – ’10	2010 – ’11	2011-’12	2012-’13
No of deaths	85	107	108	71	64
No of reviews undertaken	85 (100%)	104 (97%)	102 (94%)	66 (93%)	31 (48%)
No of reviews outstanding	0	3	6	5	33

CDOP reviews 2008-2013

- In last 5 years 435 deaths
- Have reviewed 388 (89%)
- 71% < 1y old of which 62% were <28 days
- 55% male
- 62% Asian, 31% white, 7% other
- 40% category 7, 33% category 8

Category 7-
Congenital anomalies, genetic disease

- 40% category 7, 33% category 8
- Asian: 52% category 7, 48% other
- Not Asian: 24% category 7, 76% other
- Of South Asian population 59% consanguinous, 21% not, 20% unknown

Summary

- Rapid response process
- CDOP
- Data