

Agreement between Surrey Coroner and Surrey CDOP

Medical investigations

During attempted resuscitation, various investigations may be initiated including urea and electrolytes, full blood count, blood sugar, blood culture and gases, blood, and urine for metabolic studies.

After death:

- a) **In children under 2 years** - samples for medical investigations should be taken routinely as soon as possible. The recommended samples in Table 1 have been agreed by the Surrey Coroner. If there is definite external evidence of injury early samples should only be taken after discussion with the Coroner/ Coroner's officer, as this could interfere with the interpretation of injuries at post mortem. However, the only opportunity to identify or exclude some medical conditions is by taking samples at or shortly after death and this should not be missed.

Routine minimum samples to be taken immediately after Sudden Unexpected Deaths in children under 2 years - 2004 National Working Party Recommendations¹

Take blood from a venous / arterial site if possible eg femoral vein. Cardiac puncture can make PM findings difficult to interpret

Taken	Sample	Send to	Handling	Test	Results
	Blood (Fluoride) 1 ml	Clinical biochemistry	Spin, store plasma at -20 C	3 OH butyrate, sugar, FFA, Lactate	
	Blood cultures – aerobic and anaerobic 1 ml	Microbiology, locally	If insufficient blood, aerobic only	Culture and Sensitivity	
	Blood from syringe onto 2 Guthrie cards	Paediatric Clinical Biochemistry lab at St. Thomas' Hospital	In usual Guthrie envelopes– do not put into plastic bag.	Acyl carnitines and other Inborn errors of metabolism (IEM)	
	Blood 1ml lithium heparin	Paediatric Clinical Biochemistry lab	Spin, store plasma at -20 C	Amino acids and other tests for Inborn errors of metabolism (IEM)	
	Blood EDTA 1 ml	Genetics, St George's	Do not freeze	DNA extraction-ask lab to save	
	Blood (serum) 1– 2 ml (if sufficient)	Biochemistry, locally	Spin, store serum at -20° C	Save for Toxicology	
	Blood 1 – 2 ml Lithium heparin	Cytogenetics, St George's	Normal – keep unseparated	Chromosomes	
	CSF a few drops Consider cisternal tap	Microbiology locally	Normal	M.C.S.	
		Clinical biochemistry locally	Freeze and save	Inborn errors of metabolism (IEM)	
	Urine if available (obtain by squeezing nappy)	Biochemistry	Spin, store supernatant -20° C	Organic acids and other (IEM) Toxicology	

Taken	Sample	Send to	Handling	Test	Results
	Swabs from any identifiable lesions	Microbiology	Normal	Culture and sensitivity	
	Nasopharyngeal aspirate	Microbiology	Normal	Viral cultures, immunofluorescence, DNA amplification.	
	Nose and throat swabs	Microbiology	Normal	Culture and sensitivity	

Additional samples to be considered after discussion with consultant paediatrician

1. Skin biopsy for fibroblast culture
2. Muscle biopsy if history suggestive of mitochondrial disorder

Delays can compromise or invalidate cultures and metabolic tests

Virology samples must be sent to an appropriate laboratory

b) In children over the age of 2 years– The Paediatrician should consider which of the investigations listed above are indicated on the basis of the medical history and findings. If the Paediatrician feels that medical investigations are indicated, the Surrey Coroner has given permission for appropriate samples to be taken without prior consultation unless there is evidence of injury. If it is clear that the death is unnatural, then investigations should be discussed with the Coroner's Officer.

The following guidance about medical investigations following the death of an older child has been given by the Depts of Histopathology Great Ormond Street Childrens' Hospital and of Paediatric Metabolic Medicine Guy's Hospital 2009

1. Where there is any possibility of infection, the taking of samples shortly after death may improve the chances of growing the organism responsible. In these circumstances, blood cultures, throat and nose swabs should be taken routinely in A+E. CSF should be collected if the clinical information suggests that meningitis is a possibility.
2. Unless the death is clearly unnatural, full metabolic investigations, as described in the protocol above, are indicated.
3. Always consider sending blood for toxicology

If the post mortem is to take place within 24 hours of death, arrangements can be made by the paediatrician for samples to be taken by the pathologist.