STATE OF KANSAS
OFFICE OF THE ATTORNEY GENERAL

KRIS W. KOBACH
ATTORNEY GENERAL

MEMORIAL HALL
120 SW 10TH AVE., 2ND FLOOR
TOPEKA, KS 66612-1597
(785) 296-2215 • FAX (785) 296-6296
WWW.AG.KS.GOV

Kansas State Child Death Review Board

Child Autopsy Guidelines and Recommendations

The purpose of child fatality review is to identify effective prevention and intervention processes to decrease preventable child deaths through systematic evaluation of individual child deaths and the personal, family, and community conditions, policies, and behaviors that contribute to preventable deaths. Thorough and complete investigations and autopsies are essential for proper death certification and eventual review and analysis of the circumstances of infant, child and adolescent deaths. The Kansas State Child Death Review Board recommends the following protocols as a guideline for a comprehensive investigation and pediatric autopsy. The National Association of Medical Examiners (NAME) sets standards and provides educational opportunities and resources for investigations and autopsies as they relate to child deaths. Those standards should be referred to and followed for child death investigations: https://www.thename.org/

A coroner and/or medicolegal death investigator should investigate all:

- Known or suspected non-natural deaths, including those due to violence, trauma, drugs or associated with police action;
- Unexpected or unexplained deaths of infants and children, including those with underlying or chronic illness;
- Deaths occurring under unusual or suspicious circumstances;
- Deaths occurring in custody of a local, state, or federal institution;
- Deaths known or suspected to involve diseases constituting a threat to public health;
- Deaths of persons not under the care of a physician.

A board-certified forensic pathologist should perform the autopsy when the:

- Death is known or suspected to have been caused by violence, trauma, drugs or associated with police action;
- Death occurs in custody of a local, state, or federal institution;
- Death is unexpected and unexplained in an infant or child;
- Death is due to acute workplace injury;

- Death is caused by or involves apparent injury, including, but not limited to electrocution, fire, motor vehicle collision, chemical exposure, intoxication by alcohol, drugs, or poison, unwitnessed or suspected drowning or fall; Clinical judgment is recommended in cases of delayed deaths.
- Body is unidentified and the autopsy may aid in identification.

Investigation related to child and adolescent deaths

Investigation Records and Materials:
Ideally, all records listed below should be requested and reviewed. Information not available from records should be obtained through interviews. These records and materials include:

- Investigative law enforcement reports
- Department for Children and Family records
- Paramedic and Emergency Department records
- Previous medical records, especially those documenting prior injuries, imaging reports, laboratory examinations, previous illnesses, medical treatments, and developmental status
- Family medical history
- Family social history
- Scene investigation by law enforcement and the coroner/medicolegal death investigator, to include a Sudden Unexplained Infant Death Investigation (SUIDI) form if applicable. The SUIDI form can be found at: https://www.ag.ks.gov/docs/default-source/forms/sudden-unexplainedinfant-death-investigation-form.pdf?sfvrsn=58c30d67_8

Sudden unexpected infant death (SUID), also known as sudden unexpected death in infancy (SUDI), is a term used to describe any sudden and unexpected death, in a child less than one year of age in which the cause is not obvious before investigation. After case investigation, SUIDs can be attributed to suffocation, asphyxia, entrapment, infection, ingestions, metabolic diseases, and trauma (accidental or nonaccidental). SUIDs that occur during an observed or unobserved sleep period (sleep-related infant deaths), such as accidental suffocation, can be challenging to classify a cause of death, which cannot be determined by autopsy alone. Scene investigation and review of the clinical history are also required. Scene investigation should follow the guidelines established by the CDC.[3] The SCDRB is using the SUID Case Registry Decision-Making Algorithm and encourages investigators and forensic pathologists to use this tool in categorizing unexpected infant deaths. Information can be found at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4311566/.

Circumstances of particular cases may dictate that the above standards are not appropriate or relevant; for instance, a full autopsy may not be warranted in cases of children with prolonged hospitalization in which lab and imaging studies clearly document a cause and manner of death and in which there are no suspicious or potential criminal concerns.

Adolescent deaths often present a unique set of circumstances that warrant careful consideration of a more thorough investigation and autopsy. Autopsies should be performed in all sudden unexpected adolescent deaths, including those that are sports related, suicides and motor vehicle crashes. The

investigation should include the thorough review of medical, mental health, social media and school records.

Minimum expectations for autopsies on children ages birth to 18 years

In addition to a thorough investigation, the standards for an autopsy as it relates to an unexplained child death should include at a minimum the following, as appropriate for the age and circumstances of the child at death:

- Photographs of the child and of all external and pertinent internal injuries.
- Examination of all clothing and items accompanying the body, preserving all materials for later examination as determined by the forensic pathologist and the circumstances of death.
- Evidence of therapy and resuscitation.
- Radiographs for a complete survey of the skeletal structures, especially in children less than 2 years of age; films should be reviewed by a radiologist or physician experienced in child trauma whenever possible.
- Blood, urine and vitreous should be collected for possible use as an adjunct to toxicology or if metabolic or hydration status is an issue.
- An expanded drug panel is recommended for toxicological studies when the cause of death is not obvious from scene circumstances or autopsy findings.
- The external examination should give consideration to the general appearance of the child as well as document any signs of physical trauma or neglect (i.e. cleanliness, nutritional status/growth, injuries, etc).
- An autopsy should be performed on an unembalmed body and include in-situ examination of the brain, neck structures, thoraco-abdominal and pelvic organs with removal and dissection. Weights of organs should be documented. If there is no gross cause of death, microscopic examination should be conducted on the brain, heart, lungs, liver, kidneys and other organs as indicated. Stock tissue and paraffin blocks should be retained per NAME guidelines.
- DNA should be archived for genetic testing, if indicated.
- Samples for bacterial and viral cultures should be collected as clinically indicated.
- Vitreous humor should be used for electrolyte testing as clinically indicated.
- Metabolic screening results should be determined from the medical birth record. In cases where a metabolic condition is considered (e.g. preceding viral illness, period of starvation, nocturnal death, positive findings such as fatty liver), particularly in children under 2 years of age, further tissues should be preserved. A blood spot card should be prepared and retained in case autopsy findings suggest a metabolic disorder.

In situations where radiographic imaging is not available, local hospitals can be contacted for assistance.

References:

1. American Academy of Pediatrics *Policy Statement*, "Child Fatality Review" *Pediatrics*, September 2010; reaffirmed December 2019, AAP.

2. American Academy of Pediatrics *Clinical Report*, "Distinguishing Sudden Infant Death Syndrome from Child Abuse Fatalities," *Pediatrics*, July 2006; reaffirmed July 2017, AAP.

3. American Academy of Pediatrics Clinical Report, "Half Century Since SIDS: A Reappraisal of Terminology," *Pediatrics*, October 2021, 148 (4) e2021053746.

4. Centers for Disease Control and Prevention, "Sudden unexplained infant death investigation reporting form," (SUIDIRF), U.S. Department of Health and Human Services, Division of Reproductive Health, Maternal and Infant Health Branch, Atlanta, GA, 30333.

5. "Identifying Child Abuse Fatalities During Infancy," Vincent J. Palusci, Council on Child Abuse and Neglect, Amanda J. Kay, Erich Batra, Section on Child Death Review and Prevention, Rachel Y. Moon, Task Force on Sudden Infant Death Syndrome, National Association of Medical Examiners, Tracey S. Corey, Thomas Andrew and Michael Graham, *Pediatrics,* September 2019, 144 (3) e20192076; DOI: https://doi.org/10.1542/peds.2019-2076.

6. National Association of Medical Examiners' Panel on Sudden Unexpected Death in Pediatrics, "Unexplained Pediatric Deaths: Investigation, Certification, and Family Needs," January 2019.

7. National Association of Medical Examiners, "Forensic Autopsy Performance Standards," approved October 2015; amended September 2020.