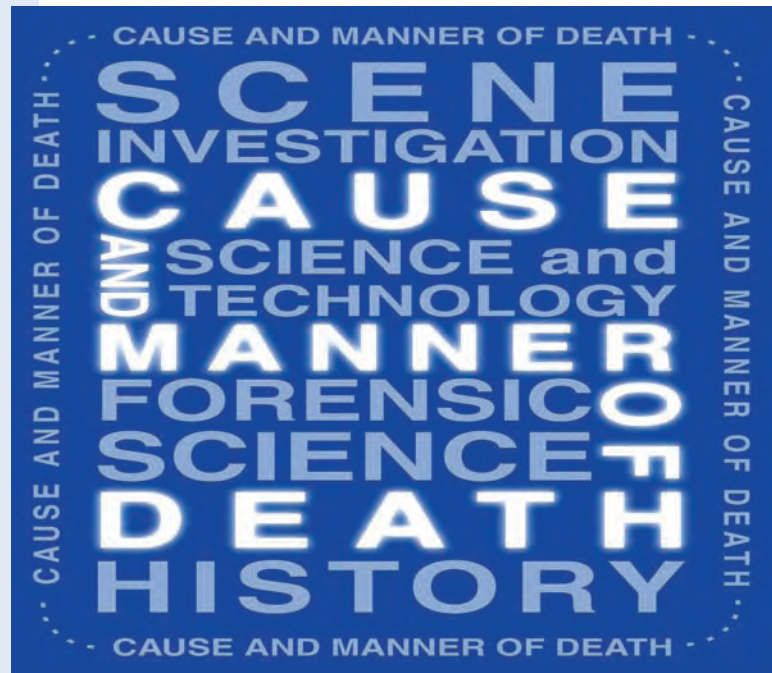


chapter 4



Theresa Covington, M.P.H.
Robert Hinnen, M.S.W.
Deborah Robinson
Bruce Walz, Ph.D.
Bobbi Jo O'Neal, R.N., B.S.N.
Roberta Geiselhart, R.N.

Kay Tomashek, M.D., M.P.H.
Sarah Blanding, M.P.H., R.D.
Donald Burbrink, B.S.
Thomas Andrew, M.D.
Tracey Corey, M.D.

Interviewing and Investigative Data Collection

Family-Caregivers-Healthcare Providers

Unit 9: Initial Case and Witness Information Gathering

Unit 10: Recent Infant Activities and Behavior

Unit 11: Medical Information and Pregnancy History

Unit 12: Dietary and Feeding Information



Information gathering is essential to a successful death investigation. Family members, caregivers, and healthcare providers typically have the most vital background information about the infant. The SUIDI Reporting Form is a useful investigative tool for this task, as each of the key topics is presented in separate sections. Regardless of the scene form used, the issues covered in this chapter are considered critical to the establishment of cause and manner of death.

OVERVIEW

This chapter covers the skills and data collection techniques necessary for conducting field interviews with parents, caregivers, and other civilians at the scene. This includes all interactions between the investigator and individuals identified as the person who last placed the infant (placer), the person who last knew the infant was alive (LKA), and the person who discovered the infant dead or unresponsive (finder). Special attention is given to the most recent activities and actions involving the infant and others associated with the infant. In addition, data collection methods and instruments for documenting medical, dietary, and pregnancy history are detailed.

SUPPORT MATERIALS

In addition to the SUIDI Reporting Form or the jurisdictionally approved equivalent, the following support materials are suggested for this chapter:

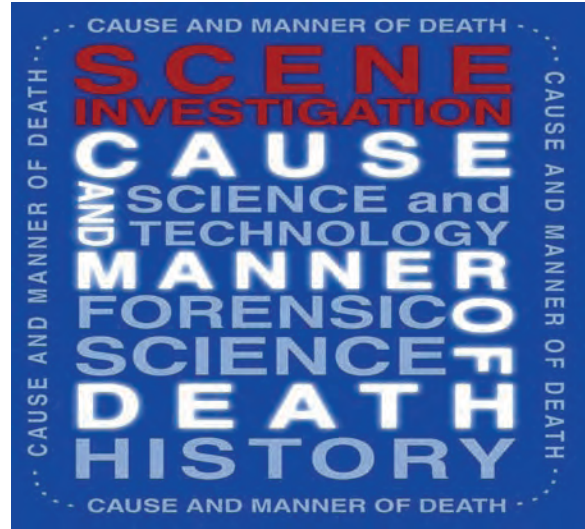
1. Schafer JR, Navarro J. *Advanced Interviewing Techniques: Proven Strategies for Law Enforcement, Military and Security Personnel*. Springfield, Ill: Charles C. Thomas; 2004.
2. Rabon, D. *Interviewing and Interrogation*. Durham, NC: Carolina Academic Press; 1992.
3. Dix J. *Handbook for Death Scene Investigators*. Boca Raton, FL: CRC Press LLC; 1999.

CHAPTER OBJECTIVES

By the end of this chapter, students will be able to:

1. Understand general interview questions.
2. Understand finder, placer, and LKA interview questions.
3. Document parental information.
4. Document other primary caregiver(s) information.
5. Document medical history.
6. Document dietary and pregnancy history.

Each task must be performed in a professional and sensitive manner consistent with local laws, statutes, and customs.



9

Initial Case and Witness Information Gathering

unit

INTRODUCTION

The ability to interview witnesses is a skill that all successful infant death investigators must attempt to master. While such interviews are difficult for any investigator, the interviewer must be prepared to ask non-accusatory questions that are sensitive to the grief and emotions that family members are feeling. Initial contact with individuals at the scene is the first step toward a successful interview. There are some very general lead-in questions that can get the interview started successfully and avoid back-tracking due to a poor first impression. The tone established at the beginning of the interview will have a direct impact on the cooperation that the interviewee is willing to offer. Using standard data collection tools, such as SUIDI Reporting Form and an investigative notebook (for additional information), is the preferred method for collecting data during interviews. This unit covers the initial questioning that takes place at every scene using the SUIDI Reporting Form as a guide.

BEFORE THE INTERVIEWS—ENSURE SCENE SECURITY

Preferred Language

Scene security and safety is critical, not only to ensure that items of evidence are not tampered with and that the scene is preserved, but to make sure everyone remains safe during the investigation. Every effort should be made to help the residents understand what the investigator and other personnel are doing and why. However, language problems make communicating requests extremely difficult, and misinterpretations of actions and tone of voice have been known to turn an already emotionally charged environment into chaos.

In jurisdictions where known language issues exist, some investigative offices have produced pocket cards with key terms and phrases on each in the various languages common to the area. These cards allow individuals at the scene to scan until they find the card with the terms presented in their preferred language, which allows the investigator to quickly identify the language spoken in the home and call for assistance. Once an agency-sponsored interpreter arrives, the investigation can begin.

Interpreters

If the investigator does not speak the preferred language, he or she needs to find someone who speaks *his or her* language *and* the preferred language. In many cases, other adults present or in the vicinity might be able to assist. It may be necessary to enlist the help and/or assistance of other family members or residents of the household to act as interpreters until official agency representatives arrive. This task can be accomplished by either the investigator or the law enforcement officer, who can initiate a simple conversation with other members of the household to determine whether or not anyone present can assist. Exercise extreme care when using a minor child for interpretation. Some words may not be easily translated into another language.

This situation may not be ideal; however, the difference between control and chaos may be seconds, and waiting for an official interpreter to be located and dispatched to the scene may not be realistic. While working with the volunteer interpreter, the investigator's goal is to communicate basic information about what is going on at the scene and possibly identify the lead member of the household.

Safety

Law enforcement should identify and remove all weapons, identify individuals who are under the influence of alcohol or drugs, and identify and secure individuals who appear to be highly agitated. If the scene becomes unsafe or has the potential to become unsafe, additional backup should be requested by law enforcement.

The investigator should minimize access to the scene by nonessential personnel, bystanders, and arriving family members. There will likely be many individuals present at the scene, including the parents/caregivers, other children, other family members, and neighbors. To maintain control, the investigator will have to sort the individuals, requesting that some remain and others leave. The investigator should realize that his or her role in the first initial minutes of the investigation may seem more like emotional defuser than investigator.

IDENTIFY AND REQUEST ADDITIONAL RESOURCES

When dispatched to an infant death scene, the investigator should not be surprised to find that other official agency representatives are already on-scene. These might include emergency medical services, law enforcement, fire, and the medical examiner/coroner and their investigators. It is essential to identify and develop rapport with these individuals and to establish the various roles and responsibilities of each, as they have vital information regarding the identities of witnesses at the scene, their relationships to the decedent, and possible involvement in or knowledge of the circumstances surrounding the death.

Introductions at the scene allow the investigator to establish formal contact with other official agency representatives. Establishing contact with the agency representative allows the investigator an opportunity to gather information regarding the current situation and to begin determining which individuals need to be interviewed. Upon arrival on the scene, the investigator should approach the first official he or she sees and ask what agency is in charge of the investigation. He or she should then locate the agency representative in charge of the scene and get an overview of the case.

The investigator should work cooperatively with all agency representatives on scene and determine if additional resources should be dispatched to the scene. Such resources may include the following:

- A chaplain or appropriate clergy.
- Forensic specialists (i.e., pathologists).
- Child welfare and/or social services.
- Appropriate family members.
- For institutions such as a day care, contact supervisors or management.
- Mental health professionals (e.g., victims' advocates, SIDS support resources).

BASIC SCENE MANAGEMENT

Control Emotions and Control the Scene

The investigator will likely encounter a wide range of emotions at the scene. He or she will need to remember that individuals will express their emotions in various ways throughout the incident, including anger, denial, shock, and complacency. It will be necessary to address not only the emotions of others at the scene, but also the investigator's own emotions in responding to the infant's death (Mitchell & Resnik, 1981).

If the investigator is to manage the scene and collect the information necessary to complete the investigation, then he or she must remain in control, alert, and focused on the investigative tasks ahead. No one set of rules will apply to all scenes, as the locations themselves may dictate the procedure. Whether the scene is the infant's primary residence, the babysitter's house, a day care center, a hospital emergency room, or even the morgue. What might be appropriate for one location might not work at another. The investigator must remain flexible and adjust his or her approach and scene management style accordingly.

The scene will probably be chaotic, and the investigator's role will be to manage this chaos, while at the same time securing the scene or even conducting the investigation. The emotional state of the individuals present may vary by scene type, but there is one constant: different people handle stressful situations differently. It is essential that the infant death investigator understand this idea and not react inappropriately to someone's inability to handle genuine grief. Bereaved individuals act differently than they would in almost any other situation. Investigators should have the same basic approach to scene management and understand it is possible to be organized, in control, and systematic—and still be flexible.

DETERMINE WHO STAYS AND WHO GOES

Witnesses vs. Bystanders

Anyone standing around the scene is a potential witness. The challenge is for the investigator to identify the witnesses from those individuals who have nothing positive to offer the investigation. The sorting process begins by collecting pertinent contact information, including relationship/association to the infant and knowledge of the death and/or circumstances, from all persons who

- Are present at the scene.
- Arrive at the scene during your investigation.
- Had contact with the infant during the past 24 hours.

This introductory conversation and information gathering task will lead to some persons being asked to stay and some persons being asked to step outside for a minute. This is all a part of maintaining control of the scene. In addition to bystanders, the investigator might even need to ask nonessential professionals and family members to leave the area. The persons most likely to make the witness list in the investigation include:

- Persons who had contact with the infant within the past 24 hours.
- Person who placed the infant to sleep (placer).
- Person who found the infant (finder).
- Person who last saw the infant alive (LKA).
- The mother and father or other primary caregivers.

It may be necessary for the investigator to establish the boundaries of the scene and determine where persons should be asked to go. For example, neighbors may be asked to depart the scene boundaries. While grandparents who arrive at the scene may have had no contact with the infant in the last 24 hours, they might be useful in defusing emotions and controlling the scene and be asked to stay. The investigator might also consider asking certain individuals to remain at the scene to assist in caring for persons and pets or to perform other tasks.

The persons who have been identified as necessary to the investigation should be asked to stay. If the investigator is unable to keep them at the scene, he or she should at least make sure that valid contact information has been gathered for later reference. When asking persons to stay, the investigator should attempt to do this in a non-accusatory manner by keeping them informed about why they are being asked to stay. These persons should be assured that the information they provide will be vital to helping the investigator and other officials understand why the infant died. If necessary, the investigator should try to provide them with a comfortable place to wait.

In many cases, the infant may be removed from the scene (e.g., transported to a hospital). Parents/primary caregivers are likely to demand that they accompany their infant. Every effort should be made to honor the family's desires, but the investigator must balance these desires against the circumstances, any legal requirements, and the investigating agency's protocols. If the family accompanies the infant, ensure that they have an escort, and notify the receiving facility that they are in route, so arrangements for their reception and control can be made.

EVALUATE THE POTENTIAL FOR A PRODUCTIVE INTERVIEW AT THIS TIME

It may become clear to the investigator that persons at the scene are in such an agitated state that they are in no condition to undergo a formal interview. However, the investigator should document their behavior and all comments they make. Dead infants' caregivers often retain strong feelings of guilt and sometimes a sense of responsibility for what happened. The investigator should be watchful for and document excited utterances, but he or she must also be sure to document the context in which these utterances were made.

If the investigator will not be conducting an interview with certain persons at the time, he or she should make sure that their contact information has been documented in order to schedule a later interview. However, the investigator should not expect distraught persons to recall any scheduled interview times.

ABOUT THE WITNESSES

Adult Witnesses

As stated above, it is important to identify who was present at the time the infant was discovered dead or unresponsive and who has arrived since that time. The investigator should ask the official in charge who was present when he or she arrived at the scene and who has subsequently arrived. The official may also know who the civilian witnesses are, including the placer, AKA, and finder as well as the official's assessment of those individuals. The first law enforcement official on the scene can complete a log of persons in the area. In addition, the

investigator may attempt to identify the “calm” family member and introduce him- or herself. The investigator should ask that person to identify all of those present and request to be introduced to immediate family members, including the person who found the infant.

Once the individual acting as the primary contact or spokesperson (i.e., father, mother, caregiver, etc.) has been identified, both the investigator and law enforcement, working together, will document the person's name and contact information. This way, both agencies will have the same contact person, as some medicolegal investigations take years to complete. Officials working the investigation may change, and the person assigned the case needs to know who the primary family contact is and how to contact them.

Determining how all adults in the household are related to the infant can help establish who might have had contact with the infant at any given time and whether or not that contact was significant. The mother's "significant other" may not be related to the infant but might have been living with the mother and discovered the infant to be unresponsive. Together with law enforcement and working with the primary contact person, the investigator should determine how all adults at the scene of death are related to the infant.

The investigator should collect detailed information on all adults residing in the household, including names, dates of birth, contact information, and sex. This information will help the pathologist determine any risk factors that might exist in determining cause and manner of death. It will also allow the investigator and law enforcement to go back and further question or assess individuals who might have had contact with the infant.

When collecting information on adults, name changes might be relevant in determining past criminal history or other significant problems. This might include a name change that resulted from a previous domestic violence situation or moving to another locale and changing one's name in order to avoid prosecution in another jurisdiction. Together with law enforcement and working with the primary contact person, the investigator should determine whether any residents present at the death scene have an alias, maiden name, or AKA.

Witnesses

Determining how other children in the household are related to the infant can help establish who might have had contact with the infant. Together with law enforcement and working with the primary contact person, the investigator should determine how all children at the scene of death are related to the infant. Each child's name, date of birth, contact information, and sex should be documented for future reference by the investigator, pathologist, and other agency personnel.

It is common to find multiple children moving around the scene. As discussed previously, the investigator must determine which individuals present at the scene actually live there and who is visiting or being cared for by one of the adults. This is important for a number of reasons, the most important of which is to attempt to ensure their health and safety.

Others

Other adults and children in the household might have contributed in some way to the death of the infant or have information that can help you in your investigation. It will also be important to determine whether there were any visitors (family or otherwise) in the 24 hours preceding the incident or death and who might have visited following the death.

Day cares may have the largest number of individuals present at the time of the incident or death, and each could be a factor in determining the cause and manner of death. Seriously ill or unsupervised children could be a significant issue as well as adults or student assistants. The investigator should determine how many individuals were present at the time of the incident or death and why.

If it is discovered that other children were sharing a bed or sleeping surface with the infant prior to death, the following items should be documented for each child:

- Age
- Date of birth
- Size
- Impairments
- Behavioral problems
- Schools attended

Together with law enforcement, the investigator should create or obtain a list of all individuals present at the time of the incident or death. This list—including both adults and children—can be a very helpful investigation tool. With such a list available, the investigator is able to go back and talk to or identify individuals later for any reason.

IDENTIFY POTENTIAL PROBLEMS

The investigator should be prepared to manage a wide variety of potential problems at the scene of an infant death. These problems might include emotional responses, scene control, patient care, investigative issues, and agency interactions. Of these problems, the most difficult to manage will be emotional states; these can seem to distort the scene. In addition to his or her initial role on the scene, the investigator needs to have a heightened sensitivity to problems that might develop. He or she should also expect some disorganization among responders, and there may be disagreement over who has control of the scene. If there is heightened suspicion of criminal action, special steps related to the control and movements of primary individuals might be necessary (e.g., isolating caregivers from each other).

Depending on the emotional state of the individuals present, the investigator may need to take steps to defuse or control their heightened emotions. Reactions of grieving parents may seem overly intense, self-absorbed, contradictory, or even puzzling. For bereaved parents, the death of a child is so overwhelming that their responses are often baffling not only to others but to themselves as well. Securing the scene emotionally means providing emotional first aid; it does not mean that the investigator is responsible for any sustained mental health service.

In summary, the investigator should expect the following:

- A wide range of emotions and behaviors.
- Resistance by the family to removing the infant from the scene.
- An influx of bystanders and family members.
- More than one move of the infant and a distorted scene.
- Disorganization among responders: EMS, police, and medical investigators.
- An unsecured scene.

Depending on the investigator's own medical protocols and level of expertise, he or she may need to initiate patient first aid. There may be pressure from family members or bystanders to initiate care. It is important to follow appropriate protocols and respond to the emotional and situational needs of the family or bystanders. For example, if the investigator knows that the infant is obviously dead based on his or her agency's protocol, yet the family is pressuring him or her to "do something," it is imperative that appropriate action is taken.

SETUP THE INTERVIEW (REMEMBER ENTRY PHASE)

Introduce Yourself and Identify Your Role

Introduce yourself to the witness, giving your name, title, agency you represent, the purpose of the interview, and who the contact person will be after this phase of the investigation has ended. Explain that this will be a lengthy procedure and that you need to ask a lot of personal questions, some of which will be difficult to answer. Explain that if the witness needs a break, he or she simply needs to ask, and time will be provided.

Document General Interview Data

Document the date and time of your contacts and interviews with witnesses. In addition, document any additional individuals who may have been present at the time of your contact. It is important to assign and record the case number on all documents linked to the case.

Initiating the Interview

Begin your interview by attempting to gather *general investigation data*. This data includes infant information and general witness contact information. This procedure helps to establish rapport with the interviewee because these are questions the interviewee can easily answer. These questions also give you an opportunity to assess the interviewee's educational level, sobriety, and any disabilities or language barriers. The person's demeanor during these questions will let you know whether this is a good time for the interview and whether special intervention by a translator, counselor, and/or clergy member is needed. Observe and document the witness's appearance, answers to biographical information, and willingness to cooperate.

GENERAL INVESTIGATION DATA**Infant Information**

Once the scene is controlled and the primary caregiver is identified, the investigator should begin the process of documenting the infant's personal information. Full name (first, middle, and last—ask for correct spelling) date of birth, age in months, sex, race, and Social Security number all need to be collected and entered into the case file or scene reporting form. It is important to document the complete address of the infant's primary residence and incident address, if different. This information is essential to the investigation and will assist the investigator during the interviewing process as rapport is established with the parent, guardian, or primary caregiver. Experienced investigators recommend that interviewers should refer to the deceased infant by his or her first name when interviewing parents or caregivers.

Witness Information

Document the full name of the witness: first, middle, and last; ask for the correct spelling. Also, ask for other names that he or she has used; the birth mother may have used a different name at the time of the infant's birth. This information is important when requesting data from hospitals and agencies. Inquire about names and AKAs from law enforcement and Child Protection Services as well. Dates of birth and Social Security numbers are helpful in locating records from other agencies and are searchable in many agency databases.

Relationship to the Deceased

The infant's caregivers might or might not be the biological parents. Information about the infant's caregivers could be useful in locating additional records relevant to the investigation and in determining circumstances of death. Preferably, the information is collected by questioning the caregivers, but it can be obtained from others. Record how the witness is related to the deceased or why the person has specific information about the deceased as well as how long the person has known or had a relationship (as babysitter, day care provided, etc.) with the decedent.

Witness(es) Address(es)

Document current and previous address(es) of witnesses as well as work address if available. Investigators may need this information for local law enforcement agencies to ascertain prior involvement. Previous addresses will assist in determining whether witnesses had contact with the decedent when living elsewhere. This is especially important if the deceased has moved from another state or locale. You will also need this information to gather information from out-of-county or out-of-state law enforcement or child protection agencies, as well as vital records.

Phone Numbers

Include any and all phone numbers, including area codes. You should note whether these are work, home, cellular, or pager numbers. Record any information that may be helpful to reach these contacts (i.e., works nights, etc.).

INVESTIGATION DATA					
Infant's Information: Last _____		First _____		M. _____	Case # _____
Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	Date of Birth _____ / _____ / _____		Age _____	SS# _____	
	Month	Day	Year	Months	
Race: <input type="checkbox"/> White	<input type="checkbox"/> Black/African Am.	<input type="checkbox"/> Asian/Pacific Islander	<input type="checkbox"/> Am. Indian/Alaskan Native	<input type="checkbox"/> Hispanic/Latino	<input type="checkbox"/> Other
Infant's Primary Residence Address:					
Address _____		City _____		County _____	State _____ Zip _____
Incident Address:					
Address _____		City _____		County _____	State _____ Zip _____
Contact Information for Witness:					
Relationship to the deceased: <input type="checkbox"/> Birth Mother	<input type="checkbox"/> Birth Father	<input type="checkbox"/> Grandmother	<input type="checkbox"/> Grandfather		
<input type="checkbox"/> Adoptive or Foster Parent	<input type="checkbox"/> Physician	<input type="checkbox"/> Health Records	<input type="checkbox"/> Other: _____		
Last _____		First _____		M. _____	SS # _____
Home Address _____		City _____		State _____	Zip _____
Place of Work _____		City _____		State _____	Zip _____
Phone (H) _____		Phone (W) _____		Date of Birth _____ / _____ / _____	
		Month	Day	Year	

Fig. 4.1: General Investigation Data section of the SUIDI Reporting Form.

ADDITIONAL INVESTIGATION DATA (CASE DEPENDENT—RECORD IN INVESTIGATIVE NOTES)

Time period in which contact occurred: If event chronology is questioned, specific event timing may need to be recorded to establish a timeline documenting who has had contact with the infant and when. Many times, recorded and documented injuries can be delayed, and it is imperative that you know who had "hands-on" access to the infant during those times to determine whether a pattern can be established.

Involvement with decedent: This documents or verifies the relationship between witness and infant and the information being provided. In other words, "how do you know this information?" For example, the day care provider might relay information that the deceased had a history of chicken pox because she had to send the deceased home when the pox occurred. Other day care providers may also have this information because it is common practice to inform parents/caregivers when their child is exposed to chicken pox.

Involvement with family: As above, this information should be recorded to document the relationship between the interviewee, the infant, and the family. At times, children who are abused/neglected are sheltered from extended contact with one person to avoid diagnosis/detection of trauma. Sample responses: "cared for the decedent when the decedent was sick with the flu and unable to go to regular day care"; "boyfriend of deceased's 16-year-old sister and babysat with her two days prior to death."

Employer information: This is especially helpful when tracking medical insurance, correct dates of birth, or Social Security numbers of witnesses. Depending on the state from which information is being sought, this may be the only way to gather necessary information.

Marital status: It is imperative to determine marital status from those persons who identify themselves as the infant's parents or significant permanent caregivers. A significant relationship can sometimes rule someone in or out if a manner of death other than "natural" is considered.

Educational level: Educational levels of the infant's parents or significant caregivers should be noted. By ascertaining the individuals' levels of education, the death investigator will be better able to assess the appropriateness of specific words.

WITNESS INTERVIEW QUESTIONS

When you ask the witness, "Are you the usual caregiver?" The initial "yes" or "no" is recorded. However, the follow-up, "Tell me what happened" produces details that must be documented in your investigative notes for later use in the narrative report.

WITNESS INTERVIEW	
1	Are you the usual caregiver? <input type="checkbox"/> Yes <input type="checkbox"/> No
2	Tell me what happened: _____ _____ _____

Fig. 4.2: The initial questions in the Witness Interview section of the SUIDI Reporting Form begin to establish "circumstances of death" data for later use in the investigator's narrative report.

Changes in Caregivers

Changes in the caregivers of an infant may indicate differences in the infant's normal patterns and behaviors, which could be a contributing factor to the cause of death. Find out the names of all caregivers for the child within the past 48 hours, and ask whether they are regular caregivers. If there was a change in caregivers during that time, find out why. Interview all caregivers who had contact with the infant during the last 48 hours.

Document Witness's Involvement with Family (if Not a Family Member)

Ask open-ended questions that focus on the interaction and relationship the witness had with the infant and if appropriate, the infant's family. Determine how the witness became involved with the family and document the history and any unusual circumstances surrounding the relationship.

Sometimes the person closest to the caregiver is the one most likely to harm/hurt the child. Document why the witness was involved with the caregiver. Note the period of time(s) the person was with the decedent and for what reasons. Those who care for the decedent are the most likely to make subtle observations about the physical, feeding, and emotional status of the infant. Accurately record dates/times pertinent to the witness's contacts with the infant.

Ask the witness to describe their relationship to the infant. This might provide insight into the amount of responsibility the witness has toward the infant and could also indicate motivation for his or her actions. If the witness is not the primary caregiver, ascertain whether he or she cares for the infant on a regular basis.

Specifically, ask questions similar to the following:

- What is your relationship to Johnny?
- Are you a primary caregiver for Shannon?
- How often do you care for Jake and under what circumstances?

Sometimes young males will say, "It's my girlfriend's baby." Ask whether he is the father. If this is a grandparent, aunt, or uncle, establish whether he or she is on the maternal or paternal side of the family. Often friends are referred to as an aunt or uncle even if they are not actually related. References such as these are common among family infrastructures, especially in nontraditional families.

It is vital to record factual information relating to a very young decedent. Reviewing this data may yield trends and focus the investigation toward the underlying cause of death. Unusual circumstances should be questioned when obtaining information from any witness.

Specifically, ask the following questions:

- Did you experience any difficulties while caring for Jane?
- Did you notice any injuries/behavior changes during the time you spent with Kim?
- Did anyone ever relay information about Jimmy to you?

Many times witnesses will expand on answers to questions, so be sure to record any additional data. For instance, “The babysitter called me and had me pick Jane up, as she was unable to reach the mom; babysitter said this wasn’t the first time that this occurred.” Did anyone notice that the child was fussier after eating certain foods or exposure to different environments? Document this information in the investigative notebook.

RECENT CONTACTS, ACTIVITIES, AND BEHAVIORS

In cases of inflicted traumatic deaths, persons with access to the infant before the infant's death might be responsible for the injury or might be able to provide a history of changes in behavior that can aid in determining the timing of injury. In cases of death due to an infectious disease, human contacts may be the source of the infection or need to be informed regarding risk of infection and necessity of prophylaxis because of exposure to the infectious infant. In natural death (including inherited conditions such as glutaric aciduria), those having contact with the infant might be able to provide information about the general health status and activity level of the infant before his or her death.

Recent Human Contacts with Infant

As with all individuals interviewed, identify their relationship to the infant. Documentation of family structure might be important in cases of inherited disorders that result in death occurring in the home environment. Previous deaths might alert the investigator and pathologist to this possible etiology, and living siblings might need further medical evaluation if an inherited condition is identified as the cause of death. In traumatic deaths, family structure might have played a role in the event because even when multiple children are present in an abusive home, one child is usually singled out as the “target child.” Understanding such family dynamics may aid the investigator in assessing information provided by various family members and in gathering ancillary information.

The age of witness and date and time of the contact is important in four general scenarios:

- Infectious diseases routinely affecting pediatric populations.
- Accidental deaths involving bed or sleep surface sharing.
- Traumatic injuries.
- Elderly or nonprimary caregivers.

It is important to document the chronology and location of contacts. Temporal information is most important in cases involving infectious disease scenarios or traumatic deaths. In the case of infectious diseases, persons with recent contact may be

- The source of the infection.
- At risk for development of the infection.

Describe Signs and Symptoms

Ask the caregiver if the infant exhibited any signs of illness, and attempt to determine if the infant was sick or seemed ill prior to death. Ask the caregiver to describe any symptoms, such as coughing, fever, runny nose, diarrhea, vomiting, lethargy, and/or other changes in behavior. If the caregiver states that the child had a fever, ask him or her what the temperature was and how it was taken. Many times the caregiver will just feel the infant's skin rather than use a thermometer, so document their description (felt fine, hot, burning up, etc.). If a specific temperature was recorded, document it and report the information to the pathologist. Be aware that interviewees from other cultures may have a different approach to describing signs and symptoms of illness, and additional questioning may be needed to clarify information.

Ask what the caregiver did to relieve the symptoms—went to the doctor, called the doctor, provided home remedies. If any medications or substances were given, ask to see the item, and collect the material if necessary. Ask what dosages were given, and determine whether they were appropriate for this infant. If home remedies were administered, be sure to get a list of all ingredients and ask how the caregiver knew about this home remedy.

Document Other People Who May Have Gotten Sick

This is of importance when the autopsy indicates an infectious cause of death. In such cases, exposure is important, in that one of the persons in contact with the infant might be the source of infection, or persons having direct contact with an infectious infant might need to seek medical advice and/or prophylactic treatment.

If the investigation determines that the infectious agent is either virulent or extremely contagious, or if the etiologic agent is designated as one requiring mandatory reporting, the local health department should be notified as early as possible. The pathologist will be able to communicate with the health department regarding the pathologic findings at autopsy. The investigator should be ready to provide the health department with the names and contact information of those persons who have had recent direct contact with the infant.

Describe Any Recent Injuries or Falls

If the infant sustained any injuries from accidents, falls, or trauma, the caregiver should describe the injuries to the investigator, including the time, location where the injury occurred, under what circumstances it occurred, and what treatment was provided. You may need to investigate the alleged incident by going to the location and measuring the height of the fall and the type of surface the infant landed on. If there was a motor vehicle accident, determine the date, time, and location of the accident, and obtain the police report. Individuals present at the time of the injury should also be interviewed.

This information should be documented on the appropriate scene form and detailed in the investigator's notebook for writing the narrative report to the pathologist. Infant exposure history is also essential for documenting public health concerns and contacting the appropriate agency if additional interaction is required. Remember, if there are other small children in the home who may be at risk, it is your responsibility to contact child protective services and report the issue.

WITNESS INTERVIEW	
3 Did you notice anything unusual or different about the infant in the last 24 hrs?	<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Describe: _____
4 Did the infant experience any falls or injury within the last 72 hrs?	<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Describe: _____

Fig. 4.3: Recent infant activities and behavior are addressed in the Witness Interview section of the SUIDI Reporting Form.

QUESTIONS FOR THE PLACER/LKA/FINDER

By this time, the investigator should know which individual placed the infant down last (**P**lacer), last knew the infant was alive (**L**KA), and found the infant dead or unresponsive (**F**inder). If the placer, finder, and LKA is the same person, then the interviewer begins the process of documenting times, locations within the scene, and positions of the infant in each instance (placed-LKA-found).

Times and locations: The date and time the infant was last placed down, last known alive, and found are recorded on the investigative scene form and in the investigator's notebook. This information is critical to the investigation and the pathologist, who may use the data to establish timelines that detail infant and witness activity during the period between life and death. The location of both placement and discovery could be critical to the cause of death, as some objects and locations within the environment may have been hazardous to the infant.

WITNESS INTERVIEW						
5	When was the infant LAST PLACED ?	Month /	Day /	Year	Military Time	Location (room)
6	When was the infant LAST KNOWN ALIVE(LKA) ?	Month /	Day /	Year	Military Time	Location (room)
7	When was the infant FOUND ?	Month /	Day /	Year	Military Time	Location (room)
8	Explain how you knew the infant was still alive.					_____
9	Where was the infant - (P)laced, (L)ast known alive, (F)ound (circle P, L, or F in front of appropriate response)?					
	P L F Bassinet	P L F Bedside co-sleeper	P L F Car seat	P L F Chair		
	P L F Cradle	P L F Crib	P L F Floor	P L F In a person's arms		
	P L F Mattress/box spring	P L F Mattress on floor	P L F Playpen	P L F Portable crib		
	P L F Sofa/couch	P L F Stroller/carriage	P L F Swing	P L F Waterbed		
	P L F Other _____					

Fig. 4.4: Specific date, time, and location gathered from the placer, LKA, and finder.

Position of body, neck and face: The investigator should ask the placer, LKA, and finder to describe and demonstrate if possible (see Chapter 7, Doll Reenactment) infant positioning when placed, last known alive, and found. It is also essential to document the position of the face and neck during this part of the interview.

WITNESS INTERVIEW						
10	In what position was the infant LAST PLACED ?	<input type="checkbox"/> Sitting	<input type="checkbox"/> On back	<input type="checkbox"/> On side	<input type="checkbox"/> On stomach	<input type="checkbox"/> Unknown
	Was this the infant's usual position?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → What was the infant's usual position? _____			
11	In what position was the infant LKA ?	<input type="checkbox"/> Sitting	<input type="checkbox"/> On back	<input type="checkbox"/> On side	<input type="checkbox"/> On stomach	<input type="checkbox"/> Unknown
	Was this the infant's usual position?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → What was the infant's usual position? _____			
12	In what position was the infant FOUND ?	<input type="checkbox"/> Sitting	<input type="checkbox"/> On back	<input type="checkbox"/> On side	<input type="checkbox"/> On stomach	<input type="checkbox"/> Unknown
	Was this the infant's usual position?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → What was the infant's usual position? _____			
13	FACE position when LAST PLACED ?	<input type="checkbox"/> Face down on surface	<input type="checkbox"/> Face up	<input type="checkbox"/> Face right	<input type="checkbox"/> Face left	
14	NECK position when LAST PLACED ?	<input type="checkbox"/> Hyperextended (head back)	<input type="checkbox"/> Flexed (chin to chest)	<input type="checkbox"/> Neutral	<input type="checkbox"/> Turned	
15	FACE position when LKA ?	<input type="checkbox"/> Face down on surface	<input type="checkbox"/> Face up	<input type="checkbox"/> Face right	<input type="checkbox"/> Face left	
16	NECK position when LKA ?	<input type="checkbox"/> Hyperextended (head back)	<input type="checkbox"/> Flexed (chin to chest)	<input type="checkbox"/> Neutral	<input type="checkbox"/> Turned	
17	FACE position when FOUND ?	<input type="checkbox"/> Face down on surface	<input type="checkbox"/> Face up	<input type="checkbox"/> Face right	<input type="checkbox"/> Face left	
18	NECK position when FOUND ?	<input type="checkbox"/> Hyperextended (head back)	<input type="checkbox"/> Flexed (chin to chest)	<input type="checkbox"/> Neutral	<input type="checkbox"/> Turned	

Fig. 4.5: Infant positioning is documented at different time intervals: placed, last known alive and found.

Changes in sleep location and position: Ask the caregiver to describe where the baby routinely sleeps, in what position, and any changes in sleep routine that occurred during the past 48 hours. Changes in sleep patterns could signify illness, injury, or environmental problems. Determine the infant's normal sleep pattern and find out why any deviations in that pattern occurred. Possible sleep pattern disruptions include moving to a new bed, being moved to a new room, sleeping with another person, and being placed on the stomach or side rather than the back. This additional information should be documented in the investigative report.

Clothing and bedding: Ask the caregiver what the infant was wearing when they were found. In addition to the type and appropriateness of the clothing, document how the infant was wrapped (if applicable). The type of bedding used on the infant's sleeping surface, crib, or bed is also important to determine, describe, and document with photographs.

WITNESS INTERVIEW					
19 What was the infant wearing? (ex. t-shirt, disposable diaper) _____					
20 Was the infant tightly wrapped or swaddled? <input type="checkbox"/> No <input type="checkbox"/> Yes ⇨ Describe: _____					
21 Please indicate the types and numbers of layers of bedding both over and under infant (not including wrapping blanket):					
Bedding UNDER Infant		None	Number	Bedding OVER Infant	
Receiving blankets	<input type="checkbox"/>	_____		Receiving blankets	<input type="checkbox"/> _____
Infant/child blankets	<input type="checkbox"/>	_____		Infant/child blankets	<input type="checkbox"/> _____
Infant/child comforters (thick)	<input type="checkbox"/>	_____		Infant/child comforters (thick)	<input type="checkbox"/> _____
Adult comforters/duvets	<input type="checkbox"/>	_____		Adult comforters/duvets	<input type="checkbox"/> _____
Adult blankets	<input type="checkbox"/>	_____		Adult blankets	<input type="checkbox"/> _____
Sheets	<input type="checkbox"/>	_____		Sheets	<input type="checkbox"/> _____
Sheepskin	<input type="checkbox"/>	_____		Pillows	<input type="checkbox"/> _____
Pillows	<input type="checkbox"/>	_____		Other, specify: _____	
Rubber or plastic sheet	<input type="checkbox"/>	_____			
Other, specify: _____					

Fig. 4.6: Type of clothing and bedding used for the infant must be documented.

At this time the investigator should determine and record the location of these items for inspection and photographing once the interview is concluded or during the doll reenactment portion of the scene investigation.

Items operating or within reach of the infant: Ask the caregiver if anything was operating in the room when the infant was found, and have them describe the room temperature—remember what might be too hot to you might be just right to the witness. Document the caregiver's interpretation as a point of reference.

WITNESS INTERVIEW					
22 Which of the following devices were operating in the infant's room?					
<input type="checkbox"/> None	<input type="checkbox"/> Apnea monitor	<input type="checkbox"/> Humidifier	<input type="checkbox"/> Vaporizer	<input type="checkbox"/> Air purifier	<input type="checkbox"/> Other _____
23 What was the temperature of the infant's room? <input type="checkbox"/> Hot <input type="checkbox"/> Cold <input type="checkbox"/> Normal <input type="checkbox"/> Other _____					
24 Which of the following items were near the infant's face, nose, or mouth?					
<input type="checkbox"/> Bumper pads	<input type="checkbox"/> Infant pillows	<input type="checkbox"/> Positional supports	<input type="checkbox"/> Stuffed animals	<input type="checkbox"/> Toys	<input type="checkbox"/> Other _____
25 Which of the following items were within the infant's reach? <input type="checkbox"/> Blankets <input type="checkbox"/> Toys <input type="checkbox"/> Pillows					
<input type="checkbox"/> Pacifier	<input type="checkbox"/> Nothing	<input type="checkbox"/> Other _____			

Fig. 4.7: Answers to questions about the infant's general environment are documented here.

Ask the witness to describe the items in the crib or bed with the infant. Again, note the location of these items for documentation during the scene investigation. This is especially important if the interview is taking place at a scene **other than** the actual incident location, such as a hospital.

Sharing of sleep surface: Determine if anyone was sharing the sleep surface with the infant. If yes, document ages, approximate height and weight, location in relation to the infant, and if they were intoxicated or under the influence of any medication or drugs. A considerable risk factor for infants appears to be sharing of sleeping surfaces with other individuals.

WITNESS INTERVIEW						
26	Was anyone sleeping with the infant?	<input type="checkbox"/> No	<input type="checkbox"/> Yes ⇒ Name these people.			
	Name	Age	Height	Weight	Location in Relation to Infant	Impaired (<i>intoxicated, tired</i>)
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

Fig. 4.8: Questions about sleeping arrangements require the investigator to collect additional information about additional witnesses.

While talking about the infant's sleeping environment and arrangements, it is recommended that the investigator ask about the condition and location (in the bed/crib) of the infant when found. Attempt to determine if the person checked on the infant and why? Find out if the infant was wedged between anything when found, and have them describe what the body looked like and felt like when they first discovered and picked up the infant (e.g., cold, stiff, wet, etc.).

WITNESS INTERVIEW						
27	Was there evidence of wedging?	<input type="checkbox"/> No	<input type="checkbox"/> Yes ⇒ Describe:	_____		
28	When the infant was found, was s/he:	<input type="checkbox"/> Breathing	<input type="checkbox"/> Not breathing			
	If not breathing, did you witness the infant stop breathing?	<input type="checkbox"/> No	<input type="checkbox"/> Yes			
29	What had led you to check on the infant?	_____				
30	Describe infant's appearance when found.					
			Unknown	No	Yes	Describe and specify location:
	a) Discoloration around face/nose/mouth.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	b) Secretions (<i>foam, froth</i>).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	c) Skin discoloration (<i>livor mortis</i>).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	d) Pressure marks (<i>pale areas, blanching</i>).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	e) Rash or petechiae (<i>small, red blood spots on skin, membranes, or eyes</i>).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	f) Marks on body (<i>scratches or bruises</i>).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
	g) Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒	_____
31	What did the infant feel like when found? (<i>Check all that apply.</i>)					
	<input type="checkbox"/> Sweaty	<input type="checkbox"/> Warm to touch	<input type="checkbox"/> Cool to touch			
	<input type="checkbox"/> Limp, flexible	<input type="checkbox"/> Rigid, stiff	<input type="checkbox"/> Unknown			
	<input type="checkbox"/> Other ⇒ Specify:	_____				

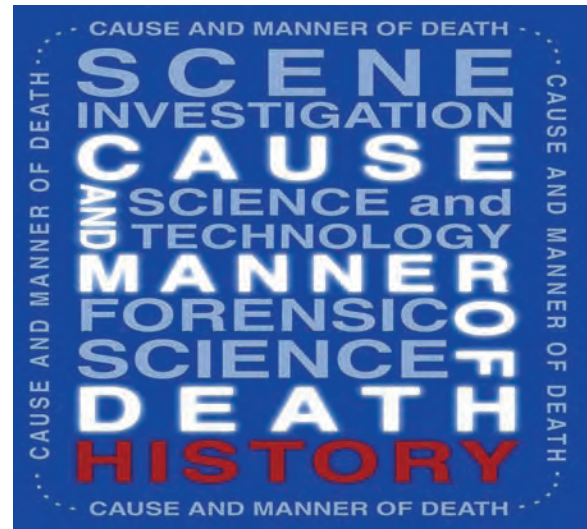
Fig. 4.9: Questions about "wedging" and the infant's appearance upon discovery.

Resuscitative efforts: If anyone attempted to resuscitate the infant, it should be documented on the investigative form and in the investigators scene notes. If emergency medical services personnel (EMS/fire/law enforcement) attempted resuscitation, the investigator should note this and follow up with agency representatives after the caregiver interview.

If the caregiver attempted to resuscitate the infant, some investigators feel this is a good time to ask if they have ever attempted to resuscitate an infant before. That question may be a good "lead in" to asking if they have ever witnessed an infant death or had an infant die while in their care before.

WITNESS INTERVIEW	
32	Did anyone else other than EMS try to resuscitate the infant? <input type="checkbox"/> No <input type="checkbox"/> Yes ⇨ Who and when? Who _____ / _____ / _____ : _____ Month Day Year Military Time
33	Please describe what was done as part of resuscitation: _____ _____
34	Has the parent/caregiver ever had a child die suddenly and unexpectedly? <input type="checkbox"/> No <input type="checkbox"/> Yes ⇨ Explain _____ _____

Fig. 4.10: Resuscitative efforts by EMS may lead in to questions about other infant deaths the caregiver has witnessed.



10

unit

Recent Infant Activities and Behavior

INTRODUCTION

Identification of any significant changes in an infant's usual behavior may be critical in the ultimate determination of cause and manner of death. Behavioral changes observed by those who knew the infant best warrants detailed but gentle questioning. Infectious diseases, late-presenting congenital anomalies, or metabolic diseases may be indicated by such subtle changes as increased lethargy, and the primary caregiver is the single best source for this information.

OBTAINING ACCURATE INFORMATION

The best and most accurate way to obtain this critical information is through a sensitive interview of **each individual** involved in the infant's day-to-day care. It is important to convey your questions in language that is fully understood by the person interviewed. For example, "lethargy" may have to be presented as "more sleepy than usual." Be sure that what you are documenting represents a change. The "colicky" infant who is described as fussy exhibits essentially unchanged, usual behavior.

As with behavioral changes, identifying recent changes in an infant's physical health may be important in determining cause and manner of death, for example, vomiting, difficulty breathing, or weight loss in the infant. These changes are more objective than behavioral changes and can guide postmortem examinations to pinpoint a specific etiology of the infant's sudden death. This important information can be fleshed out during the caretaker interview, but it can also be found in a review of the infant's medical record. Be sure to obtain the healthcare provider's contact information so these records may be reviewed as necessary.

DOCUMENT CHANGES IN INFANT BEHAVIOR AND PHYSICAL HEALTH 72 HOURS PRIOR TO DEATH

History of Lethargy or Sleeping More Than Usual

Newborn infants typically sleep about 16 to 18 hours a day. As the child gets older, this time is broken up with periods of wakefulness and frequent naps (Levine, Carey, & Croker, 1999). Although there is wide variability among infants, what is most important to document is any change in the infant's usual sleep behavior.

Increased sleeping may represent hypoxia caused by lung infections (pneumonia, bronchiolitis, etc.) that can develop very rapidly and without the usual adult symptoms such as cough, wheezing, or fever. Lethargy may be a manifestation of central nervous system depression induced by infection (meningitis), electrolyte disturbance (intestinal diseases, metabolic diseases or unusual feeding practices), or brain injury (accidental or intentional).

Recent History of Fussiness or Excessive Crying

The usually placid infant who displayed excessive crying or fussiness in the 72 hours prior to death is more worrisome than the usually colicky infant because the behavior represents a change in behavior. Crying is the infant's only external response to pain or other discomfort. Pain may be due to intestinal pathology such as gut malrotation or obstruction, bone pathology such as fractures due to abuse or metabolic diseases, or brain pathology such as meningitis or head injury. The infant with hypoxia and "air hunger" from congenital heart disease, pneumonia, or bronchiolitis also might become quite fussy.

Recent History of Vomiting

Vomiting refers to the forceful expulsion of food that has made its way to the stomach. Babies spit up. Wet burps need to be distinguished from true vomiting. A recorded history of "he vomits constantly" is vague and of little value to the autopsy pathologist. Actual vomit tends to be curdled due to the action of gastric acid.

Vomiting accompanied by diarrhea (see below) and/or fever suggests an infectious disease. The (usually male) infant with a history of forceful "projectile vomiting" (literally several feet) may have pyloric stenosis, a narrowing of the lower part of the stomach that can prevent food from emptying. Vomiting alone also might be a sign of metabolic diseases or brain injury.

Recent History of Diarrhea and Change in the Infant's Stool

Diarrhea refers to a specific change in the infant's stool pattern, namely, increase in frequency and liquid content of stool. A history of "she's had diarrhea since she was born" is not helpful. A more important question is: "Does the infant's stool look different? (e.g., blood, mucous, watery, color change)?" The caregiver may be able to give a more definitive answer to the question, "About how many times have you had to change the baby's diaper?" than to a query

about the number of liquid stools. The diarrhea should be described as to water content (totally liquid?) and presence or absence of blood in the stool.

Ancillary information that may be important includes the water source for formula if the infant was formula-fed, and presence of any gastrointestinal symptoms in other household members. If the infant was taken to a healthcare provider in the previous 72 hours for a complaint of diarrhea, a review of the medical record may reveal a stool culture or Rotazyme test. Follow-up of these results may provide a specific infectious etiology.

History of Difficult Breathing

Breathing difficulties can be caused by a range of medical conditions and illnesses that affect the lungs or airways such as viral croup, bronchiolitis, pneumonia, foreign body aspiration, and birth (congenital) abnormalities of the airway. Breathing difficulties may also be due to a head (brain) injury, poisoning, and heart defects.

Infants with breathing difficulties cannot tell you that they are having problems breathing. However, infants with difficulty breathing may be breathing faster than they normally do, and the skin between their ribs may be sucking in when they breathe (called a retraction). The side of their nose may be moving in and out with each breath (called nasal flaring), and infants in respiratory distress may make a grunting sound with each exhalation. Infants with difficulty breathing may have episodes of apnea when they stop breathing for a period of time. They may become cyanotic, that is, have blue-grey discoloration of their lips, mouth, and face. Other signs of difficulty breathing include wheezing and stridor.

Wheezing refers to the audible whistling sound heard during exhalation and caused in most cases by bronchospasm (muscle constriction of the small breathing passages on the lungs). This is distinguished from stridor, which is a coarser sound heard during inhalation, most commonly from partial obstruction of the upper airway by a foreign body, an extrinsic mass, infection, airway edema, or due to congenital "floppiness" of the trachea (tracheomalacia).

The distinction between wheezing and stridor is important as it might indicate the specific cause of death. Wheezing may be a manifestation of viral bronchiolitis or pulmonary edema due to congestive heart failure. The former is likely to be accompanied by fever and/or runny nose; the latter is not. A good description of stridor may alert the forensic pathologist to be on the lookout for tiny foreign objects (i.e., buttons, nuts, etc.) in the infant's airway, anatomic abnormalities of the upper respiratory tract and surrounding structures, or tumors causing extrinsic compression of the upper airway. Although "difficulty breathing" is a broad general term, with careful and precise questioning, a skilled interviewer can glean a great deal of valuable information.

Any Recent Fever

Fever refers to a measured elevation in body temperature above "normal." The answer provided to the question, "Did the baby have a fever?" might not reflect an objective measured change. Be specific. Did the baby feel warm to the touch? Was the temperature measured? If yes, how was it measured? Rectally? Under the arm? Adhesive strip applied to the forehead? What was the temperature?

Fever, although most commonly associated with infection, can also point to other pathological conditions. Elevated temperature can be observed in an overbundled infant in an overheated room. Overheating due to overdressing or elevated room temperature is a well-documented risk factor in sudden infant death.

Recent Excessive Sweating

Sweating is a nonspecific but potentially important feature of the infant's recent history. Sweating might be from a fever or environmental overheating, but it might also be reflective of an infant in congestive heart failure, unable to meet his or her metabolic needs. The infant with congestive heart failure tends to sweat during feedings or other exertion.

Recent Choking

Two-thirds of the nearly 4,000 fatal choking episodes annually in the United States involve those under the age of three years. Infants explore their world by putting things in their mouths, and they are just learning to handle solid foods. A partially obstructive foreign body can cause periodic choking, but a shift in its position could lead to a catastrophic occlusion of the airway and sudden death. What may appear to the caregiver to be choking might actually be gagging, from some sort of gastrointestinal pathology such as partial obstruction or gastroenteritis. The infant with known gastroesophageal reflux may seem to choke with some frequency. Although this fact might indeed be important, the new onset of choking episodes may indicate some other disorder.

All potential sources for introduction of a foreign body should be sought. The investigator should ask the following questions:

- Was a sibling alone with the infant?
- Are all buttons, snaps, etc., on the infant's clothing intact and accounted for?
- Are there any possible sources (toys, etc.) in the infant's crib?

Although the source of choking might not be pinpointed, the history of choking is vitally important to the autopsy pathologist as they examine the infant's respiratory tract.

Recent Seizure, Convulsion, or Unusual Movement

A caregiver is less likely to tell the investigator, "The baby had a seizure," but they may try to describe odd movements in one or more of the infant's extremities. It is advisable to avoid using the term "seizure" or "convulsion" unless the caregiver introduces the word into the interview. Inquire about unusual movements of the extremities, and be prepared to request details to characterize those movements (e.g., rapid, jerky, slow, undulating). More subtle signs of seizure activity include eye blinking, lip smacking, or staring spells.

The significance of apparent seizures clearly centers on the central nervous system. An intrinsic seizure disorder is possible, and a family history of seizures should be sought when appropriate. Alternatively, new onset seizures may herald the presence of an inborn error of metabolism, electrolyte disturbance due to formula-mixing errors, odd feeding practices, or head injury. It is estimated that from 40% to 70% of infants with head trauma exhibit seizure activity.

Lack of extremity movement introduces other possibilities in the diagnosis of the infant's sudden death. Pain due to occult fractures may prompt the infant to limit his or her movement. Although rare, lack of extremity movement may reflect a central nervous system disease or injury.

DOCUMENT INJURIES IN THE 72 HOURS PRIOR TO DEATH

Recent Falls

If the infant experienced or was involved in a recent fall, the investigator should document as much data surrounding the circumstances of the fall(s) as possible. Key elements of the history include:

- Height of the fall—Although no one can reasonably claim that short falls (fewer than four feet) never cause death, published literature suggests that such a scenario is rare. The caregiver should be encouraged to demonstrate the height of the fall or point out the location from which the infant is said to have fallen, as opposed to simply stating an estimated height of the fall.
- Impacting surface—If you are unable to view the surface onto which the infant is said to have fallen onto or struck, seek as much detail as possible. Was the surface wood, concrete, or carpet? If carpet, was it padded?

- Surface area of contact—Forces will be distributed much differently when an infant falls from a couch and lands on his or her back on a heavily carpeted plywood floor, as opposed to falling from the same height and landing directly on his or her head on a metal toy car or a concrete floor. Document all details.

Recent Head Injuries

Accidental head injuries in infants are most often ascribed to falls, but occasionally other scenarios arise, such as injuries inflicted by a sibling's accidentally striking the infant's head against some fixed object or the caregiver falling while carrying the infant. Regardless of the mechanism, the investigator's primary responsibility is to gather the information necessary to recreate the circumstances surrounding a described injury.

Recent Extremity Fractures

A history of extremity fracture in the 72 hours before death will most certainly be accompanied by a medical record and radiographic documentation. The explanation of the fracture given during the death investigation should be compared to the history reported on the medical record. Not all fractures are traumatic; metabolic bone diseases such as osteogenesis imperfecta, skeletal dysplasias, and certain syndromes can lead to fractures. The nature of fractures in infants, particularly those of an abusive nature, differs substantially from those seen in older children and adults. Abusive fractures in infants tend to involve the ribs and the ends of long bones. There will be no visible deformity, but pain is a feature nevertheless.

Recent Burns

Like fractures, burns experienced in the 72 hours before death should have medical documentation that can be compared to the history offered at the time of the death investigation. If not, the investigator should seek specific details regarding the burn. Different types of burns have different appearances. Burn types include flame, scald, contact, electrical, chemical, and UV radiation. Scalds and contact burns represent the most common types of abusive burns. When dealing with scalding, the investigator should note the pattern of the burn (immersion, splash, pour, or contact) and water temperature measured directly from the faucet. (See figure.) Recommended water heater temperature in homes with young children is 120°; the average in U.S. homes is 140°.

Impact of Water Temperature

From: *Child Maltreatment: A Clinical Guide & Reference*, 1994

Temp (F)	Time to Scald (Adult)
120	5-10 minutes
125	2 minutes
130	30 seconds
135	10 seconds
140	5 seconds
145	3 seconds
150	1-5 seconds
155	1 second or less
158	< 1 second

Fig. 4.11: Water temperature and scalding time chart.

Any Recent Car Crash

If the infant was involved in a recent car crash, the investigator should determine whether or not medical attention was sought and where. If the police responded to the crash, the accident report should be reviewed. If not, the circumstances of the crash should be described in detail, including whether or not the infant was in an approved safety seat and sustained any injury.

Any Recent Submersion in Water

For episodes of submersion or near-drowning in the 72 hours prior to a sudden death, particularly if there was no medical care sought in the aftermath of such an event, detailed history is mandatory. Under what circumstances did the episode occur? What was the timing of the episode? What action was taken? What was the infant's behavior immediately after the submersion? Were there any changes in the infant's usual behavior in the subsequent 72 hours?

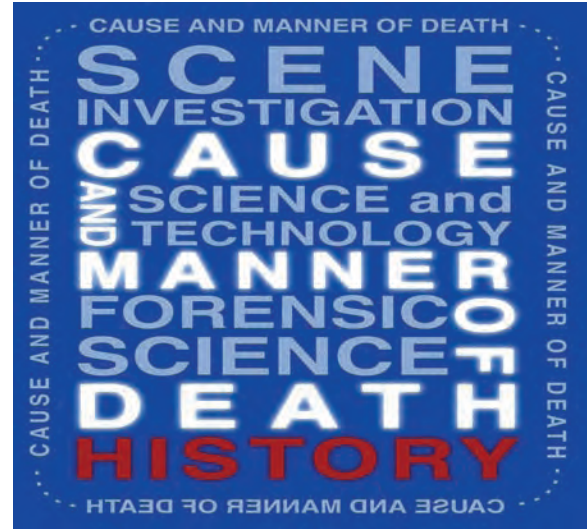
Medical Treatments

The investigator should document all medical treatments, including immunizations, medications, or traditional cultural treatments, that were administered to the infant in the past 72 hours. Each must be considered by the pathologist prior to autopsy as possible contributors to the death of the infant. The infant may have had an allergy or sensitivity to those treatments.

In addition to treatments, obtain the name of the healthcare facility that administered the immunization, and obtain a copy of the record. If medications were given, ask caregivers what medication was given, for what reason, the dosage, and the time. Ask to see the packaging of the medication, and collect it, if necessary.

INFANT MEDICAL HISTORY						
1 Source of medical information: <input type="checkbox"/> Doctor <input type="checkbox"/> Other healthcare provider <input type="checkbox"/> Medical record <input type="checkbox"/> Mother/primary caregiver <input type="checkbox"/> Family <input type="checkbox"/> Other: _____						
2 In the 72 hours prior to death, did the infant have:						
		Unknown	No	Yes		Unknown No Yes
a) Fever.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	h) Diarrhea	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b) Excessive sweating.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	i) Stool changes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
c) Lethargy or sleeping more than usual...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	j) Difficulty breathing.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
d) Fussiness or excessive crying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	k) Apnea (<i>stopped breathing</i>)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
e) Decrease in appetite.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	l) Cyanosis (<i>turned blue/gray</i>).....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
f) Vomiting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	m) Seizures or convulsions	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
g) Choking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	n) Other, specify _____	
3 In the 72 hours prior to death, was the infant injured or did s/he have any other condition(s) not mentioned?						
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇨ Describe: _____						
4 In the 72 hours prior to the infants death, was the infant given any vaccinations or medications? (Please include any home remedies, herbal medications, prescription medicines, over-the-counter medications.)						
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇨ List below:						
Name of vaccination or medication	Dose last given	Date given			Approx. time	Reasons given/ comments:
		Month	Day	Year	Military Time	
1. _____	_____	_____	/	_____/	_____	_____
2. _____	_____	_____	/	_____/	_____	_____
3. _____	_____	_____	/	_____/	_____	_____
4. _____	_____	_____	/	_____/	_____	_____

Fig. 4.12: Recent physical and medical issues should be documented during interviews with the caregiver and/or the appropriate healthcare provider.



11

unit

Medical Information and Pregnancy History

INTRODUCTION

Interviewing the primary caregiver to determine any recent medical treatments administered within the past 72 hours is essential to the investigation. However, the investigator may have to contact others, such as the infant's healthcare provider or doctor to gather additional medical information about both the birth mother and infant.

DOCUMENT MEDICAL HISTORY

Every infant's prenatal environment affects his or her capability to thrive postnatally. Important factors, particularly in relation to a diagnosis of SIDS, include maternal age; lack of prenatal care and related problems with inadequate nutrition, anemia, and untreated infection; and maternal use of tobacco, alcohol, or other drugs. According to the Triple Risk Model of SIDS (Kinney and Filiano), a constitutionally vulnerable infant—possibly a combination of abnormalities sustained in the womb with environmental stresses at a vulnerable postnatal time—could result in a sudden death.

Reviewing medical records might seem cumbersome to those who are not familiar with the organization of such documents, but most charts follow a predictable format, and information can be found if one is familiar with how they are organized. This format varies slightly, but most medical records follow the “SOAP” format:

- **Subjective:** the caretaker's description of the reason for the visit.
- **Objective:** observations and/or signs elicited by physical examination.
- **Assessment:** diagnosis or differential diagnosis of the presenting complaint based on the history and physical findings.
- **Plan:** additional diagnostic laboratory or radiology studies and/or a specific therapeutic strategy with follow-up.

In the **clinic chart**, there generally will be a few pages in the front documenting basic demographic information, birth history, immunizations, and ongoing medical issues such as allergies, specific diagnoses, and prescribed medications. Well child care visits likely will be recorded chronologically and will include information about the infant's growth, development, feeding, and sleeping patterns. Documented “ill visits” might be recorded in the same section of the chart or might be placed in another area. Growth rate will be recorded on a specialized chart designed to track growth.

Records of hospitalizations are arranged somewhat differently. Specific sections usually are tabbed for easy reference. After the pages of demographic and insurance information, near the front of the file should be a document labeled “**H&P**” (History and Physical). This is a summary of why the infant was presented for admission and generally follows the SOAP format. What follows are pages of “**Progress Notes.**” This part of the chart is a day-to-day narrative of what transpired during the admission. These notes are recorded chronologically by any physicians, therapists, or other professionals rendering care during the hospital stay. In the case of physician's notes, they generally follow the SOAP format. Notes from respiratory therapy, physical therapy, nutrition services, and others may be more narrative in character. All should be labeled by discipline. Specialty consultations may be recorded in the progress notes, but in many cases also have a specific tabbed area of the chart where they may be filed.

A section for **laboratory and radiology** studies usually comes next, followed by **nursing notes**. The importance of a close study of the latter cannot be overemphasized. This area of the chart holds a great deal of information beyond the basics of medical care documented in the progress notes. Nursing notes typically document subtle but important issues such as observations of the infant while awake and sleeping; objective assessments of breathing patterns and how well or poorly an infant feeds; corroboration or refutation of “spells” as described by caregivers; and visits and interactions with caregivers, other family members, and visitors. All in all, nursing notes tend to be a rich data source in investigating these difficult cases.

All Immunizations (Shots)

Obtain this information from a medical source, if possible. For example, a card kept by the caregivers from the medical record/facility. The information and its source should be verified. The medical record should indicate the dates, times, locations, and types of immunizations administered.

All Allergies

This information should be documented but interpreted with caution. Lay persons and healthcare providers alike attribute a wide variety of infant behaviors to “allergies.” There is no research or clinical literature attributing SIDS to allergies, but under the right circumstances, an infant’s exposure to a proven allergen could be a factor in his or her death.

History of Apnea

Apnea—cessation of respiratory effort—is an investigative red flag that should prompt a careful record review. Infants known or alleged to have had recurrent episodes of apnea generally have had extensive medical work-ups, including neurology, cardiology, and pulmonary medicine and perhaps other consultations. EEGs, neuroimaging studies, EKGs, Holter studies, sleep studies, and metabolic screens might be on file. Some infants with apnea histories might be on monitoring devices at home, although their use is less common today than in the past. This equipment should be obtained and examined.

History of Cyanosis

The finding of cyanosis, likewise, usually will have prompted detailed medical evaluation, including many of the studies listed above under apnea. A well-documented history, whether cyanosis is specifically diagnosed or not, should be prominently conveyed to the autopsy pathologist so that he or she can lend proper focus to subtle abnormalities of the cardiovascular, pulmonary, and central nervous systems.

History of Seizures

Determine if the infant has experienced any acute cyanosis or rapid onset of discoloration of the skin due to lack of oxygen getting to the blood and seizures.

History of Heart Problems

A caregiver’s interview may yield nothing more specific than the phrase “heart problems.” This becomes more likely with the increasing complexity of the cardiac issue. The medical record review should shed light on whether or not one is dealing with an “innocent,” asymptomatic murmur or complex congenital heart disease. Reports of all diagnostic studies regarding the heart should be obtained for review by the autopsy pathologist. Obtaining a family history of infant and childhood heart conditions is essential—check the medical records.

The differential diagnosis of sudden cardiac death in infancy includes several entities that can escape diagnosis during life, even when diligently sought. Some examples include myocarditis, anomalous coronary artery ostia or courses, lesions of the atrioventricular node or conduction pathways, and ion channel disorders comprising the various types of prolonged QT syndrome.

History of Metabolic Disorder

All 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands currently mandate metabolic screening of newborns, and this information usually is available through a central registry. State newborn screening systems were the first and are the largest genetics programs for children. Many states include exemptions for parents who object to genetic testing for religious or other reasons. Consult your own state’s statute; the scope of such screening varies greatly from state to state. In individual cases, there might have been more detailed screening or diagnostics as part of a medical evaluation of a specific infant. Several inborn errors of metabolism have been recognized as potential causes of SUID, and more are likely to emerge.

Previous Child Death(s) in Family

Multiple infant deaths occurring in the same family due to natural causes are rare. The investigator needs to determine if other children have died while under the care of the same individual or individuals.

History of Medical Issues

The investigator should ask the primary caregiver or appropriate health professional if the infant suffered from or had a history of any chronic health-related problems. This ranges from such things as allergies and/or abnormal growth to seizures and/or birth defects.

INFANT MEDICAL HISTORY				
5 At any time in the infant's life, did s/he have a history of?				
	Unknown	No	Yes	Describe:
a) Allergies (food, medication, or other)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
b) Abnormal growth or weight gain/loss.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
c) Apnea (stopped breathing).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
d) Cyanosis (turned blue/gray).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
e) Seizures or convulsions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
f) Cardiac (heart) abnormalities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
g) Metabolic disorders.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
h) Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____
6 Did the infant have any birth defects(s)? <input type="checkbox"/> No <input type="checkbox"/> Yes				
Describe: _____				

Fig. 4.13: Document infant medical history.

DOCUMENT BIRTH HISTORY

Infant's Birthdate and Gestation

Record the infant's date and location of birth, including the address, city, and state of the hospital or other birth location. A single infant in a household does not automatically mean a single pregnancy. It is important to inquire whether the infant was a singleton, twin, triplet, or higher. The womb can become a crowded place. More occupants mean a smaller birth weight for each infant and a higher risk for premature birth, both of which are independent risk factors for SIDS. Unfortunately, all multiple-gestation pregnancies are higher risk to some extent, and not all the newborns may survive.

Birth Complications

The more time from the date of birth, the less likely a birth injury will contribute to or cause death. However, despite the time interval, this information remains critical, particularly if the pathologist uncovers trauma that is "claimed" to represent birth trauma.

Any Congenital Abnormalities or Birth Defects

A congenital abnormality might or might not be a cause of or contribute to a SUID. It is, however, an important element of every infant's medical history that must be considered by the physician certifying the cause and manner of death. Not all such defects or syndromes will be readily apparent by simply looking at the infant and, therefore, need to be specifically queried.

Essential details include the following:

- **Type of defect or syndrome, if present:** Is this an isolated physical defect such as a ventricular septal defect or cleft palate, or is it part of a more complex genetic syndrome such as Trisomy 21 (Down syndrome), 23 XO (Turner's syndrome), etc.? Does the infant have a known metabolic disease requiring specific feeding practices or replacement therapy?
- **Document treatments:** Specialists providing focused treatment for congenital issues might not be identified as the primary healthcare provider. Details of a specialist's involvement and contact information should be investigated and documented. For

rare, unusual diagnoses, care usually will be rendered by a referral facility that might not even be in the same state. Jurisdictionally, this might present problems in procuring records, depending on the philosophy of the medical center in question. Be prepared to have caregivers sign release-of-information forms to cover this, if necessary.

8 Birth hospital name: _____	
Street _____	
City _____	State _____ Zip _____
Date of discharge _____ / _____ / _____ Month Day Year Months	
9 What was the infant's length at birth? _____ inches or _____ centimeters	
10 What was the infant's weight at birth? _____ pounds _____ ounces or _____ grams	
11 Compared to the delivery date, was the infant born on time, early, or late?	
<input type="checkbox"/> On time <input type="checkbox"/> Early—How many weeks early? _____ <input type="checkbox"/> Late—How many weeks late? _____	
12 Was the infant a singleton, twin, triplet, or higher gestation?	
<input type="checkbox"/> Singleton <input type="checkbox"/> Twin <input type="checkbox"/> Triplet <input type="checkbox"/> Quadruplet or higher gestation	
13 Were there any complications during delivery or at birth? <i>(emergency c-section, child needed oxygen)</i>	
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Describe the complications: _____	

14 Are there any alerts to pathologist? <i>(previous infant deaths in family, newborn screen results)</i>	
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Specify: _____	

Fig. 4.14: Infant birth history is documented for the forensic pathologist.

DOCUMENT RECENT VISITS/CONTACTS WITH HEALTHCARE PROVIDERS

The investigator should ask the primary caregiver when the infant was last seen by a physician or healthcare provider. It is important to document the name and contact information for the treating physician and/or the facility where the visit took place. If any treatment was administered, the investigator should document the action taken and any follow-up activities that occurred or were suppose to occur.

When speaking with the caregiver, the investigator should be sure to ask about any and all visits to emergency departments or clinics outside the "mainstream" healthcare system. This includes visits to the neighborhood doctor, who may or may not be a physician.

Reason for Recent Visit/Contact

It is important to note any vaccinations that the infant may have received. Determine symptoms that prompted medical attention, particularly those leading to the prescription of medication. This may include mild cold symptoms, inconsolable crying, or an observed 30-second episode of apnea or seizure activity. Ask the caregiver to tell you exactly what he or she told the healthcare provider, as accurately as he or she can remember.

Action Taken

This should include a description of any laboratory or radiological studies that were done and any medications or feeding changes prescribed. Especially important is the documentation of medications given to the infant within 72 hours of death. Included in your inquiry should be over-the-counter medications and any herbal or home remedies. Exactly how, and in what amount and frequency, any medications were administered should be specifically documented

and compared to any instructions issued by the healthcare provider, and the medications should be obtained.

Outcome of Visit

Ask whether the symptoms for which they sought attention had abated or improved. How did the infant tolerate the medication and/or new feeding regimen? What was the follow-up plan?

INFANT MEDICAL HISTORY		
7 Describe the two most recent times that the infant was seen by a physician or health care provider: <i>(Include emergency department visits, clinic visits, hospital admissions, observational stays, and telephone calls)</i>		
	First most recent visit	Second most recent visit
a) Date	____/____/____ month day year	____/____/____ month day year
b) Reason for visit.....	_____	
c) Action taken.....	_____	
d) Physician's name.....	_____	
e) Hospital/clinic.....	_____	
f) Address.....	_____	
g) City.....	_____	
h) State, ZIP.....	_____	_____
i) Phone number.....	(____) _____ - _____	(____) _____ - _____

Fig. 4.15: The two most recent visits to a physician or healthcare provider are documented on the investigative scene form.

DOCUMENT HEALTHCARE PROVIDER'S INFORMATION

The written medical record, as valuable as it is, can be augmented greatly by a conversation between the medicolegal investigator and the primary healthcare provider. Progress notes and office visit notes are simplified versions of what might have been complex encounters. Grief-stricken caregivers are not likely to remember addresses, phone numbers, or even names of providers at the time of the initial interview. What they may have, however, are appointment reminder cards, immunization records, prescription bottles, or baby care literature stamped with their provider's name, address, and phone number.

Name of Healthcare Provider

It is not uncommon for infants to have multiple healthcare providers operating out of the same office or multiple locations. The investigator should attempt to document all healthcare providers who have professional information regarding the health of the infant as well as parent or caregiver involvement in the infant's overall health. The name and contact information for each provider should be documented in the case report. Healthcare professionals can provide the investigator with the number of prior visits, the reason for visits, any treatment(s) provided, the outcome of visits, and any recommendations for future follow-up. Also, the pathologist will want to know whether the infant had any abnormal health conditions that may have played a role in the death.

Location of Building Where Visit Took Place

The investigator should bear in mind that there might be more than one practice location for a given provider group. Investigate the possibility that infant medical records may or may not be at each facility.

Name of Clinic or Hospital

The investigator should not forget the possibility of visits to facilities other than that of the primary healthcare provider, including hospital admissions.

Any Noncompliance with Recommended Therapies/Instructions

This is a potentially complex and sensitive area that must be approached with care. If a medication was prescribed but not administered, this should be documented in your report. There may be explanations for such an occurrence, but these should be made known to the autopsy pathologist. Typically, caregivers of an infant sent home after what is perceived to be a minor head injury will receive detailed instructions, usually in writing. Any reason for noncompliance with these instructions should be obtained.

Consulting the birth mother may not be possible at the time of the initial investigation, but permission to procure the infant's birth records is essential nevertheless. The investigator should seek to capture the following either by interview or by later review of medical records:

- Name and location of birth hospital.
- Date and time of birth.
- Date and time of discharge.
- Infant's birth length and weight.
- Born "on time"? (i.e., was the infant premature or postdate?)
- Vaginal vs. Caesarean delivery.
- If infant is a singleton, twin, triplet, or quadruplet.
- Complications of labor and delivery (e.g., emergency Caesarean delivery needed, infant needed oxygen at birth, was admitted to the neonatal intensive care unit).

DOCUMENT PREGNANCY HISTORY

The history of the mother's pregnancy could be important in ascertaining whether there were any problems or incidents during that period that could contribute to the infant's death at this time. All information gathered should be documented for use by others conducting this investigation.

Prenatal care is important for a pregnant woman as it will help identify any fetal problems quickly and permit any conditions to be treated as soon as possible. Prenatal care includes genetic counseling, prenatal diagnosis, fetal-development assessment, and early detection of pregnancy complications.

Complications during a woman's pregnancy can be devastating to the mother and the infant. Some complications require that the mother be placed on bedrest for an extended period of time. Other complications might include bleeding, cramping, and hypertension. If medications are required to alleviate the complications, careful monitoring of the drug levels must be done to ensure that the infant is protected.

Injuries during pregnancy could ultimately affect the health of both the mother and the infant. Depending on the nature of the injury, you might also be dealing with issues of criminality or civil liability if the injuries were in any way related to or could be related to injury of the fetus that consequently resulted in the death of the infant. Reviewing the mother's pregnancy history will provide information on any successful births and any problematic pregnancies that might have affected the health of the mother or this infant.

The medications that people take can have a positive or negative effect on the patient. Allergies or unexpected reactions to known or new drugs can significantly affect the health of the mother and consequently the health of the developing fetus.

Birth Mother Information

The identity of the birth mother must be determined so that an accurate pregnancy history can be obtained. The treating obstetrician, hospital of delivery, and possibly a police report should be investigated and documented. Determine who the birth mother is by asking knowledgeable

persons at the scene of death or hospital. Document her full name and date of birth, along with her maiden name in case she was using her maiden name when receiving prenatal care. This information will facilitate the collection of records from multiple sources.

PREGNANCY HISTORY									
1 Information about the infant's birth mother:									
First name _____	Middle name _____								
Last name _____	Maiden name _____								
Date of Birth: _____ / _____ / _____	SS # _____ - _____ - _____								
Month	Day	Year							
Current Address: _____	City _____ State _____ Zip _____								
How long has the birth mother been a resident at this address? _____	and _____	Previous Address _____	State _____ Zip _____						
Years	Months	City _____	State _____						
2 At how many weeks or months did the birth mother begin prenatal care?									
_____ Weeks	_____ Months	<input type="checkbox"/> No prenatal care	<input type="checkbox"/> Unknown						
3 Where did the birth mother receive prenatal care? (Please specify physician or other health care provider name and address.)									
Physician/ provider _____	Hospital/ clinic _____	Phone (____) _____							
Street _____	City _____	State _____	Zip _____						
4 During her pregnancy with the infant, did the biological mother have any complications? (ex. high blood pressure, bleeding, gestational diabetes)									
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Specify: _____									
5 Was the biological mother injured during her pregnancy with the infant? (auto, accident, falls)									
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Specify: _____									
6 During her pregnancy, did she use any of the following?									
	Unknown	No	Yes	Daily consumption		Unknown	No	Yes	Daily consumption
a) Over the counter medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	d) Cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b) Prescription medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	e) Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Herbal remedies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
7 Currently, does any caregiver use any of the following?									
	Unknown	No	Yes	Daily consumption		Unknown	No	Yes	Daily consumption
a) Over the counter medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	d) Cigarettes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b) Prescription medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	e) Alcohol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Herbal remedies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	f) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Fig. 4.16: The Pregnancy History section of the SUIDI Reporting Form.

Prenatal Care

The investigator should determine whether the mother received any prenatal care. This can be provided at a multitude of places. Private physicians (obstetricians) provide prenatal care in their offices for a fee that routinely is covered by the mother's medical insurance. If a woman does not have insurance, she may choose to receive prenatal care through a community clinic. Clinics may be located in hospitals or in freestanding health centers. The investigator should also document the doctor's contact information for any follow-up that the investigation may require.

Medications Taken during Pregnancy

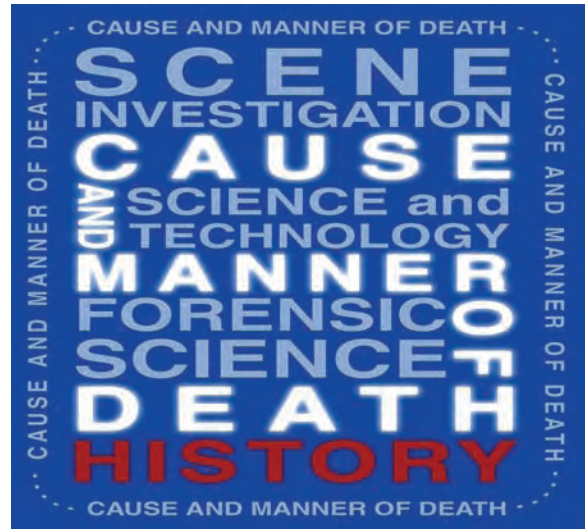
The investigator should ask the birth mother or other knowledgeable person whether the mother took any prescription or over-the-counter (OTC) medications. This information should be documented in the investigative report. If the medication bottles/containers are available, the investigator should document the prescription information. If unavailable, the investigator should contact the treating physician to collect medical records. The investigator should document as much as possible about the OTC medications or herbal remedies, including the following items:

- Name of medication, OTC medication, or herbal remedy.
- Dosage.
- Prescribing physician and contact information.
- Date prescribed.

- Amount prescribed.
- Amount present.
- Name and contact information for pharmacy.
- Method of administration.
- Amount of drug, OTC, herbal remedy taken.
- Frequency of administration.

Use of Tobacco Products or Alcohol Consumption

The investigator should discuss the topic of tobacco and alcohol use/consumption with the mother. Because of the stigma attached to these habits, there might be reluctance to discuss these topics honestly. However, every effort should be made to document and confirm the answers given with other family members and/or with the mother's physician. Be observant; look around the scene for evidence of alcohol and tobacco use.



12

Dietary and Feeding Information

unit

INTRODUCTION

Infants may die while bottle feeding, breastfeeding, or eating solid foods. These deaths could be due to accidental suffocation by material or objects used to prop the bottle, asphyxia secondary to choking (obstructive suffocation) due to an inappropriate amount or type of food or liquid given to the infant, an acute allergic reaction, or an accidental poisoning. Alternatively, an infant may die some time after he or she has been fed, and the temporal relationship between the infant's diet and his or her death may not be as apparent. Therefore, it is important to document information concerning what the infant was fed in the 24 hours prior to death in order to establish whether the infant may have died as a result of what or how he or she was fed or what he or she accidentally ingested. An investigator may want to determine when the infant was last fed (date, time), who last fed him or her (name, relationship to the deceased infant), and the foods and liquids that the infant was last fed (type of food, quantity). Food or liquid introduced into the infant's diet for the first time should be documented because new foods, especially age-inappropriate foods, can pose a choking risk. Alternatively, the infant may have had an allergic reaction to the new food.

DIETARY AND FEEDING DATA COLLECTION

Breast Milk or Infant Formula

The investigator should remember that infants typically are fed only breast milk and/or infant formula for the first four to six months. For formula fed infants, ask how much was given (quantity in ounces), what brand of infant formula was used, what water source was used to mix the formula (e.g., tap, well, or bottled water), and what brand of bottled water was used, if applicable. The investigator should ask whether there was a change in infant formula in the 24 hours before the infant's death. If there was a change in infant formula, this information should be recorded. For breastfeeding infants, the investigator should ask whether the infant fed on both sides and the length of time that the infant fed.

Cow's Milk

Typically, children are not given cow's milk until after their first birthday because this milk does not have sufficient nutritional content and may trigger food allergies. However, infant formula is expensive and some parents choose to introduce cow's milk at an earlier age. It is important to ask how much cow's milk was given (quantity in ounces) and the brand of milk given. The investigator should collect a sample of the cow's milk, if it is available.

Water

Infants of all ages may be given water. It is important to ask how much water was given (quantity in ounces), what type of water was given (e.g., tap, well, or bottled water), and the brand of bottled water, if applicable. The investigator should collect a sample of the water.

Other Liquids

Infants of all ages may be given liquids other than milk or water. The parent or caregiver may not volunteer this information. It is important to ask whether the infant received other liquids such as tea, juices, or herbal drinks. If he or she did receive other liquids, the investigator should ask how much was given (quantity in ounces), the type of liquid given, and what brand of liquid was given, if applicable. The investigator should collect a sample of the liquid, if available.

Solid Foods

Infants typically are first given solid food between four and six months of age. Developmentally, most infants are not ready for solid food before four months. It is important to ask what solids were given to the infant (e.g., raw carrots, pureed peas, chopped meat), how much was given (e.g., how many tablespoons), and the brand of food given, if applicable. The investigator should ask whether a new solid food was introduced in the 24 hours before the infant's death.

Other

The investigator should ask whether anything else was given to the infant during the last meal. Perhaps the infant ingested a special herbal remedy or other solid or liquid that might not be considered "food." The bottom line is that the investigator needs to get a list of everything that the infant ingested/ate during the 24 hours before death. Also, he or she should ask whether there was anything unusual about the last feeding.

New Foods

The investigator should document whether a new food or liquid was introduced into the infant's diet during the 24 hours before the infant's death. This is important in establishing whether the infant died due to suffocation secondary to choking or poisoning on a solid food given for the first time, or whether the infant had an allergic reaction to the new food or liquid that was introduced. Data that should be collected include the type of food or liquid introduced, the amount, and the brand if applicable. The investigator should remember to collect samples of all solid foods and liquids that were introduced in the 24 hours prior to the infant's death.

It is important that the investigator interviews a parent, usual caregiver, or someone who typically fed the infant and would know whether a new food or liquid was introduced into the infant's diet in the 24 hours prior to death. It will not be helpful to interview someone who is unfamiliar with the infant's dietary history.

1 On what day and at what approximate time was the infant last fed?						
____/____/____ :____						
Month Day Year Military Time						
2 What is the name of the person who last fed the infant? _____						
3 What is his/her relationship to the infant? _____						
4 What foods and liquids was the infant fed in the last 24 hours (include last fed)?						
	Unknown	No	Yes	Quantity	Specify: (type and brand if applicable)	
a) Breast milk (one/both sides, length of time)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____ ounces	_____	
b) Formula (brand, water source - ex. Similac, tap water) ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____ ounces	_____	
c) Cow's milk.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____ ounces	_____	
d) Water (brand, bottled, tap, well)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____ ounces	_____	
e) Other liquids (teas, juices)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____ ounces	_____	
f) Solids.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____	_____	
g) Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	⇒ _____	_____	
5 Was a new food introduced in the 24 hours prior to his/her death?						
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Describe (ex. content, amount, change in formula, introduction of solids)						

6 Was the infant last placed to sleep with a bottle?						
<input type="checkbox"/> Yes <input type="checkbox"/> No ⇒ Skip to question 9 below						
7 Was the bottle propped? (i.e., object used to hold bottle while infant feeds)						
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ What object was used to prop the bottle? _____						
8 What was the quantity of liquid (in ounces) in the bottle? _____						
9 Did death occur during? <input type="checkbox"/> Breast-feeding <input type="checkbox"/> Bottle-feeding <input type="checkbox"/> Eating solid foods <input type="checkbox"/> Not during feeding						
10 Are there any factors, circumstances, or environmental concerns that may have impacted the infant that have not yet been identified? (ex. exposed to cigarette smoke or fumes at someone else's home, infant unusually heavy, placed with positional supports or wedges)						
<input type="checkbox"/> No <input type="checkbox"/> Yes ⇒ Describe concerns: _____						

Fig. 4.17: The Infant Dietary History section of the SUIDI Reporting Form.

The investigator should remember to probe on foods that are most likely to cause choking or allergic reactions by the infant. Solid foods that may cause choking include those that are round, hard, and difficult to dissolve in saliva, such as nuts, seeds, hard candies, round candies, grapes, raw carrots, popcorn, and hot dogs. Foods that commonly cause allergic reactions in the United States include dairy products (e.g., cow's milk), eggs, nuts, peanuts, wheat, soy, corn, shellfish, and fish. These are the most common foods that could cause a life-threatening systemic (whole body) reaction (e.g., shock, difficulty breathing, swelling in the mouth and throat, and stomach or digestive problems).

The investigator should be sure to ask about the quantity of liquids given because infants might choke and aspirate liquids if they are given too much (e.g., leaving a young infant unattended with a propped bottle). The investigator also should ask about liquids such as dairy products (e.g., cow's milk) that may have led to a life-threatening allergic reaction.

OTHER INVESTIGATIVE ISSUES

Died while Feeding

Although it is rare for an infant to die while being fed, this can occur. Death during feeding can happen during breastfeeding or bottle feeding and not be discovered or noticed by the feeder. Death can occur due to choking and asphyxia, an allergic reaction, or mechanical suffocation by an object used to prop or support a bottle. To determine if the infant may have become unresponsive and died during feeding, the person who last fed the infant needs to be identified and interviewed.

If the infant was placed to sleep with a bottle for his or her last sleep before death, the person who placed the infant to sleep should be interviewed. The investigator should ask this person if the infant died while feeding. This is a difficult question to ask, but it will help determine the cause of death. The investigator should ask what the bottle contained and how many ounces were in the bottle when it was given to the infant. The bottle and its contents should be collected for testing. The investigator should ask the person being interviewed if the bottle was propped, and if so, what object was used to prop the bottle. This is important because the object used to prop the bottle may have accidentally suffocated the infant. For example, did the person use a baby pillow, a doll, an adult-sized pillow, a blanket, or a book? The investigator should ask the person where the item used for propping was placed. For instance, was the item used for propping placed on the infant's chest, or was it placed next to the infant's head on the sleep surface and the infant's head was turned to the side?

The investigator should document whether the bottle was still present at time of death. In some infant death cases, the infant is actually observed becoming unresponsive (e.g., "She just stopped breathing.") In such cases, whether or not the bottle was present at the time of death can help verify if the infant was being fed just before time of death.

The investigator should also document the time when the infant was placed in bed with the bottle, and he or she should ask the person being interviewed where it was located in relation to the deceased infant when it was found.

Summary

DISCUSSION QUESTIONS

1. Why is it important to obtain an infant's dietary history in the 24 hours before death?
2. What types of solid foods are associated with choking? Describe the types of food and give examples.
3. Why is it important to ask whether a new food was introduced in the 24 hours before death?
4. What are the common causes of food allergies? List the main categories of food.
5. Why is it important to ask about bottle propping?
6. What is the risk associated with bottle propping?

SAMPLE QUESTIONS

1. All of the following are important for documenting the last 24 hours of feeding EXCEPT:
 - A. Identify the source of information.
 - B. Document whether any siblings ate the same things as the infant.
 - C. Document the date and time of the last feeding.
 - D. Document the name of the person who last fed the infant.
2. Why is it important to document the last 24-hour feeding information?
 - A. To establish whether the infant might have died due to obstructive suffocation secondary to choking.
 - B. To determine whether the caregivers were feeding the infant age-appropriate foods.
 - C. To assess whether the infant's nutrient intake was adequate
 - D. To determine whether the infant liked what he or she was fed.
3. When determining whether the infant was placed to sleep with a bottle, which of the following is most important to ask?
 - A. Had the infant slept with a bottle before?
 - B. Was the bottle propped up by anything?
 - C. Which brand of infant formula was used?
 - D. What time did the infant go to sleep with the bottle?
4. What is/are the most likely reason(s) an infant might die while being fed?
 - A. Accidental suffocation by the breast.
 - B. Choking and asphyxiation due to inappropriate amount or type of food/liquid given to the infant.
 - C. Foodborne illness (i.e., salmonella, botulism, etc.)
 - D. A and B.
5. Which of the following are common causes of food allergies?
 - A. Dairy products, nuts, wheat, corn, soy, and shellfish.
 - B. Chicken, turkey, ham, and roast beef.
 - C. Carrots, tomatoes, broccoli, and spinach.
 - D. Orange juice, apple juice, cranberry juice, and grape juice.