

Appendix 108
April 12, 1993

INFANT SUFFOCATIONS

I. INTRODUCTION

A. Background Information

Each year about 200 infants die of suffocation on consumer products. Some suffocation deaths may not be identified because they are diagnosed as Sudden Infant Death Syndrome (SIDS). There are about 6,000 SIDS deaths reported annually.

Investigations of SIDS and suffocation deaths may help to identify soft bedding and other products that could be involved in suffocating infants under one year of age, and the mechanisms causing the suffocation. Knowledge of such factors can serve as a valuable tool in the evaluation of sleeping/resting surfaces and other nursery-related items so that appropriate actions can be taken.

B. Product Class Description

Definitions and General Description

Includes all sleeping/resting surfaces and items used on these surfaces. Products in contact with the infant's face or head are of interest.

The term "bedding" includes such items as mattress pads, sheets, blankets, quilts, etc. The term "mattress" includes such items as adult mattresses, youth mattresses, crib mattresses including portable crib mattresses, day bed mattresses, trundle bed mattresses, and convertible sofa bed mattresses.

C. Specific Items of Interest

1. Of primary interest is the victim's head and body position, specifically in relation to the sleeping surface, bedding items, or other products that may have been involved. A detailed description of the products involved is also extremely important.
2. Remember that no guideline can cover all pertinent factors that may apply to a particular death. Be sure to include an explanation of any such factors in your narrative, even if we have not specifically mentioned them in the guidelines. As a supplement to the narrative, a data recording sheet has been included to record specific items of interest.

3. See Section IV, Instructions for Obtaining Samples and Documents Related to the Investigation for specific instructions particular to this study.

D. Headquarters Contacts

Dr. N.J. Scheers, EPHA - (301) 504-0470
Manon Boudreault, EPHA - (301) 504-0470

II. INSTRUCTIONS FOR COLLECTING SPECIFIC INFORMATION

Note: Complete and attach a data recording sheet with each investigation conducted. The data recording sheet is not to be used in lieu of an in-depth investigation format. Rather it is intended to enhance the investigation, and provide guidance for the investigator. Answer all questions using appropriate unknowns or not applicable responses as needed.

A. Synopsis

Provide a brief description of the circumstances in which the infant was found dead or unresponsive. Include a description of the infant's head and body position, particularly in relation to the sleeping surface, bedding items, or other items that may have been involved. Specify the type of product (e.g., crib, adult mattress, infant pillow, etc.) upon which the infant was found. Note any product failures or deficiencies in design that may have contributed to the incident.

For data retrieval from the computer, please make sure that the following key words are used in the summary as appropriate: face into, covering face, covering mouth, covering nose, face straight down, face up, over infant, under infant, pocket, bedding, broken, restraint.

B. Description of the Incident Environment

- Describe type of housing or other structure (e.g., mobile home, single family detached, apartment) where incident occurred.
- Indicate whether there were any other children or adults present at the time of the incident and describe what they were doing.
- Describe the ventilation conditions of the room, residence, or other site where the incident occurred, as well as the approximate temperature inside at the time the infant was found. Report the temperature setting of the thermostat at the time of the incident and the approximate size of the room where the heater

or ventilator outlet was located.

- Specify energy source and heating appliance or air conditioning source in use at the time of death (use source and appliance terminology listed in the attached data recording sheet).
- Indicate number of individuals who smoke cigarettes, pipes, or cigars as well as amount in the home or other location where infant spends most of his/her time.
- Include in the investigation any pertinent information not covered by the foregoing.

C. Description of the Infant and Product Interaction

1. The following information should be collected (note source).

- Height (inches) and weight pounds/ounces) at birth.
- Whether infant was breast-fed or formula-fed.
- Whether infant was carried to full term or if birth was premature.
- Most recent vaccination.
- If infant had been ill within the past two weeks and any medical treatment received for this, or if it had any injury or major illness since birth.
- Any behavioral characteristics which might be relevant to the death (see data recording sheet).
- Any known physical handicaps or adverse health conditions prior to death.

2. Description of the Mother

The following may have had an impact on the infant's development or will be used in the data analysis and should be included in the report.

- Mother's age.
- Whether mother ingested prescribed or over-the-counter medication or any other drugs during pregnancy and type.
- Maternal tobacco use during pregnancy.
- Highest level of education completed by the mother.
- Annual household income from all sources.

3. Description of the Death Sequence

- Provide a full, detailed, step-by-step description of the death sequence.
- Describe how the infant's interaction with the product may have led to death.

- Specify if any other individuals were resting or sleeping on the same unit.
- Describe infant's face and body position when last seen alive. Note if the infant's head was pressed/tucked towards his chest.
- If infant's nose and/or mouth was in contact with any item describe item and its location. Describe and give dimensions of any visible pocket or cup that had formed in item around infant's face.
- Describe any fluid/substance on the infant's face, the bedding, or on any other item in close proximity to the infant. Specify location of the fluid in relation to the infant and indicate if it was foamy, mucus, bloody, colored, etc.
- Describe infant's face and body position when found dead or unresponsive.
- List all articles of clothing and other accessories (e.g., jewelry) on infant when found.
- List any items (blanket, pillow, toys) under, over, or in close proximity to the infant when found. Describe from closest to furthest from infant. If the item was on the infant's face or the infant's face was straight down into this item, collect information on manufacturer, model, size (if relevant), fiber contents, where obtained, and age of product.
- Indicate if there were any vinyl or other plastic products present that the infant may have come in contact with.

D. Description of the Product

- Describe sleeping/resting unit (e.g., crib, crib mattress, adult mattress, bassinet, etc.) where infant was found, include information on product dimensions, construction materials or sleeping surface, etc. Note any visible damage to surface or accessories and any failures or defects of the sleeping/resting unit.
- Indicate if a depression (sag, indent, or pocket) was observable on the sleeping/resting surface when no object was on it in any area. Indicate location of depression in relation to the infant, and its approximate width, depth, and length.
- Place weighted doll in position found in relation to products and measure width, depth, and length of any pocket or sag that forms under the doll.
- Indicate if the sleeping/resting surface was tilted and its relation to the infant's head.
- Indicate manufacturer, model, size (if relevant), brand, fiber contents, where obtained, and age of

product.

- Report any labeling on the product and photograph it. Describe location, how affixed, colors of lettering and background.
- Describe condition of product(s).
- Provide a description of the part or features of the product which may have contributed to (not necessarily caused or inflicted) the death.
- Identify any labeling indicating certification, testing or conformance with mandatory or voluntary standards. Of particular interest are labels certifying conformance with standards of the Juvenile Products Manufacturers Association (JPMA).

This guideline covers a large group of products. Many of the concerns are generic to the group, but there are some product-specific concerns. These are as follows:

1. Mattresses

- a. Indicate content material (foam, innerspring, other--specify).
- b. Indicate surface material (fabric, vinyl, other-specify) of mattress.
- c. Indicate if any other material was used as a mattress protector or cover, or for cushioning purposes. Give mattress, pad, and/or cushioning material dimensions. Indicate how well it fits in the crib, bed frame, or other structure.

2. Cribs

- a. Determine if the crib is in compliance with the mandatory crib regulation. Be sure to check dimensions and fit of mattress, construction of end panels, slat spacing, etc. A copy of the crib regulation is attached for reference.
- b. If the incident involved a crib corner post or some sort of catch point on the crib structure or hardware, describe the corner post or catch point and provide dimensions.
- c. If the incident involved head entrapment in the crib structure, provide the dimensions of

the area of entrapment.

3. Crib Bumpers

- a. Indicate if the bumper pads fit around the entire crib and if they tie or snap on to the crib.
- b. Specify how many ties or snaps are in place and the length of the ties.
- c. Specify type of surface material (fabric, vinyl, other--specify) covering bumper pads and inner content material of the pad (foam, batting, other--specify).

4. Bassinets and Cradles

- a. Describe the material from which the bassinet or cradle is made.

III. INSTRUCTIONS FOR PHOTOGRAPHING AND/OR DIAGRAMING FACTORS RELATED TO THE INVESTIGATION SEQUENCE

Photographs desired, in order of preference:

1. Undisturbed infant,
 2. Doll or mannequin in position occupied by infant,
 3. Arrow or marker indicating where the infant was found, emphasizing presence or absence of wedging, cupping, or other entrapment of the head and/or face.
- Simulate the positioning of the infant and surrounding items using a doll. Photograph the product involved in the death, be sure to include a clear and labeled view of any components which are defective or improperly installed or maintained. Also, photograph any labeling present on the product such as certification emblems, warnings, or instructions for use or installation.
 - Include a diagram or sketch of the floor plan of the incident location, including the location of the product(s), area where the infant was found and location of doors, windows, or other openings that may normally provide some ventilation for the residence.
 - Photograph all features of the physical environment directly involved in the incident.
 - Diagram the position of the infant and product(s) when found. If multiple products are involved, describe

position from closest to furthest from infant.
Describe layered products in the order found, from
closest to furthest from infant.

- Provide a photograph, diagram and/or description of the product, sufficient that Compliance or Engineering might identify it if necessary.
- If the scene was re-created for photographs, indicate who helped recreate the scene.

IV. INSTRUCTIONS FOR OBTAINING SAMPLES AND DOCUMENTS RELATED TO THE INVESTIGATION

Samples should be obtained for those cases in which the infant's face was found straight down into a product, the product was on the infant's face, or if the infant's face was turned to the side (nose and mouth need not be obstructed). Products that are very close to, or near the infant's face that may have been involved should also be collected. If the sample has been discarded or the individual does not want to give, sell, or loan the sample to CPSC, investigators should purchase an exemplar sample only if it is an exact replica.

If there is a layering of products, collect all products above a non-permeable surface or above an intact mattress. Collect non-permeable products if the surface is damaged or torn. Collect crib mattress in addition to other products if the surface material is damaged, or if there was any observable sagging under the infant. If the infant was found in a bassinet or other small item, collect the entire product.

Products (e.g., crib mattress and/or bedding items) should be sent if the following criteria are met:

1. The owner voluntarily agrees to provide the product for testing,

2. The cost of the product sample does not exceed \$75.00 for regional offices,

3. The condition of the product is the same as it was at the time of death.

- Sofas, adult size beds/mattresses, and cribs should not be collected.
- Samples may be borrowed from individuals. Please make sure to note that the sample is "Borrowed" in Block 1 (Flag) of the Sample Collection Report included with the sample. In Block 26 (Remarks), include the name and mailing address.

- Samples collected for this study should be sent to the attention of Warren Porter, Health Sciences Laboratory through the Sample Custodian.
- Medical examiner, police, and autopsy reports should be obtained, when possible. This is especially important in cases where the police or medical examiner has the product.

V. **ADDITIONAL INSTRUCTIONS**

- Identify clearly the source of the information you provide; i.e., the persons with whom you spoke or corresponded about the death. Indicate who provided most of the information for the interview. If the parent is not the actual witness, then the actual witness should be interviewed in addition to the parent.
- If several respondents are available, all should be interviewed regarding position of the infant in relation to the products when last seen alive and position of the infant in relation to the products when found dead or unresponsive.
- There may be conflicting statements from the parents and other observers or investigators. State clearly any conflicting opinions. If you have reason to believe that statements made by any parties are inaccurate, please note and document observed facts that may help to address and resolve questionable opinions.
- Contact the local police department and medical examiners office to obtain a written report. Autopsy and pathology reports should be included in the medical examiner report.
- List other documents obtained and appended (Police Report, Medical Examiner Report).
- To reduce interviewing time, some information may be answered from medical examiner reports, police reports, and/or autopsy reports. The following information may be obtained from the above reports.
 - age (in weeks)
 - date of birth
 - race
 - approximate time of death
 - weight at time of death
 - address and phone number of parents/witnesses

DATA RECORD SHEET

IDI _____
DATE WITNESS _____
INTERVIEWED _____

DEATH SCENE INVESTIGATION OF INFANTS LESS THAN 12 MONTHS OF AGE
DYING SUDDENLY AND UNEXPECTEDLY

I. Description of the Product/Infant Interaction

Pre-Death

1. What is the date and time infant was last seen alive
(use 24 hour clock)?

date _____ time _____

2. Immediately (within one hour) prior to death, had the
infant been in a car seat/carrier for any length of
time?

No _____ Refused _____
Yes _____ (approximate time) Don't Know _____

If yes, give manufacturer, brand, and size.

3. At the time the infant was last seen alive, on what
type of product (e.g., sofa, crib, bassinet, adult bed,
etc.) had the infant been placed?
-

4. At the time of death, was this the usual resting place
(usual location and product) of the infant?

Yes _____ Refused _____
No _____ Don't Know _____

If no, specify usual place (location and product).

5. What was the infant's body position when last seen
alive?

On stomach _____ Other (specify) _____
On infant's side _____ On back _____
Don't Know _____ Refused _____

6. What was the infant's face position when last seen alive?
- Face up _____ Other (specify) _____
 Face "straight" down _____ Don't Know _____
 Face to infant's side _____ Refused _____
7. Were there any other individuals resting or sleeping on the same unit as the infant?
- No _____ Don't Know _____
 Yes _____ Refused _____
- If yes, how many individuals? _____
8. When was the infant last fed?
- Time _____ Type of food (liquid or solid) _____
 Don't Know _____
 Refused _____
9. Is the type of food listed in question number 8 the infant's regular diet?
- No _____ Don't Know _____
 Yes _____ Refused _____
 Not applicable (food not known) _____

Death

10. What is the date and time infant was found dead or unconscious (use 24 hour clock)?
- date _____ time _____
11. Were there any resuscitation attempts?
- No _____ Don't Know _____
 Yes _____ Refused _____
- If yes, by whom?

12. What was the infant's body position when found?
- On stomach _____
 On infant's left side _____
 On infant's right side _____
 On back _____
 Other (specify) _____
 Don't Know _____
 Refused _____

13. What was the infant's face position when found?

Face up _____

Face to infant's right side _____

Face down _____

Refused _____

Other (specify) _____

Don't Know _____

14. Was the infant's head pressed forward towards the chest?

No _____

Don't Know _____

Yes _____

Refused _____

15. Were there any marks, creases, or impressions from bedding or other materials present on the infant's face or head?

No _____

Don't Know _____

Yes _____

Refused _____

If yes, describe location and approximate size.

16. When found, was the infant's nose and/or mouth in contact with any item?

No _____

Don't Know _____

Yes, nose _____

Refused _____

Yes, mouth _____

Yes, both mouth and nose _____

If yes, describe location of contact and item. Include any label information on manufacturer, brand, and fiber/material contents (in the absence of label information, describe material).

17. If the infant's nose and/or mouth was covered or in contact with any item, did a pocket or cup form around its face?

No _____

Don't Know _____

Yes _____

Refused _____

Not Applicable _____

If yes, describe item, give dimensions of pocket.

18. When found, was there any substance (e.g., blood or other fluid) on the infant's face, especially around the nose or mouth?

No _____
Yes _____

Don't Know _____
Refused _____

If yes, specify location and whether substance is foamy, mucus, bloody, colored, etc.

19. Were there any fluids from the infant on clothing, pillow, mattress, blanket, sheet, or other items when found?

No _____
Yes _____

Don't Know _____
Refused _____

If yes, describe (specify item and whether substance is blood or other fluid).

20. If yes to question number 19, was the infant's face in contact with the wet items described in question 19?

No _____
Yes _____

Don't Know _____
Not Applicable
(no wet items) _____

If yes, describe

21. List all articles of clothing including jewelry, and other accessories on infant when found (e.g., plastic diaper, cloth diaper with plastic diaper pants, diaper pins, hats, pierced earrings). Indicate any damage to clothing (e.g., broken zipper, loose pieces, tears, holes) or any missing items on clothing or accessories.

22. List any items under the infant when found (e.g., sheet, mattress pad, rug).

None _____ Don't Know _____
Refused _____

Describe (from closest to furthest from infant) and specify if the infant's face was in contact with this item. Include any label information on manufacturer, brand, and material/fiber contents. In the absence of label information, describe material.

23. List any items (e.g., blanket, quilt) over the infant when found.

None _____ Don't Know _____
Refused _____

Describe (from closest to furthest from infant) and specify if item was on the infant's head. Include any label information on manufacturer, brand, and material/fiber contents. In the absence of label information, describe material.

24. List any other items (e.g., bottles, pacifiers, toys, pillows, bumper pads, blankets, quilts, etc.) in close proximity to the infant's face.

None _____ Don't Know _____
Refused _____

Describe (from closest to furthest from infant)

25. Was there any vinyl or other plastic product present that the infant may have come in contact with?

None _____ Don't Know _____
Yes _____

If yes, specify product and describe.

II. Description of the Products

26. Describe sleeping site (e.g., crib, crib mattress, adult mattress, etc.) and other products involved (e.g., blankets, quilts) where infant was found, include information on product dimensions and materials of construction of sleeping surface/site, etc.

- Note any visible damage to sleeping surface or accessories (e.g., ripped seams, exposed stuffing, loose trim, etc.).
- Note any failures or defects of sleeping/resting unit (structural failure, broken or missing hardware, etc.).

27. Provide the following information for the above item(s) listed in question 26:

Manufacturer _____
Size (if relevant) _____
Brand/Model/Style _____
How Obtained _____
Where Obtained _____
Age of Product _____
Surface material (e.g., fabric, vinyl, other, specify) and filling contents (e.g., batting, foam, other, specify) _____

Any recommendations or warnings listed on label

28. If the infant was found in a crib, were all four mattress support hangers attached to the corner posts and resting properly in the hooks at the time of death?

No _____ Don't Know _____
Yes _____ Refused _____
N/A _____

(not found on a mattress/crib)

If no, describe

29. Did the sleeping surface have a visible depression (sag, indent, or pocket) when no object was on it in any area?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, indicate area(s) and approximate width, depth, and length.

30. Was the infant resting/sleeping on a tilted surface?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, describe where the infant's head was in relation to the tilt.

III. Description of the Infant

31. Birth Weight (lbs./oz.)

32. Was the infant breast-fed?

No _____ Don't Know _____
Yes _____ Refused _____

33. Was the infant carried to full term or was birth premature?

Full Term _____ Don't Know _____
Premature _____ Refused _____

34. Had the infant been ill within the past two weeks?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, describe illness, medical treatment received, and give date of occurrence.

35. Has the infant had any injury or major illness since birth?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, list all injuries and/or major illnesses and date of occurrence.

36. Give a description of the infant's typical sleeping position(s) including body and face position (photograph of doll depicting infant or diagram).

37. Was the infant able to lift his/her head?

No _____ Don't Know _____
Yes _____ Refused _____

38. Was the infant able to roll from back to stomach and stomach to back?

No _____ Don't Know _____
Yes _____ Refused _____

39. Had the infant received any medication (prescribed, over-the-counter, or home remedy) within the last 24 hours prior to death?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, give type, date, and time last given.

40. When was the infant's most recent vaccination?

None ever given _____ Don't Know _____
Refused _____

Indicate if the vaccine was given orally or in a shot.

41. Had any changes occurred in the infant's behavior (e.g., irritable, fussy) or functioning (e.g., ate little, slept more/less, sweaty, diarrhea, etc.) within the past 48 hours?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, describe

42. Are there any other incidents of sudden infant death in the family (other siblings)?

No _____ Don't Know _____
Yes _____ Refused _____

If yes, specify

IV. Maternal History

43. Mother's Age _____

44. Did mother take prescribed or over the counter medication, or any other drugs during pregnancy?

No _____ Don't Know _____
Yes _____ Refused _____
If yes, give type if known _____

45. Any maternal tobacco use during pregnancy?

No _____ Don't Know _____
Yes _____ Refused _____
If yes, give duration and amount _____

V. Description of Environmental Factors

46. Indicate number of individuals who smoke cigarettes, pipes, or cigars in the home or other location where infant spends most of his/her time.

Total number of cigarettes smoked in home or other location per day _____

Total number of pipes smoked in home or other location per day _____

Total number of cigars smoked in home or other location per day _____

47. According to the parent's or care giver's perception, was the room in which the infant was found at the time of death:

Cold _____ Comfortable _____
Hot _____ Don't Know _____
Refused _____

48. Heating or cooling unit was set at what temperature (Fahrenheit) at the time of death?

Heating _____ Cooling _____
Don't Know _____ Refused _____
Turned Off _____ Can't Control _____

49. Energy source(s) in use at the time of death:

electric _____

natural gas _____

LP gas (propane) _____

don't know _____

refused _____

none _____

other(specify)_____

fuel oil _____

kerosene _____

wood/coal _____