A Guide For Manner of Death Classification

First Edition

National Association of Medical Examiners ®

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Preface and Caveats

If reading this Guide results in a given certifier of death deciding to change his/her approach to classifying manner of death in certain types of cases, there is no need to amend or change certifications that have already taken place. Starting the new approach at a given point in time is acceptable, with the caveat that one may occasionally need to explain differences between newer and older certifications involving similar or identical circumstances.

If changes in manner-of-death classification procedures are undertaken, it may be prudent to discuss them with appropriate vital records registrars so they are not surprised, and that they understand the reasons for the change.

This book is a Guide. The recommendations contained herein are not standards and should not be used to evaluate the performance of a given certifier in a given case. Death certification and manner-of-death classification require judgment, and room must be allowed for discretion on a case by case basis.

It must be realized that when differing opinions occur regarding manner-of-death classification, there is often no "right" or "wrong" answer or specific classification that is better than its alternatives. When promulgating guidelines, however, one of the available options needs to be selected as the one recommended for use. Thus, the recommendations herein are ones selected to foster a consistent approach amongst certifiers, not because the recommended approach is the "right" or the "better" one.

The "arguments," principles, and foundations used to support certain recommendations in this Guide cannot be applied uniformly to every conceivable death scenario because issues sometimes vary with the manner of death being discussed. As a result, there will be obvious, apparent "inconsistencies" in the rationale discussed for making some of the recommendations in this Guide. This problem is unavoidable because of the nature of the subject at hand. Thus, in some cases, one simply must select an available manner-of-death classification as the preferred one for use in a given scenario while recognizing that the logic used to select that option may not be applicable or directly transferable to other situations (and, in fact, may seem inconsistent with the logic employed in other scenarios). In short, it is sometimes necessary to simply select an approach and use it for the purpose of consistency, recognizing that other approaches may be "just as good."

Finally, a draft publication of this Guide was made available for review and comment by the NAME membership. All comments were reviewed and considered. Discussion of the nature of the comments and the way they were addressed is included as an Appendix to this Guide. This revised version of the Guide was approved as an official publication of NAME by the Board of Directors at its Interim Meeting in Atlanta, Georgia on February 12, 2002.

It is anticipated that supplements to, or revisions of this Guide will occur in the future.

Introduction:

All states have a standard death certificate that is based upon a model certificate called the US Standard Certificate of Death. Although the official death certificate in each state varies from the model and the death certificates used in other states, there are numerous similarities in form and content. The *certifier of death* is the physician, medical examiner, or coroner who completes the cause-of-death section of the certificate that also includes details about the circumstances surrounding death. *Manner of death* is one of the items that must be reported on the death certificate and a classification of death based on the circumstances surrounding a particular cause of death and how that cause came into play.

In most states, the acceptable options for manner-of-death classification are:

- Natural
- Accident
- Suicide
- Homicide
- Undetermined (or "Could not be Determined")

Whether manner of death is indicated by checking an appropriate box on the death certificate or by writing or typing the manner in a designated space depends on the state and how its standard death certificate form is designed. Familiarity with state death certification procedures and the death certificate form are required.

Manner of death is an American invention. A place to classify manner of death was added to the US Standard Certificate of Death in 1910. Manner of death is not addressed directly in the International Classification of Diseases as promulgated by the World Health Organization. It was added to the death certificate by public health officials to assist in clarifying the circumstances of death and how an injury was sustained—not as a legally binding opinion—and with a major goal of assisting nosologists who code and classify cause-of-death information from death certificates for statistical purposes.

Medical examiners and coroners have debated for decades about how the manner of death should be classified in certain situations, and more recently, whether certifiers should be required to classify manner of death at all. The debate continues and is a frequent subject of discussion.

This Guide has been written with the assumptions that, for the foreseeable future, manner-of-death classification will continue to be recorded on the death certificate—and differences in opinions about how to classify manner of death shall persist. The major impetus for preparing this Guide is the premise that, for consistency's sake, there can be a common thought and decision-making process upon which manner-of-death classifications can be based reproducibly in the great majority of cases.

Medical Examiners and Coroners reached the point that for personal, interpersonal, and inter-jurisdictional consistency, we as death certification professionals should be able to

recognize the recurrent debates about manner-of-death classification and arrive at a consensus approach for the commonly encountered manner of death dilemmas. We can "agree to disagree-- but to not be disagreeable," to quote New York City Medical Examiner Charles Hirsch. All agree, however, on the fundamental premise that manner of death is circumstance-dependent, not autopsy-dependent. To that end, the suggestions in this Guide are made based on experience, the literature, and a goal for greater consistency.

Other Background Information:

The death certificate is used for several major purposes. One purpose is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that death has occurred, but not as legal proof of the cause of death. Other major purposes of the death certificate are to: (a) provide information for mortality statistics that may be used to assess the Nation's health; (b) systematically catalogue causes of morbidity and mortality; and (c) develop priorities for funding and programs that involve public health and safety issues.

In general, the *certifier of death* completes the cause-of-death section and attests that, to the best of the certifier's knowledge, the person stated died of the cause(s) and circumstances reported on the death certificate. It is important to remember that these "facts" only represent the certifier's opinion and are not written in stone or legally binding. Information on the death certificate may be changed, if needed. In general, states require that the certifier of death be a licensed physician, a medical examiner, or a coroner. In some states, lay coroners may serve as certifier, but such certifiers can and should rely upon physician input and guidance when completing the death certificate.

Because the cause and manner of death are opinions, judgment is required to formulate both for reporting on the death certificate. The degree of certainty required to classify the manner of death depends sometimes on the circumstances of the death. Although such issues will be discussed in further detail below, a general scheme of incremental "degrees of certainty" is as follows:

- Undetermined (less than 50% certainty)
- Reasonable medical or investigative probability (Greater than a 50:50 chance; more likely than not)
- Preponderance of medical/investigative evidence (For practical purposes, let's say about 70% or greater certainty)
- Clear and convincing medical/investigative evidence (For practical purposes, let's say 90% or greater certainty)
- Beyond any reasonable doubt (essentially 100% certainty)
- Beyond any doubt (100% certainty)

Seldom, for the purpose of manner-of-death classification, is "beyond a reasonable doubt" required as the burden of proof. In many cases, "reasonable probability" will suffice, but in other instances such as suicide, case law or prudence may require a

"preponderance" of evidence—or in homicide—"clear and convincing evidence" may be required or recommended. Further references to these principles will follow on the discussion of specific scenarios, as appropriate, below.

The certifier's responsibilities include professional, administrative, and quasi-judicial elements. The conclusions that lead to manner-of-death classification are drawn at some point during an ongoing investigation. Cases are seldom, if ever, truly "closed" because the conclusions regarding manner of death may be changed (amended) anytime based on new relevant and material information. It is also important to remember that the conclusions reached for the purpose of manner-of-death classification may not be the same as those of other entities and officials. Such differences are expected because of the different roles and viewpoints of those entities and officials. In virtually all instances, explanations for such differences are usually apparent and readily offered. It is also important to remember that new developments in medicine and forensic science may provide the relevant and/or material information that leads to a need for reclassification of manner of death.

Manner-of-death classification has, to a significant degree, an element of history and tradition. When asked why manner of death is classified in a specific way, a not-uncommon response is "that's the way I was trained" or "that's the way its always been done where I have worked." Tradition, history, training, and local idiosyncrasies in the criminal justice and law enforcement communities can have impact upon manner-of-death classification strategy. This phenomenon is recognized and is taken into account during the development of principles in this Guide.

Finally, one cannot escape the need to consider **intent** when classifying manner of death. However, the definition of, or need to consider "intent" may vary depending on the case. One basic consideration is beyond dispute: the concept of intent differs when manner-of-death classification issues are compared with other paradigms such as legal code and public health strategies. These issues will be addressed in various scenarios below. The take-home point devolving from contemporary practice is that a singular definition and application of "intent" does not work in the context of manner-of-death classification.

General Principles:

There are several General Principles that may guide manner-of-death classification for the purposes of the death certificate. It is important to recognize that the death certificate has unique uses which dictate a special set of guidelines for manner-of-death classification.

A. There are exceptions to every "rule," but every rule holds true most of the time. Therefore, rules can be modified or broken in exceptional circumstances but can, and should be followed most of the time.

B. There are basic, general "rules" for classifying manner of death.

- Natural deaths are due solely or nearly totally to disease and/or the aging process

- Accident applies when an injury or poisoning causes death and there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self harm or cause the death of one's self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as homicide (more below). It is to be emphasized that the classification of Homicide for the purposes of death certification is a "neutral" term and neither indicates nor implies *criminal* intent, which remains a determination within the province of legal processes.
- Undetermined or "could not be determined" is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.
- In general, when death involves a combination of natural processes and external factors such as injury or poisoning, preference is given to the non-natural manner of death.

There are challenging aspects and exceptions related to each of the above classifications and concepts. These will be addressed in the various sections that follow.

C. Certifiers of death should avoid, to the extent possible, interpretation of specific statutes as they may apply to a specific case in question. For example, if a state defines a fatal vehicular hit-and-run incident as a type of "vehicular homicide," the certifier may classify manner as accident if the fatal injury seems to have been unintentional without clear intent to harm or cause death. Prosecution for vehicular homicide is not precluded if the legal requirements are met. This principle minimizes the need for the certifier to rely upon reported, often circumstantial third party or hearsay information and evaluate these data it in the context of applicable criminal law, a function better suited to others in the criminal justice system.

D. In general, the time interval between an injury/poisoning event and death is of little relevance in regard to manner of death classification if death resulted from the effects or complications of the injury/poisoning and there is no clear supervening cause. For example, if a person dies 10 years after being intentionally shot by another person, with death resulting from pneumonia and systemic sepsis as a result of quadriplegia caused by the gunshot wound, the manner of death would still be classified as homicide. By reliance on this approach, legal interpretations are not required of the certifier and the criminal justice system's duties are not precluded.

E. Manner of death certifications should be objective and based on simple, established criteria. Manner-of-death classification should not be formulated on the basis of trying to facilitate prosecution, avoiding challenging publicity, building a political base, or promoting a personal philosophy or agenda.

F. Regardless of how the certifier classifies the manner of death, the certifier may later address whether the findings are consistent with a proposed hypothetical situation. For example, if the proper legal foundation is laid, the certifier may explain in court why the manner of death was certified as accident when told that the defendant has been charged with vehicular homicide. Whether the certifier is permitted to testify in court about the certified manner of death rests upon the law and practice of the relevant jurisdiction.

G. The "but-for" principle is commonly applicable. "But-for the injury (or hostile environment), would the person have died when he/she did?" This logic is often cited as a simple way to determine whether a death should be classified as natural or non-natural (homicide, suicide, accident). When an injury or poisoning is involved in the cause of death, an answer of "yes" supports a natural death and an answer of "no" should prompt due consideration to be given to a non-natural manner of death. The certifier needs to recognize, however, that the intermingling of natural and non-natural factors presents a set of complex considerations in assigning a manner of death. Regardless of whether the non-natural factor (a) unequivocally precipitated death, (b) exacerbated an underlying natural pathological condition, (c) produced a "natural" condition that constitutes the immediate cause of death, or (d) contributed to the death of a person with natural disease typically survivable in a non-hostile environment, this principle remains: the manner of death is unnatural when injury hastened the death of one already vulnerable to significant or even life-threatening disease.

H. Most jurisdictions do not provide for manner of death to be classified as "Complication of Therapy." Although there are advocates for such an approach, acceptance of the approach is not widespread. To be sure, the death certificate should indicate when a death results from complications of medical diagnosis or treatment--whether such indication is given in the cause-of-death statement itself, the "how injury occurred" section, or in some other way. This Guide indulges the presumption that "Complication of Therapy" is not an accepted category for manner of death, and that a decision will have to be made for classification as one of the standard manners of death.

I. Risk-taking behavior poses challenges when classifying manner of death. More and more, people are engaging in risky sports, recreational activities, and other personal behaviors. Injury or death, when it occurs during such activities, is not entirely unexpected, prompting the argument that such deaths may not truly be "accidents." Further, relevant differences in the nature and extent of risk, when comparing risky activities, are difficult to clearly identify. For example, how does placing an "unloaded" gun to the head and pulling the trigger (Roulette) differ from jumping from a bridge on an elastic cord, engaging in sexual acts with a noose around the neck, or participating in a sport in which blows to the head are part of the "game."? These are challenging questions. In subsequent sections of this Guide, an attempt is made to provide a system of defensible logic to classify the manner of death in such cases.

J. Volition versus Intent. In evaluating the manner of death in cases involving external causes or factors (such as injury or poisoning), injuries are often categorized as

"intentional" (such as inflicted injury in child abuse or shooting a person during a robbery) or "unintentional" (such as falling from a building). Thus, assessment of "intent" does relate to manner-of-death classification: it necessarily underlies the quasi-judicial responsibility derived from the enabling law in the relevant jurisdiction of the death certifier. However, the legal view of intent may differ from the death investigator's viewpoint. It is sometimes agonizingly difficult, and occasionally impossible, for the unbiased investigator to infer a victim's or "perpetrator's" intent. Intent is also much more apparent in some cases than others. For this reason, the concept of "voluntary acts" or "volition" may be useful. In general, if a person's death results at the "hands of another" who committed a harmful volitional act directed at the victim, the death may be considered a homicide from the death investigation standpoint. For example, consider the case of a variation of firearms "roulette" in which the game is played as usual (one bullet in the revolver's cylinder) except that another person holds the gun to the "player's" head, spins the cylinder, pulls the trigger, and the gun discharges and kills the "player." All acts (loading the gun, spinning the cylinder, placing the gun to the head, and pulling the trigger) were both volitional and intentional. Although there may not have been intent to kill the victim, the victim died because of the harmful, intentional, volitional act committed by another person. Thus, the manner of death may be classified as homicide because of the intentional or volitional act—not because there was intent to kill.

Principles and recommendations for specific types of cases.

1. To classify a death as Suicide, the burden of proof need not be "beyond any reasonable doubt," but it should exceed "more likely than not" (that is, the burden of proof should be more compelling than 51%, which barely exceeds chance). In general, requiring a "preponderance of evidence" is a reasonable practice when deciding whether to classify a death as suicide. In some states, case or other law requires that a preponderance of evidence exist to classify death as suicide. In short, if classification as suicide is little more than an informed guess or mere speculation, accident or undetermined are deemed to be better options.

2. When a natural event occurs in a hostile environment, as when someone has a myocardial infarct while swimming, and there is a likelihood that the person was alive when the face became immersed (i.e., the person was still alive while in the hostile environment), preference is usually given to the non-natural manner unless it is clear that death occurred before entry into the hostile environment. In the example cited (drowning because of a myocardial infarct while swimming), the manner of death would be appropriately classified as **Accident**. In this instance, a modified "but-for" test can be applied. "But-for" the hostile environment, death would have been considerably less likely to occur when it did and may not have occurred at all.

3. Consequences of chronic substance abuse, such as alcoholic cirrhosis, alcohol withdrawal seizures, endocarditis secondary to chronic IV drug abuse, and emphysema associated with smoking, have been traditionally designated as **Natural** manner. The

argument is often made that these deaths are chronic poisonings or that they result from continuous exposure to external agents and are, therefore, not natural deaths. Further, some argue that there is a "sub-intent" to do self- harm. However, the classification of such deaths as natural has a long history, widespread acceptance, and recognition that such behaviors result in "diseases" and become part of the person's "normal" lifestyle which often includes psychiatric elements such as a dependency or addictive disorder. For these latter reasons, classification as natural seems most appropriate.

4. Deaths directly due to the acute toxic effects of a drug or poison (i.e., poisoning), such as acute alcohol poisoning, excited delirium from acute cocaine intoxication, or cardiac dysrhythmia due to tricyclic antidepressant toxicity have been traditionally classified as **Accident** (assuming there was no intent to do self harm or cause death). In general, these are adverse acute events involving external factors, and the occurrence of the adverse event is not planned, reasonably expected, or reliably predictable as to time, place, or person. The difficulty often encountered is whether the drug or substance detected represents an acute exposure. For example, if benzoylecgonine only is detected in blood, does that constitute an "acute exposure"? The issues involved are highly dependent on the substance involved, are beyond the scope of this Guide, and are better left to other publications. Suffice it to say that if death results from an acute intoxication and the death was "unintentional," tradition and logic indicate that the manner of death is best classified as "accident." Further discussion (and exceptions) are discussed in #6 below in reference to some deaths involving medications and treatments.

5. "Natural" disorders precipitated by an acute intoxication, such as cerebral hemorrhage associated with acute cocaine intoxication, or rupture of a coronary atherosclerotic plaque during acute cocaine intoxication, for the purpose of consistency, may be classified as **Accident** if toxicology tests are supportive of an acute intoxication. The problem is, however, as in #4, deciding upon how "acute" such an intoxication is or must be to classify the manner of death as accident—and how acute effects of the drug relate to more chronic effects, if present. A convincing argument could be offered that preference should be given to the natural event while citing the intoxication in Part II and classifying the death as natural. It is recommended, however, to remain consistent with General Principle B (last bullet) that such deaths be classified as accidents. It is also recommended that "acute" be interpreted liberally, perhaps even as "recent." That is, if the circumstances appear to link the death and a very recent intoxication, that the intoxication be considered when classifying manner of death.

6. Deaths due to predictable, essentially unavoidable toxicity related to accepted treatment of a medical disorder, such as digoxin toxicity in severe congestive heart failure, or bone marrow suppression with fatal infection secondary to chemotherapy (a poison), may be classified as **Natural.** In such cases, the treatment may have prolonged the life of the individual. Because such deaths are "poisonings," some advocate classification as accident. However, tolerance, the need for high doses, and other factors can make interpretations difficult. For these reasons, natural is the preferred classification.

7. Hunting "accidents" in which a hunter intentionally fires a weapon (but may not intend to shoot at a human), may, for consistency's sake, be classified as **Homicide** because the decedent died at the hands of another who volitionally fired the weapon. Each step but one involved intent and volition: loading the weapon, aiming it at a target, and pulling the trigger. The only intent absent was that of striking a human. The intent to hit a target was fulfilled.

8. Firearms deaths in which a gun is shown to be capable of discharge without pulling the trigger, and, based on investigation, did so (as when a gun fires when dropped on the ground, or discharges when it is picked up), may be classified as **Accident** if circumstances and investigation indicate that the gun was not fired by intentionally pulling the trigger (lack of a volitional act).

9. Death of one who is struck by a ricochet from a firearm fired legally and without disregard for safety or human life may be classified as **Accident**. To classify this as homicide, critical elements are missing: an intent to harm or kill, and an intentional or volitional pointing of the weapon in a way that the victim was the intended target. Often, if bullets ricochet, wound morphology allows analysis of possible ricochet before bullet entry, allowing the forensic pathologist to assess the possibility or likelihood of ricochet.

10. Russian roulette or similar variants may be classified as **Suicide** because the act of placing a loaded gun to the head and pulling the trigger is inherently dangerous, carries a high risk of death, and implies a "subintent" to do self-harm or accept the risk of serious injury or death. Guns are generally regarded as lethal weapons and are inherently lethal if misused. Knowledge of this fact is part of the reason the game is played. Thus, playing the game connotes an acceptance of possibly fatal outcome. Attempting to determine the victim's state of mind and intent are extremely difficult. Classification of such deaths as suicide provides for a consistent approach and reflects the most common practice.

11. Motor vehicle fatalities in general, may be classified as **Accident** (assuming no suicidal or homicidal intent), even if by law the death may be regarded as vehicular homicide—and, there is no evidence from reasonable investigative inference that the at-fault person was using the vehicle as a weapon with an intent to kill the victim (in which case homicide would apply.)

12. Deaths due to vector-borne disease, even though the result of a bite or puncture such as rabies, Rocky Mountain Spotted Fever, and malaria, may be classified as **Natural.** These vectors transmit disease, and humans become ill or die from the disease processes. Typically, the deaths are less sudden than those due to envenomization and idiosyncratic responses to the agents are less variable than the individual response to envenomization.

13. Deaths due to toxic envenomization, such as spider bites, snake bites, and anaphylactic reactions to bee stings may be classified as **Accident**. These episodes are typically acute and the fatal human pathophysiologic response involves reaction to a toxin. Granted, the distinction between this type of death and those described in #12 is

somewhat arbitrary, but the line of distinction, thus drawn, is also fairly clear and easy to establish.

14. Deaths due to drug or food induced anaphylaxis or anaphylactoid reaction may be classified as **Accident,** even if there is a previous history of allergic reaction to the putative agent. Some argue that anaphylaxis represents an idiosyncratic pathophysiologic response and should therefore be considered natural. However, such deaths are often sudden, unpredicted, "premature," and involve an external factor. Thus, classifying the manner as accident is preferred. It matters not whether the agent is food, drug, contrast dye, or other.

15. Unintentional deaths from drug toxicity/poisoning in which the drug is administered by someone with the consent of the decedent may be classified as **Accident,** as long as there is no evidence by reasonable investigative inference that the drug was given with the intent to kill the victim. Prosecution may still occur, if appropriate. This approach may seem inconsistent with some other scenarios, but it is reasonable on the basis that severe injury or death is not near as likely as, for example, when a loaded gun is placed to the head and the trigger is pulled.

16. Deaths due to positional restraint induced by law enforcement personnel or to choke holds or other measures to subdue may be classified as **Homicide**. In such cases, there may not be intent to kill, but the death results from one or more intentional, volitional, potentially harmful acts directed at the decedent (without consent, of course). Further, there is some value to the homicide classification toward reducing the public perception that a "cover up" is being perpetrated by the death investigation agency.

17. Deaths of athletes due to injuries sustained in organized sports may be classified as **Accident** because the participants accept inherent risks of the sport, unless the nature of the injury clearly falls outside that which normally occurs during the activity. Another way to regard this issue is that the "volitional or intentional act" that causes harm is inherent in participating in the game, and the game or sport requires the participant to commit potentially harmful acts. Thus, an untoward event is not solely attributable to the participant, and the potential risks have been sanctioned and accepted. Examples might include death from a "legal" head blow during boxing, or a broken neck from a tackle during a football game. However, death resulting from an altercation might be considered homicide if there were clear, unwarranted aggression outside the bounds of normal activities related to the rules of the sport—chasing down a baseball pitcher and striking him with the bat, for example. Judgment and informed discretion are required.

18. Death of a law enforcement officer from cardiovascular or other natural disease while in pursuit of a criminal, felon, or suspect may be classified as **Natural,** assuming there is no aggression or battery on the part of the person fleeing. Physical exertion may be listed as a contributory factor. Sample wording for use in Part II might be "Physical exertion while apprehending a fleeing suspect." Such wording is appropriate for Part II because no injury occurred, thus, the "how injury occurred" item is not applicable.

19. Deaths due to reasonably foreseeable complications of an accepted therapy for natural disease may be classified as **Natural.** Examples include bone marrow suppression from chemotherapy (a "poisoning," actually) and digoxin toxicity in someone who had intractable heart failure and required digoxin to maintain cardiac function and life. Numerous other analogous examples exist.

20. Deaths due to improper use of medical equipment (without evidence of intentional misuse) or defective or malfunctioning medical equipment may be classified as **Accident.** Some examples are: instilling of air instead of water during an endoscopic procedure, causing air embolism; connecting an oxygen cannula to an IV line; malfunction of a morphine drip pump; cutting an artery during surgery and failing to recognize and adequately repairing the "injury."

21. Deaths resulting from grossly negligent medical care (such as inducing anesthesia without resuscitative equipment/supplies available) may be classified as **Accident** unless there is clear indication of intent to do harm, in which homicide might apply. The criminalization of medical malpractice is of great concern to both the legal and medical professions, and whether or not medical acts of commission or omission meet a legal definition of negligent or other homicide is better left to others more familiar with the legal issues involved.

22. Deaths due to undesirable outcomes of diagnostic or therapeutic procedures and which involve circumstances outside the realm of reasonably acceptable risk and expected outcome may be classified as **Accident** if a traumatic or toxic cause is shown (such as inadvertently cutting a major artery or overdosing with anesthetic), and **Undetermined** if a cause cannot be established (such as a young healthy man who dies during surgery for a inguinal hernia and a cause cannot be determined).

23. High risk surgical patients who die while undergoing (or after) high risk procedures may be classified as **Natural** if it appears that the normal and unavoidable stress of the surgery and underlying disease resulted in death. Using the ASA surgical risk classification to evaluate manner of death, as described by Reay, is a useful approach. An approach to periprocedural deaths is contained in the CAP manual on death certification. Both references are listed in suggested readings at the end of this Guide.

24. When a person commits suicide by forcing the police to shoot, the death may be classified as **Homicide**. In "How injury occurred," language such as "decedent forced police to shoot him" may be used. The accuracy of reported details in such cases is not always known, and classification as homicide seems to be the best approach. Public perceptions of a "cover up" are also minimized using this approach.

25. Judicial executions may be certified as **Homicide**. In "How injury occurred," language such as "judicial electrocution" or "judicial lethal injection" may be used

26. When a young child shoots another child by pointing a gun and pulling a trigger, the death may be classified as **Homicide** even though the child may not be subject to

prosecution. Undetermined may be appropriate if the circumstances are not well clarified, or Accident may apply if investigation shows a faulty/malfunctioning weapon.

27. Traffic fatalities in which a pedestrian is killed and the driver has shown negligent behavior, probable intoxication, or fleeing of the scene may be certified as **Accident** even though these features may meet a legal definition of vehicular homicide, and assuming that there was no intent to kill the individual. Whether or not the case meets a legal definition of vehicular (or some other form) of homicide/manslaughter is better left to the criminal justice system.

28.Deaths resulting from fear/fright induced by verbal assault, threats of physical harm, or through acts aggression intended to instill fear or fright may be classified as **Homicide** if there is a close temporal relationship between the incident and death. Examples include someone who has an acute cardiac death while being verbally assaulted; someone who dies in an auto crash while being chased by another to instill fear or panic; someone who dies suddenly immediately after being bitten; and someone who dies suddenly when someone scares them by popping up in a window and yelling "BOO!" with an apparent intent to scare or instill fear. In general, the time interval to establish the causal relationship between "minor injury" and collapse followed by death or those involving acute cardiac deaths following fright must be very short—during the stress inducing episode or immediate emotional response period-- a few minutes or less.

29. Post-traumatic seizure disorders may be classified in accordance with the nature of the injury that resulted in the seizure disorder—regardless of the time interval between the injury and death. Thus, post-traumatic seizure disorder that caused death 10 years after the auto accident that caused the disorder may still be classified as Accident.

30. Failure to prescribe needed medication for natural disease, if there is no indication of willful failure to prescribe with intent to do harm, may be classified as **Natural**.

31. When a person has clearly committed a suicidal act, then apparently changes his/her mind, but dies as a result of the act, the manner of death may be classified as **Suicide.**

32. Café coronary in its classic form of upper airway obstruction by food (that hasn't made it to or through the esophagus) in an otherwise healthy person may be classified as **Accident**. Typically, there is historical, anatomic, or toxicologic evidence accounting for compromised deglutition. Agonal aspiration of gastric contents or GE reflux do not fall into this category and, in general, should not be classified as an accidental manner of death.

33. Deaths due to aspiration of oral secretions or gastric contents in those with dementia or other chronic debilitating central nervous system disease may be classified as **Natural**.

34. Death involving obstruction of a tracheostomy site or tube by mucous plugs or other secretions may be classified in accordance with the nature of the condition that required the tracheostomy to be performed. If performed for throat cancer, the manner would be natural. If performed because of an old accidental head injury, the manner would be accident, for example.

35. Deaths due to work-related infections resulting from job-related injury, such as HIV infection acquired through an accidental needle stick, may be classified as **Accident** if investigation shows no other compelling, competing causes, and the details of the incident are reasonably well documented.

36. Deaths involving active euthanasia or actively assisted suicide may be classified as **Homicide** unless state law dictates otherwise.

37. Assisted suicide involving passive assistance may be classified as **Suicide** unless otherwise required by state law, and assuming that the assistance goes no further than supplying one or more items (or information needed) to complete the act.

38. Deaths in which infants/young children die because of placement in a potentially hostile environment (such as in a bath tub with water, or being left in a locked car) may be classified as **Accident** if there is no evidence of intent to harm the child.

39. Deaths due to environmental hypothermia or hyperthermia may be classified as **Accident** if there is no intent to kill or harm the victim via the act of placing or leaving a person in such environment with apparent intent to do harm.

40. Deaths in which hot weather or cold weather seem to precipitate death primarily caused by underlying disease such as cardiovascular or respiratory illness may be classified as Natural. In Part II of the cause-of-death statement, "Hot weather" or "Cold Weather" may be listed as contributory factors. Life consists of having to live within the realm of natural conditions imposed by the weather and climate, and if the individual's underlying ill-health is a major factor in causing death, the adverse impact of natural changes in weather, even if regarded as extreme, does not warrant classification as Accident. For example, if a person's emphysema/bronchitis are aggravated by a high pollen count and death results, are we to classify the death as an Accident? What about high and low humidity that may contribute to death by aggravating severe respiratory disease? The potential cause and effect relationships are too vague and difficult to establish to allow for non-natural classification in such cases. Similarly, deaths related to exertion brought about by adverse weather may also be classified as natural, such as a myocardial infarction brought about by shoveling snow.

41. Deaths of those with major disease and minor accidental trauma may be classified as natural if it is thought that death was about as likely to have occurred when it did had the trauma not existed. For example, a person in sickle cell crisis might sustain a minor injury that could exacerbate the crisis, yet the crisis is severe enough that it may well have been fatal on its own.

42. Pregnancy-related deaths such as those due to eclampsia, air embolism, amniotic fluid embolism and other well-recognized complications of pregnancy may be classified as natural if there is no indication that that the complication resulted from inappropriate use of a medical device or an inappropriate or unlawful procedure.

43. **Death resulting from an act of aggression with a chemical or biological agent** released or activated to cause fear or harm may be classified as homicide. Bioterrorism events are included in this category which would also include smaller scale events such as intentionally poisoning the food at a salad bar, or tainting a commercial drug with a poison.

44. Fatalities resulting from autoerotic behavior or consensual atypical sexual behavior may be classified as accident in manner. Examples include autoerotic asphyxia with hanging or deaths involving bondage with asphyxia in which the person being bound did so voluntarily as far as investigation can show. As dangerous behaviors, one could argue that these are not dissimilar from Russian Roulette. The perceived risk of death, however, may not be as great and the "weapon" or agents involved are, in general, not as inherently dangerous.

45. Natural deaths occurring during the exertion of intercourse or other sexual activity such as masturbation may be classified as natural in manner. An example would be rupture of a berry aneurysm shortly after coitus.

46. Self-inflicted deaths committed while under the influence of a mind-altering drug may be classified as **Suicide**. Assuming that the mind-altering drug was taken voluntarily, the victim assumes the risk of the adverse effects of the drugs on behavior. A pathologist can rarely, if ever, determine that a suicidal act would not have occurred if a given drug were not in the victim's "system," or that an intoxication caused an "accident" rather than suicide.

Sudden Infant Death Syndrome and related infant deaths

Infant deaths pose special problems when classifying manner of death and stating the cause of death. Changing trends in causes of infant mortality, increased recognition of fatal infant and child abuse, and changing concepts about pathogenesis and injury mechanisms all have served to complicate the certification of infant deaths. For these reasons, they are discussed as a group below.

Deaths presenting as possible Sudden Infant Death Syndrome, after thorough autopsy and investigation, tend to fall into one of the following Groups:

Group 1. A specific disease, injury, or other condition is identified as the cause of death

Group 2. The case meets the criteria for the diagnosis of sudden infant death syndrome (no cause of death identified after complete autopsy, including toxicology and other lab

tests, scene investigation, and review of the medical/clinical history) and there is no information which brings the SIDS diagnosis into question (toxicology tests are negative, histology is negative, and there are no unusual scene findings or sleeping conditions—in essence, a "classic" and uncomplicated SIDS case)

Group 3. The case substantially meets the criteria for sudden infant death syndrome but evidence of a disease condition (such as focal bronchiolitis) is found but the role of the condition in causing or contributing to death is not truly known or is difficult to rule in or out as a causative or contributory finding

Group 4. The case substantially meets the criteria for sudden infant death syndrome but evidence of an external condition or risk factor exists (such as bedsharing with adults, sleeping face down on a soft pillow or adult mattress, etc) but the role of the external condition or risk factor in causing or contributing to death is not truly known or is difficult to evaluate, prove, or disprove.

Group 5. Something in the investigation precludes a diagnosis of SIDS, but the cause and manner of death have not been determined.

To complicate matters, within the recently (2001) published Position Statement by The American Academy of Pediatrics (AAP) on infant death investigation there is a list of findings which, if found at autopsy, should preclude a diagnosis of SIDS according to the AAP. This list includes factors like drugs (even medications) and old skeletal trauma (such as an isolated healing rib fracture). If the diagnosis of SIDS is to be avoided in such cases, the question of true cause of death arises which, in turn, raises the question of manner-of-death classification. Based on these considerations, the following guidelines are offered based on the five Groups as described above:

- Group 1. These are cases in which a specific cause of death is apparent (such as pneumonia, meningitis, congenital heart defect, overlaying, asphyxia from plastic bag, head trauma, etc). The cause of death should be reported and the manner of death classified as indicated based on the circumstances.
- Group 2. These "classic" SIDS cases may be certified as "Sudden Infant Death Syndrome" or "Consistent with Sudden Infant Death Syndrome," or "Consistent with the Definition of Sudden Infant Death Syndrome." The manner of death may be classified as either natural or undetermined, depending on the certifier's philosophy and approach. "Undetermined" is probably the most objective approach since the cause is, by definition, undetermined. From the statistical coding standpoint, either option would be ICD-coded to R95—Sudden Infant Death Syndrome. Whichever method is used, consistency within a given death investigation jurisdiction is recommended. Based on currently available information and concerns about infant deaths, however, "undetermined" manner is the recommendation of this Guide. If the manner is certified as undetermined in such cases, the injury information may be listed as unknown or not applicable if the local registrar requires those death certificate items to be completed. Also, if the "undetermined" option is used for this Group of cases, the medical examiner may explain to the parents (and others, as

needed) that the death may have been due to natural causes but our ability to know for sure is limited.

- Group 3. The cause of death in this Group may be stated as "Consistent with Sudden Infant Death Syndrome" or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an "other significant condition" (such as "focal bronchiolitis"). The manner may be classified as natural or undetermined using the same logic as described for Group 2 cases, with "undetermined" being the recommended option.

- Group 4. The cause of death in this Group may be stated as "Consistent with Sudden Infant Death Syndrome" or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an "other significant condition" (such as "face down on soft pillow"). The manner may be classified as undetermined because the external factor poses the distinct possibility of a non-natural death. In essence, these would be cases in which all findings point to SIDS except that there is one or more factors (bed sharing, face down on soft bedding, etc) that significantly heighten the possibility of an external cause being involved. If the case involves a decision whether to certify the cause of death as SIDS or back off from SIDS because of the presence of a possibly significant external factor, it is recommended that the cause of death be listed as "Consistent with Sudden Infant Death Syndrome," the external risk factors be listed in Part II as other significant conditions, and the manner of death be classified as undetermined. This approach allows for an objective report of the findings.

- Group 5. The cause of death may be simply stated as "Unexpected and Undetermined Cause" or similar wording. Terms such as "sudden unexplained infant death" should be avoided because the wording may cause confusion with sudden infant death syndrome and result in inappropriate ICD coding. Complicating factors such as bed sharing may be reported in Part II, as needed. The manner of death may be classified as undetermined. The injury items may be listed as unknown if the local registrar requires completion of the injury items in such cases.

In addition, there are several other scenarios related to infant deaths. Recommendations for these follow:

S1. Simultaneous, apparent SIDS deaths may be classified as **Undetermined**. The odds of simultaneous deaths due to natural causes is extremely low, making non-natural causes (accidental or homicidal) likely enough to use the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

S2. Second and subsequent apparent SIDS deaths among siblings or common caregiver(s) may be classified as **Undetermined** (assuming there is insufficient information to classify them otherwise). The odds of a second SIDS is low, justifying

the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

S3. **Illegal termination of pregnancy may be classified as homicide if live birth occurred or as feticide if stillborn**, regardless of length of gestation, and assuming that fetal demise was caused by the attempt to terminate pregnancy. . The criminal justice system can make decisions about which cases meet the criteria for prosecution.

S4. Death of fetuses and infants possibly due to maternal drug intoxication may be certified as accident unless there is a preponderance of investigative information indicating that the mother intended to terminate the pregnancy or life. In essence, the same manner would apply to the fetus/infant as if the mother died under the same circumstances.

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Appendix: The Review and Comment Process

After the draft of this Guide was completed in late September 2001, it was posted on the NAME web site for a 6-week period of review and comment by the NAME membership. The membership was notified of the review and comment process via NAME-L, NAME NEWS, and at the annual meeting in Richmond. All comments that were received have been reviewed and considered. Most feedback was positive, supportive of the concepts expressed, and without significant suggestions for modification of the guide. A few comments from other reviewers did raise important or controversial issues. This Appendix reports those comments and describes how the comments and issues were addressed. Editorial responses to the comments are [bracketed].

The authors wish to thank all of the individuals who took the time to provide comments about this Guide.

Scenario 9 (Ricochet). One reviewer felt that some deaths involving ricochet might better be classified as homicide, as might occur when a prison guard fires a warning shot that goes awry, then ricochets and kills an inmate. [Cases such as this require judgment and room is allowed for judgment. The scenario and suggestion offered in this Guide was directed more at an instance in which there are no law enforcement issues involved, as might occur at a firing range, while hunting, or around the home or on personal property. Further, some ricochets may actually occur when a person is aiming at and intending to strike a victim. In such cases, classifying the manner of death as homicide may be appropriate. Judgment is needed in each case because subtle differences in circumstances may have major impact on case interpretation, decision making, and classification].

Scenario 14 (anaphylaxis). Two reviewers felt that anaphylaxis, when there is no "mistake" made in exposing the decedent to the allergen—and if the exposure does not involve a trauma and toxin such as a bee sting and venom, should be classified as natural. [An example might be a reaction from eating shellfish or other food, and the argument for natural manner in such cases is compelling. However, deaths from anaphylaxis are rare, and they are usually unexpected, unanticipated, and involve some exogenous exposure (including substances in food) that causes death. For these reasons, this Guide recommends that the manner be classified as accident as a matter of routine so the subtle differences in allergens and exposure routes need not be weighed. Of course, another manner of death might be applicable in some cases, such as homicide if it were known that a person intentionally exposed another individual to the causative antigen with intent to do harm].

SIDS cases. One reviewer felt that a specific recommendation for manner of death in classic SIDS cases should be made rather than stating that either natural or undetermined is acceptable. [This section has been altered to recommend that the manner in classic SIDS cases be classified as undetermined since, by definition, the cause of death in SIDS cases is unknown and could involve external and non-natural factors. It is acknowledged that considerable evidence points to natural causes in such cases, but because the classification of manner of death does not impact coding in cases certified as SIDS, the

undetermined classification seems to be the most objective—at least on the basis of currently available information. One reviewer indicated agreement, in principle, with an undetermined manner in SIDS cases, but in practice, classifies the manner as natural because of the traditional view that a natural manner is less likely to adversely impact upon the parents/family.]

Concept of "Unclassified" Manner of Death. One reviewer pointed out that having the option of "unclassified" as a manner of death might be useful, for example, in some cases involving complications of therapy or for certain types of drug deaths and other scenarios. For example, the reviewer argued that chronic substance abuse involves intentional self-destructive behavior and has suicidal elements in addition to what might be argued as unintentional or accidental components (or even homicidal components if the drug were injected by someone else), and that the best option for manner of death would be "unclassified." The reviewer pointed out that "unclassified" differs from "undetermined" which actually means "could not be determined." [Although the federal standard death certificate (upon which the state death certificates are modeled) does not include an option for "unclassified," there may be one or more states in which such an option does exist. As a practical matter, however, it is recommended that "undetermined" and "unclassified" be used synonymously until such time that additional standard options are provided for manner-of-death classification. It is felt that in most instances, a given death can be reasonably placed into one of the existing categories (natural, homicide, suicide, accident, or undetermined) using the principles in this Guide. The "unclassified" option would not add much value to the classification system, although admittedly, it might make some deaths easier to "classify" by not having to make a decision].

A second reviewer also brought up the concept of "unclassified," and reported to use it as the manner of death in some cases in which none of the other categories seem appropriate-- for example-- a mental patient who thinks he can fly and jumps off a building. Or, as another example, the death of an infant from immaturity who was born alive after a legal attempt at abortion—in which arguments could be made for accident, homicide, or natural. [This seemingly rare sequence does make a good point, but again, the other available options for manner of death could be used in such cases].

Drunk driving. One reviewer pointed out that the death of a drunk driver in some respects fulfills the criteria for suicide (i.e., self destructive behavior), although such deaths are classified as accidents as a matter of convention. The same reviewer, however, reported the practice of classifying the manner of death as homicide when a person is killed by a drunk driver. [The recommendation in this Guide for such cases has been discussed elsewhere, and for the reasons stated (which include issues of intent and the law), that such deaths are more appropriately classified as accidents because doing so does not bar or obstruct applicable vehicular homicide laws or prosecution, if appropriate].

Volitional versus intentional. One reviewer requested clarification of these terms in reference to Section J on Page 7. [Webster's New World Dictionary defines "volition" as "using the will," deciding what to do," or "a conscious or deliberate decision or choice."

In contrast, one definition of "intent," and probably the best for the purposes of this Guide, is "the purpose at the time of doing an act." In the case of a straightforward suicidal gunshot wound of the head, the volitional acts include deciding to load a gun, putting it to the head, and pulling the trigger. The "intent" or purpose of the volitional act is to end one's life. In some cases, the intent to end one's life is less clear, although the volitional element of the act (such as placing a loaded gun to the head and pulling the trigger in Russian Roulette) is quite clear. The issue, then, is whether "intent" to die (the purpose of the volitional act) is inclusive of employing a recognized, potentially lethal weapon and accepting a definite and known risk of death during the action under consideration. Acceptance of this premise seems reasonable for one simple reason: why else would the victim have committed the act in the first place? It is accepting or even desiring the risk that serves as the purpose of the volitional act. One might state it as "but for the volitional act—the will, decision, and deliberate choice and the clear and present danger and risk of death brought about by the volitional act—a fatal outcome would not have been expected." It could be argued that other "sport" such a parachuting or rock-face climbing might fulfill the same criteria. However, the practical difference is that the "weapon" in these latter cases is not something normally regarded and widely recognized as a lethal weapon. The same "but for" statement can be applied in the context of volition when supporting the classification of a hunting "accident" as a homicide. "But for the volitional act of aiming the gun and pulling the trigger, the death would not have occurred." A major and unavoidable consideration is the type of weapon or agent involved and the likelihood of its use being lethal when employed toward a human being].

Scared to death. One reviewer was concerned that a death during an exclusively verbal argument (such as acute cardiac death) might be classified as homicide based on the principles in this Guide. [That was not the intent of the principles. Solely verbal arguments tend to escalate because of mutual participation of the parties. That situation differs from one in which one party commits a volitional act (such as yelling "boo" at a frail elderly person) with the apparent intent to scare or become alarmed—which constitutes assault. In this latter type of case, classification as homicide may be appropriate. Acute cardiac death precipitated by the stress of "normal" activities and events of daily life, such as vigorous verbal argument, is regarded as **Natural,** akin mechanistically to sudden death after consensual conventional sexual activity.]

Death during a struggle. One reviewer thought that death during a struggle with another person should be ruled homicide if there was physical contact. [In some cases, this is certainly appropriate—especially if the struggle was precipitated by a physical assault or battery initiated by the other person. There are, however, cases in which cardiac deaths occur from exertion that is job related (such as running after a suspected bank robber, or putting out a fire) in which a natural manner of death is appropriate. If such a death occurs during a felony committed by the second party (not the deceased), that death may be regarded as a homicide or felony murder by law enforcement authorities and the courts, but the medical classification of manner need not be based on an interpretation of such laws].

Car chases. One reviewer broached the subject of "innocent bystanders" killed during car chases, such as pedestrian struck and killed while the police are chasing a fleeing felon. Some regard the manner as homicide in such cases. [This situation is analogous to many others in that definition of the crime (such as felony murder) and legal responsibility for such deaths are defined in law. From the medical certification standpoint, unless there was convincing evidence that there was intent to kill the victim, the principles in this Guide would result in such deaths being classified as accidents. The manner would be the same regardless of whether the innocent bystander were struck and killed by the fleeing felon or by the police who were in pursuit of the felon].

Hostile environment. Regarding Scenario #38, two reviewers raised concern that some such deaths (e.g., infant inadvertently left in a hot car and dying of hyperthermia, or in a bathtub and dying of drowning) might be classified as homicide to differentiate such cases from those of lesser degrees of negligence. [This certainly is an option, but the principles in this Guide suggest that such cases be classified as accident unless there is clear evidence of intent to harm the child. In essence, ignorance or an untoward oversight would not, in and of themselves, result in classification as homicide. Classification of such deaths as accident would not preclude legal proceedings and criminal charges if the case met legal criteria of criminal neglect, abandonment, or some other crime. These deaths can be very circumstance dependent, and the degree of "neglect" does need to be considered. For example, the manner of death may be different in a case in which an infant was left in a hot car for 8 hours while the mother played slot machines compared with a case in which and infant was left for 30 minutes while the mother went shopping for baby food. A major problem occurs in interpreting the degree of neglect and just how much and what type of neglect are needed to classify the death as a homicide. This is why the more generic approach of "accident" is recommended for most cases. See also Principle #2, page 8].

Degrees of certainty. Three reviewers had concerns about the various degrees of certainty as discussed on Page 4. [Each suggested that the "beyond a reasonable doubt" (the wording used in the original draft) be changed to "beyond any reasonable doubt," and that change was made].

Regarding the certainty of the cause of death (compared with manner of death), a classification system was offered by one reviewer and drawn from Charles Hirsch's "A Cause of Death versus The Cause of Death:"

Class I. Absolute certainty, because pathological findings are inconsistent with continued life and the mechanism is obvious (such as rupture of the heart or bilateral massive pulmonary embolism);

Class II. Pathologic findings competent to explain death but without the development of complications that would promote them to Class I. The degree of certainty is determined by history and circumstances.

Class III. Marginal pathologic findings, compelling history, and exclusion of other causes.

Class IV. Pathologically negative but a positive history and exclusion of other causes (epilepsy would be an example of a natural condition in this Class, and electrocution without cutaneous burns is an example of a non-natural death in this Class).

Class V. Cause of death undetermined.

A second reviewer had additional comments about degree of certainty and offered the following scheme:

<50% may be viewed as "possible"
>50% may be viewed as "probable"

"Preponderance of evidence" is equivalent to "more likely than not" or "probable (>50%)," permits reasonable doubts, and is the degree of certainty used when making a determination of cause of death in natural deaths.[This point is well-taken in that arriving at a conclusion or establishing facts by a "preponderance of evidence" in civil actions, for example, means that something is more likely so than not so.]

"Certainty beyond a reasonable doubt" equates to "reasonable degree of medical certainty"-- this far exceeds 50%-- and is the degree of certainty required when considering homicide versus other, or accident versus suicide. It is the degree of certainty when there is no good reason to believe otherwise, or, that you would require to make the most important decisions in your life, or, the degree of assurance that a reasonable person relies upon in his/her most important business.

"Certainty beyond a possible doubt" is 100% or absolute certainty and is a degree if certainty that we cannot achieve because it means that there are no other possibilities.

A third reviewer offered the following definitions and concepts:

Speculation: the hypothetical is possible only in the sense that the scenario does not violate the laws of physics, but cannot be taken seriously by a reasonable person. Not admissible in civil or criminal court.

Reasonable possibility. A possible scenario that is admissible in court. It may be correct, but in the expert's mind, does not rise to the level of "more likely than not."

Opinion to a reasonable degree of medical certainty (or probability). In civil court, this means that the scenario is more likely than not, and essentially is synonymous with "preponderance of evidence." In criminal court, this means two things: The scenario is more likely than not, and there are no other reasonable possibilities (another reasonable possibility translating in the jury room to reasonable doubt). The former may be regarded as the "civil standard" for and the latter as the "criminal standard." The reviewer prefers to meet the "criminal standard" in order to classify a death as homicide, and if only the "civil standard" is met, will classify the manner as undetermined or, on rare occasion, classify the manner as homicide but comment that the classification meets only the "civil standard." To classify a death as suicide, the reviewer feels that only the civil standard need be met, but as a practical matter to avoid family complaints, a desirable level of certainty for classification as suicide is "way more likely than not."

The same reviewer points our that "clear and convincing evidence" is not easily defined, and to some, equates with "reasonable degree of certainty."

[The concepts presented by the three reviewers above seem workable and fall within those presented in this Guide on Page 4. However, the categories on Page 4 seem to provide a clearer conceptual progression of "degrees of certainty." The major point is that the degree of certainty needs to be higher when classifying a death as homicide or suicide than it might need to be in determining a natural cause of death].

Degree of certainty and suicide (Principle #1, Page 8.) One reviewer thought the recommendations for degree of certainty were confusing in the context of suicide classification, and emphasized that the burden of proof should be beyond a reasonable doubt but need not be beyond a possible doubt (or beyond any reasonable doubt). [These distinctions are subtle but important, and the principle is consistent with those in this Guide. The point is that absolute certainty is not needed to classify a death a suicide, but that the degree of certainty should exceed "more likely than not." In the context of this Guide, the burden of proof would be a preponderance of evidence, clear and convincing evidence, or beyond any reasonable doubt.]

Death in a hostile environment (Principle #2, Page 8). One reviewer suggested that classification of manner of death which occurs in a hostile environment depends on whether the disease itself is life threatening. Thus, because most seizure disorders are not life threatening, a fatality from seizure in water would be classified as accident (assuming there was immersion and/or drowning), while someone with severe cardiac rhythm disturbances who collapses in water might be better classified as natural. A second reviewer agreed and also stated the he does not regard a bathtub as a hostile environment for an adult—not like a swimming pool in some circumstances. The second reviewer also feels that most cardiac deaths in water do not significantly involve increased risk of death (because the mechanism is most likely irreversible V-fib as opposed to cardiac syncope or some other reversible mechanism) and would have been as likely to be fatal out of water. [There is obviously a difference in opinion among medical examiners on this point, and selection of manner as accident or natural in such cases does not reflect competence. The principles and recommendations in this Guide indicate that preference should be given to the non-natural manner of death if the hostile environment is thought to have accelerated death or significantly decreased the chances of survival. Thus, the severity and pathophysiology of underlying disease do play a role in decision making, but if the hostile environment played a role, preference is given to the non-natural manner of death. Certainly, there are instances in which role of the hostile environment is non-contributory, and a natural manner of death in such cases is appropriate].

Job-related cardiovascular death (Scenario #18). One reviewer suggested that the fatal heart attack of a firefighter putting out a fire at the scene of an arson should be classified as a homicide. [The principles and recommendations in this Guide indicate that natural death (if no smoke inhalation was involved) is the preferred option. Certain types of jobs are responsive in nature and potentially stressful from the physiologic exertion standpoint, ands certain risks are accepted. If the fire were accidental in origin, the death would probably not be classified as an accident (again, assuming that death was due solely to exertion and ASCVD, not smoke inhalation), so why classify the death as homicide if the fire were the result of arson? By extrapolation, one could then argue that

the death of any law enforcement officer from ASCVD while chasing an alleged criminal or suspect could be classified as a homicide, which does not seem appropriate and opens up cans of worms regarding job-related and other types of death.]

Therapeutic complications (Scenario #23). One reviewer pointed out that at least one jurisdiction has the option of listing the manner of death as "therapeutic complication" and the "but for" question is used in decision making. "But for the treatment, would the patient likely died at his time?" For example, a person who dies on the operating table during surgery for a ruptured abdominal aneurysm would be regarded as natural in manner. A person who dies of postoperative pneumonia following an elective cholecystectomy would be classified as a therapeutic complication. [The principles in this Guide would result in both deaths being classified as natural. The option of therapeutic complication is not available in most states. The important point is that the cause-of-death statement reflect the complication of treatment and the underlying disease or condition being treated. Therapy-related deaths and their classification of manner as accident, natural, or undetermined are covered elsewhere in this Guide and other publications].

Forcing the police to shoot to commit suicide (Scenario #24). One reviewer pointed out that these deaths can be very circumstance-dependent and some are suicides. [The principles in this guide provide room for judgment, although, in general, the recommendation is to certify such deaths as homicide—for the reasons stated in Scenario #24].

Disease and intoxication/injury (Scenario #41). One reviewer emphasizes that if an injury or intoxication plays a role in causing death, whether cited in Part I or Part II of the cause-of-death statement, death cannot be certified as natural, and that the natural classification is reserved for deaths that are exclusively (100% natural). [In general, these advisories are true. Generally, anytime an injury or poisoning is mentioned in Part I or Part II of the cause-of-death section of the death certificate, the injury or poisoning should be regarded as having contributed to death, and the manner of death should be classified as other than natural. There are rare instances, however, in which a very minor accidental trauma may exacerbate a very significant disease, as described in Scenario #41, or as might occur in a hemophiliac who is having an episode of serious bleeding that is exacerbated by what would be otherwise considered as trivial trauma. This discussion pertains to accidental trauma only. To be sure, if an accidental injury is cited in Part I or Part II, the date, time, place, and how injury occurred items must be completed. There is some debate, however, even among registrars and nosologists, whether completion of these items always requires a manner of death other than natural, especially if the injury is cited in Part II. The discussion in Scenario #41 simply suggests that this option is available on the very rare instance in which it may be needed].

Other Comments. Various other comments were offered, and they are listed here, along with editorial comments in response [bracketed]:

- Two manners of death should not be listed in a given case. For example, if an elderly person has heart disease that is exacerbated by a fall with hip fracture, one should

avoiding citing the manner as natural and accident. [One should be selected based on principles in this Guide and elsewhere (see suggested reading)].

- Using the "unclassified" option should be avoided. It is typically used as an easy way out when wanting to avoid a controversial decision. [This has been discussed above].
- Refusal to be treated or having one's treatment withdrawn is not suicide, but rather, allowing the disease to take its natural course [Agreed].
- Death due to "natural disease" is not always synonymous with natural manner of death, as may be the case in child medical neglect [Agreed].
- Susceptibility or vulnerability of the victim does not absolve the assailant of criminal responsibility, and one takes the victim as he/she finds him. [Agreed. This is the argument for classifying "scared to death" cases as homicide, among other examples].
- People who die of complications of therapy for treatment of "homicidal" injuries can be managed using a general rule: if the injury is life threatening, then the manner is homicide—if the original injury is not life threatening, then the therapeutic complication should dominate. [This brings up the concept of a supervening cause, which is a legal term. In such cases, whether an inflicted injury is life threatening will be a topic of debate, as will the relative severity of the initial injury and the complication of therapy. Most cases can probably be managed using the "but-for" principle—"but for the inflicted ("homicidal") injury, the therapeutic complication and death would not have occurred." There are cases, however, in which the injury is so trivial that classification as homicide would not be appropriate, and there are cases in which a clearly distinct, supervening cause may come into ply. An inflicted bite wound would not normally be construed as life threatening, but if death occurs from infection of the bite wound, the death may be appropriately classified as homicide, as it might be if antibiotics used to treat the infection caused fatal anaphylaxis. "But for the bite wound, death would not have occurred." Prudent medical judgment is needed in such cases. Strict dogma cannot be uniformly applied. The major points are that one needs to be able to explain his/her reasons for the classification, and in classifying the death, one should not give too much emphasis to legal definitions and interpretations.]
- One does not need to demonstrate intent to certify a death as a homicide. Intent distinguishes murder from various degrees of manslaughter and are legal distinctions that medical examiners do not make. [Agreed, and this has been addressed elsewhere in this Guide.]
- Manner of death should be classified as natural in pathologic hip fractures from osteoporosis, metastases and the like. [Agreed, and discussed elsewhere in this Guide].
- In deaths resulting from medical treatment complications, the underlying disease or injury for which treatment was given should be included in the cause-of-death statement—for example—"anaphylaxis due to penicillin treatment for gunshot wound of abdomen." [Agreed, and addressed in other publications regarding cause-of-death statements—see suggested reading.]
- By convention, we certify chronic alcoholic deaths as natural even if the person as acutely intoxicated by ethanol (only). [This is probably a common approach and appropriate in most cases because alcohol concentrations in chronic alcoholics are

difficult to interpret as to their significance. The toxicologic findings must be viewed in the context of other case information and circumstances. See Scenario #3.]

- Russian Roulette deaths need to be examined on a cases by case basis because some may be accidents due to testosterone and/or alcohol or drug intoxication. [Each case does need to be examined on its own merit. However, the interpretation of the significance of hormones and intoxicants and their effects on judgment and behavior are subjective and prone to error. For this reason, classification as suicide is the general recommendation of this Guide. See Scenario #10.]
- If a pedestrian is truck by a fleeing felon, the death of the pedestrian should be certified as homicide. [This is discussed elsewhere in this guide, and because the felony may not be established at the time of certification, among other reasons, the general recommendation in this Guide is to certify such deaths as accidents. See Scenarios #11 and #27.]
- Due to the illegal act of administering an illegal substance to another, we certify such deaths (see Scenario #15) as homicide because intent is not needed to classify a death as homicide. [The recommendations in this Guide differ, based partially on the assumption of consent of the victim and other factors. See Scenario #15.]
- The fetal death certificate may not have a place to indicate manner of death. [Agreed. But the issue may need to be addressed elsewhere, such as an investigative or autopsy report.]
- Birth related infant deaths (dystocia, nuchal cord, etc) are natural. [Agreed, as are deaths from birth-related anoxia (such as cerebral palsy) if wholly related to the birthing process and no external causes were involved.]
- One reviewer pointed out that the manner of death as recommended in Scenarios 12,13, and 14 are consistent with an epidemiological concept articulated by Haddan—that acute, solitary environmental insults tend to be regarded as accidental, while chronic repetitive insults tend to be viewed as natural. [Good (and convenient) historical point].
- One reviewer, in regard to Scenario #15, reserves the use of “overdose” for incidents in which the dose is known and excessive, and does not use the term in regard to street drugs and illicit drug use. [This is a reasonable approach and a good point. The word “overdose,” which appeared in the original version of this guide, has been replaced with “toxicity/poisoning”].

Suggested Reading

Note: Upon reading the referenced articles, you will discover that opinions and approaches vary regarding the practice of manner-of-death classification—and may vary from the recommendations in this Guide. The references are provided as background information and as resources, when needed.

Davis GG. Mind your manners part 1: History of death certification and manner-of-death classification. Am J Fornesic Med pathol 1997;18(3): 219-223

Goodin J, Hanzlick R. Mind your manners part II: General results from the National Association of Medical Examiners Manner of Death Questionnaire, 1995. *Am J Forensic Med Pathol* 1997;18(3):224-227.

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Hirsch CS, Flomenbaum M. Problem solving in death certification. ASCP Check Sample FP95-1.(FP 202). 37(1), 1995. ASCP, Chicago.

Rosenberg ML, Davidson LE, Smith JC et al. Operational criteria for the determination of suicide. J Forensic Sci 1988;33:1445-1456. Also see corresponding Letter to Editor: Donohue ER, Lifschultz BD. Discussion of operational criteria for the determination of suicide. J Forensic Sci 1989;34(5):1056-8.

Hanzlick R (ed) and the Autopsy and Forensic Pathology Committees of the College of American Pathologists. Cause-of-death statements and certification of natural and unnatural deaths: protocol and options. College of American Pathologists. Northfield, IL. 1997. Take special note of Sections 5 and 10.

Reay DT, Eisele JW, Ward R, Horton W, Bonnell HJ. A procedure for the investigation of anesthetic/surgical deaths. J Forensic Sci 1985;30(3): 822-7.

Virginia State Health Department Office of the Chief Medical Examiner. The philosophy of classification of deaths. Medico-Legal Bulletin. 1977;26(2), March-April 1997 (5 pages). Published in conjunction with the Department of Legal Medicine, Medical College of Virginia. Richmond, Virginia.

Massello W. The Proof of law in suicide. J Forensic Sci 1986;31:1000-08.

Wiecking DK. “Natural” death under non-natural circumstances. Medico-Legal Bulletin [VA] 1976;25(9):1-5.

Petty CS. Multiple causes of death: the viewpoint of a forensic pathologist. J Forensic Sci 1965;10:167.

Most standard forensic pathology texts have some discussion of cause and manner of death (Spitz and Fisher’s Medicolegal Investigation of Death has always contained a good discussion of the issues). There have also been more than 250 postings on NAME-L regarding manner of death issues and commentary. These can be viewed by NAME-L members by searching the NAME-L archives at www.listserv.emory.edu