STATE OF MARYLAND	*	IN THE
v.	*	CIRCUIT COURT
ALICIA WHITE	*	FOR
Defendant.	*	BALTIMORE CITY
	*	CASE NO. 115141036

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DEFENDANT'S MOTION *IN LIMINE*
TO PRECLUDE TESTIMONY OF CAROL ALLAN, M.D. IN WHOLE
OR IN PART AND REQUEST FOR EVIDENTIARY HEARING

NOW COMES Defendant, Alicia White, by and through her attorneys, Ivan J. Bates, Esquire, Tony N. Garcia, Esquire, Mary M. Lloyd, Esquire, and Bates & Garcia, LLC, and pursuant to Maryland Rules 4-252(d), 5-702, and the Health General article 5-311(a)(1) and files this motion *in limine* and requests that this Court issue an Order precluding the introduction into evidence of certain opinions of Carol Allan, M.D., Assistant Medical Examiner and witness statements within the report of Carol Allan, M.D., for the State of Maryland, and for reasons states:

I. INTRODUCTION

The State of Maryland (the "State") identified Carol Allan, M.D. ("Dr. Allan") as an expert in forensic pathology in its case against Defendant.

By way of background, on April 19, 2015 at approximately 6:00 a.m., Freddie Carlos Gray, Jr. ("Mr. Gray") was pronounced dead at the University of Maryland Medical Center. *See* **Exhibit 1,** Office of the Chief Medical Examiner's Autopsy Report.[1] The

[1] In light of the sensitive nature of the information contained in the autopsy report, it will not be attached as an exhibit, but will be made available for the Court's review at a hearing, with a

Office of the Chief Medical Examiner was notified shortly thereafter. *Id.* On April 20, 2015, Dr. Allan performed an autopsy examination of Mr. Gray. The death investigation and autopsy of Mr. Gray were performed pursuant to Md. Code Ann., Health General §§5-309, 5-310. On April 30th, just ten days after starting the required investigation and autopsy, Dr. Allan certified that her investigation was complete and ruled that Mr. Gray's death was a homicide. This opinion served as a basis for the charges again Defendant.[2]

Dr. Allan also opined as to the type of injury, the timing of injury and the mechanism of injury relating to Mr. Gray's death. These opinions are based, in large part, on witness statements contained within Dr. Allan's report. These opinions, as well as her determination regarding manner of death, as well as the witness statements that her determination is based upon should also be precluded, because Dr. Allan failed to employ a reliable methodology and does not have a factual basis to support her opinions. Also, the statute precludes the inclusion of witness statements within the report.

II. DR. ALLAN'S PURPORTED "FACTUAL BASIS"[3]

In the "opinion" section of the autopsy report, Dr. Allan noted that the cause and manner of Mr. Gray's death were based on 1) autopsy findings, 2) a review of unidentified

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request that the document be filed under seal.

[2] "The findings of our comprehensive, thorough and independent investigation, coupled with the medical examiner's determination that Mr. Gray's death was a homicide that we received today, has led us to believe that we have probable cause to file criminal charges." State's Attorney Marilyn Mosby, May 1, 2015.

[3] Porter reserves the right to dispute the accuracy of the limited "facts" upon which Dr. Allan purportedly based her opinion.

medical records, 3) "the investigation of the circumstances surrounding the death," including "available witness statements [not identified], captured scene videos [not identified] and examination of the police transport vehicle." Dr. Allan then recounted certain information based on witness statements that purportedly served as a basis for her conclusions:

Stop 1 (arrest scene):

- Mr. Gray exhibited both verbal and physical resistance.
- Mr. Gray was able to bear weight on his legs and was actively speaking.
- After Mr. Gray was handcuffed and placed on the bench inside the transport van, the doors to the van were shut. Mr. Gray then began to yell and bang on the van, causing the van to rock.

Stop 2:

- The van stopped shortly thereafter and officers removed Mr. Gray and placed leg restraints on Mr. Gray because he was still yelling and shaking the van.
- After restraints were placed on Mr. Gray, he was slid into the van head first on his stomach. He remained verbally and physically active.

Stop 3:

- The van driver stopped and exited to look at back of the van.

Stop 4:

- The van driver called for assistance and pulled over.
- An officer arrived. When the van door was opened, Mr. Gray was head first on his stomach.
- Mr. Gray allegedly asked for help, "saying he couldn't breathe, couldn't get up and needed a medic."
- Mr. Gray was placed back on the bench.

Stop 5:

- The van "continued on its way until it was diverted to pick up another individual who was in custody."

- Mr. Gray was seen kneeling on the floor facing the front of the van and slumped to the right.

- Mr. Gray seemed lethargic and provided minimal responses to questions.

Stop 6 (Western District):

- During route between Stop 5 and Stop 6, the second detainee heard banging and kicking through the metal divider.

- On arrival, Mr. Gray was found kneeling, unresponsive and not breathing.

- Medics were called and life-saving procedures were started.

- Mr. Gray was ultimately transported to Shock Trauma.

UMMC:

- On admission, Mr. Gray tested positive for the presence of opiates and cannabinoid.

- A CT of Mr. Gray's head was negative for intracranial bleeding or fractures.

- Mr. Gray was diagnosed with an unstable C4/C5 fracture/dislocation with high grade spinal canal compromise as well as a left vertebral artery injury.

- Mr. Gray also had various other findings, including a tiny left interventricular hemorrhage, near transection of the spinal cord and ligamentous injuries.

- Mr. Gray had an episode of pulseless electrical activity on April 19th and could not be resuscitated, resulting in his death.

III. DR. ALLAN'S OPINIONS

Based on the above, as well as her autopsy examination, Dr. Allan provided the following opinions:

A. <u>Type of Injury</u>.

1. The spinal injury sustained by Mr. Gray was a "high energy injury most often caused by abrupt deceleration of a rotated head on a hyperflexed neck, such as seen in shallow water diving incident."

2. A severe and unstable cervical spine fracture/dislocation of this type would be "immediately symptomatic," namely "difficulties in breathing and movement."

3. "Injury at this level of the spinal cord would have caused a loss of function of the limbs and have direct effects on the mechanics of respiration through partial to near total paralysis of the diaphragm, the full function of which depends on the nerves associated with the part of the spinal cord that was damaged."

B. <u>Timing of injury</u>.

1. His injury was "most consistent with Mr. Gray sustaining the injury in the police van sometime after the 2nd stop where ankle restraints were placed" and he was placed on his stomach "and before the 4th stop when the driver called for assistance" at which time he again was found on his stomach.

2. "As the fracture/dislocation was considered very unstable, it is ***unclear*** whether the spinal cord lesion was complete, as documented in the admission studies, ***or*** in the spectrum of spinal concussion or contusion at the time of the fracture/dislocation in the van with the evolution of the spinal cord injury during the movement of Mr. Gray to the bench, the subsequent stops and the motion of the van."

3. "[T]he time the injury most likely occurred was after the 2nd but before the 4th stop of the van, and ***possibly*** before the 3rd stop when a video showed the driver stopping, stepping out and looking in the back of the van."

4. "Based on the sequence of events and the described ***progressive*** alteration of mental and physical status, Mr. Gray's neck injury occurred while in custody, in and during transport in the police van."

C. <u>Mechanism of injury</u>.

1. A "high energy injury" like the one sustained by Mr. Gray was "less likely to occur" while he was lying on his stomach.

2. Although placed on his stomach at the second stop, he "would have been able to get to his feet using the bench side and the opposite wall."

3. Due to the size of the van and because he was not belted with the safety belts that were present in the van, when Mr. Gray decided to get out of the position the police placed him, he "would have been hunched over" and because of the obstructed view of the roadway, "would have had trouble anticipating the van's motion." As a result, he was "at risk for an unsupported fall during acceleration or deceleration of the van."

4. Specifically, as to the van movements, "[a]n unexpected turning motion, acceleration or deceleration of the van would have precipitated him into the side walls, the door ***or*** the front of the van, ***depending on his position***, resulting in the left posterior impact to his head with injury to the spinal cord."

5. "***If*** the motion/acceleration/deceleration of the van was abrupt enough, given the confined space in the vehicle, it is ***possible*** that his neck injury occurred with him in a partially reclining position ***or*** as he was changing his position on the floor of the van."

6. "The reported kicking heard after the 4th stop would not have been possible; however, a seizure resulting from decreased oxygen supply to the brain may have caused the banging noise reportedly heard from Mr. Gray's compartment."

D. <u>Manner of Death</u>.

1. "Safety equipment was available but not used. Therefore it was not an unforeseen event (a medico-legal definition of an accident) that a vulnerable individual was injured during operation of the vehicle, and that without prompt medical attention, the injury would prove fatal."

2. "Due to the failure of following established safety procedures through acts of omission, the manner of death is best certified as a Homicide."

Dr. Allan should be precluded from testifying as to the timing of Mr. Gray's neck injury, the mechanism of how the injury occurred and that his death is a homicide. By her own admission, her opinions are based on possibilities, speculation, and theories that have no factual support. Her lack of a purported factual predicate is likely due to her failure to follow a generally accepted methodology in reaching her conclusions. As a result, her

opinions fail to meet the threshold admissibility requirements of Maryland Rule 5-702 and should be excluded.

IV. ARGUMENT

A. Restrictions On Expert Testimony Pursuant To Maryland Rule 5-702.

The plain language of the rule provides the factors a trial court must consider in deciding upon the admissibility of expert testimony. *See Food Lion, Inc. v. McNeill*, 393 Md. 715, 730 (2006) ("That rule governs the admissibility of expert testimony and describes the basic standard to be applied when the inquiry is into its admissibility.") (internal citations omitted); *see also Giant Food, Inc. v. Booker*, 152 Md. App. 166, 182 (2003) *cert. denied* 378 Md. 166, 831 A.2d 481 (2003) ("The rule itself delineates three factors a court must evaluate for admission of expert testimony."). Specifically, the rule states:

> **Rule 5-702. Testimony by experts.**
>
> Expert testimony may be admitted, in the form of an opinion or otherwise, if the court determines that the testimony will assist the trier of fact to understand the evidence or to determine a fact at issue. In making that determination, the court ***shall*** determine (1) whether the witness is qualified as an expert by knowledge, skill, experience, training, or education, (2) the appropriateness of the expert testimony on a particular subject, and (3) whether a sufficient factual basis exists to support the expert testimony.

Md. Rule 5-702 (emphasis added).

The Court of Appeals has specifically "rejected the argument that the adequacy of the basis for the opinion of an expert goes only to the weight to be given to the expert's testimony, and not to its admissibility as evidence." *Beatty v. Trailmaster Products Inc.*, 330 Md. 726, 741 (1993) (citing *Evans v. State,* 322 Md. 24 (1991)). *See also Terumo*

Med. Corp. v. Greenway, 171 Md. App. 617, 624 (2006) ("If a proffered expert opinion, properly challenged, fails the Rule 5-702 test in any respect, it does not come into evidence at all. It does not come halfway in, with less than full efficacy. Under Rule 5-702, the evidence is either in or out."); *Carter v. Shoppers Food Warehouse*, 126 Md. App. 147, 157 (1999) (disagreeing with the contention that an objection to the factual basis of an expert's opinion goes to weight not admissibility). To qualify as admissible evidence, the expert's proffered testimony must first be subjected to the above requirements of Rule 5-702. *See Sippio v. State*, 350 Md. 633, 648 (1998).

The trial judge is given the sole discretion under the rule to determine whether the expert testimony is sufficiently reliable to be admitted into evidence. *Montgomery Mut. Ins. Co. v. Chesson*, 399 Md. 314, 327 (2007); *Kleban v. Eghrari-Sabet*, 174 Md. App. 60, 99-100 (2007). "It is well settled that the trial judge - not the expert witness - determines whether there exists an adequate factual basis for the opinion at issue." *Wood v. Toyota Motor Corp.*, 134 Md. App. 512, 523 (2000) *cert. denied* 362 Md. 189, 763 A.2d 735 (2000) (citing *Madden v. Mercantile-Safe Deposit & Trust Co.*, 27 Md. App. 17, 44 (1975)). The Court of Special Appeals has emphasized that "simply because a witness has been tendered qualified as an expert in a particular occupation or profession, it does not follow that the expert may render an unbridled opinion, which does not otherwise comport with Md. Rule 5-702." *Booker*, 152 Md. App. at 182.

An expert's opinion, "must reflect the use of reliable principles and methodology in support of the expert's conclusions." *Booker,* 152 Md. App. at 182 (quoting from *Wood,* 134 Md. App. at 523-525). For the most part, to be admissible, the expert's opinion must

be generally accepted within the expert's scientific field. *Wagner v. State,* 160 Md. App. 531, 547-548 (2005). *See also NBS, Inc. v. Harvey,* 121 Md. App. 334, 338-340 (1998); *Keene Corp. v. Hall,* 98 Md. App. 641, 648, 660 (1993). An opinion must be excluded under the rule where it is not the product of reliable principles and methodologies. *Wood,* 134 Md. App. at 523.

Additionally, the Court of Appeals has stated, "'[a]n expert's judgment has no probative force unless there is a sufficient basis upon which to support his conclusions.'" *Beatty*, 330 Md. at 741 (quoting *Bohnert v. State*, 312 Md. 266, 275 (1988)). Therefore, a court must look to the reasons for or the bases of an expert's conclusions in order to determine whether the testimony is admissible. *See id.* (quoting *Surkovich v. Doub*, 258 Md. 263, 272 (1970)) (It is well established that "'an expert's opinion is of no greater probative value than the soundness of his reasons given therefore will warrant.'"). To that end, an expert may not furnish a "because I say so" explanation for her conclusions. *See Wood*, 134 Md. App. at 525 (citing *Beatty*, 330 Md. at 741). Conjecture and speculation do not constitute an adequate factual basis. *See Booker*, 152 Md. App. at 182-83.[4] As stated by the Court of Appeals,

> "'The premises of fact must disclose that the expert is sufficiently familiar with the subject matter under investigation to elevate his opinion above the realm of conjecture and speculation, for no matter how highly qualified the

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[4] As explained by the court in *Porter Hayden v. Wyche*, 128 Md. App. 382 (1999), "experts cannot simply hazard guesses, however educated, based on their credentials. Instead, expert testimony must be sufficiently definite and certain to be admissible, for neither the Courts nor the juries are justified in inferring from mere possibilities the existence of facts, and they cannot make mere conjecture or speculation the foundation of their verdicts. Speculative testimony must thus be considered incompetent. Furthermore, Rule 5-702 requires that expert testimony be sufficiently grounded in fact." *Id.* at 391 (internal quotations and citations omitted).

> expert may be in his field, his opinion has no probative force unless a sufficient factual basis to support a rational conclusion is shown. The opinion of an expert, therefore, must be based on facts, proved or assumed, sufficient to form a basis for an opinion, and cannot be invoked to supply the substantial facts necessary to support such conclusion. The facts upon which an expert bases his opinion must permit reasonably accurate conclusions as distinguished from mere conjecture or guess.'"

Beatty, 330 Md. at 741 (quoting *State Health Dep't. v. Walker*, 238 Md. 512, 520 (1965) (internal quotations omitted)). *See also City Homes, Inc. v. Hazelwood*, 210 Md. App. 615, 691 (2013) (holding that the trial court abused its discretion in permitting expert testimony that "amounted to a 'because I think so,' or 'because I say so,' situation"). In order to meet the sufficient factual basis prong, "the facts upon which an expert bases his opinion must permit reasonably accurate conclusions." *Sippio,* 350 Md. at 653. In the absence of facts, there will be no way "to avoid opinions which are speculative." *See Jones v. State,* 343 Md. 448 (1996) (insufficient factual basis for police officer's expert opinion that substance felt in defendant's pocket was crack cocaine); *Evans v. State*, 322 Md. 24 (1991) (insufficient factual basis for psychologist's conclusion that defendant suffered from a "mental disorder").

A trial court is within its discretion to exclude an expert's opinion if that opinion is "based upon a premise which is shown to be unsound or faulty." *Franch v. Ankney*, 341 Md. 350, 364, 670 A.2d 951, 958 (1996) (citing *Evans,* 322 Md. at 34-35). The decision "to admit or limit expert testimony... will seldom constitute grounds for reversal." *Johnson v. State*, 303 Md. 487, 515, 495 A.2d 1, 15 (1984) (citing *Stebbing v. State* 299 Md. 331, 350, 473 A.2d 903, 912 (1984)). Moreover, a trial judge is "not barred from striking expert

opinions that are based on an unsound or deficient premise simply because those opinions are vital to a party's case." *Id.* at 365, 670 A.2d at 958.

Dr. Allan's opinions in this case regarding the timing of the injury, how the injury occurred and her resultant conclusion that Mr. Gray's death was a homicide are based entirely on conjecture and guess work. Dr. Allan arrived at her opinions by failing to employ a methodology that is commonly accepted in her field. Further, Dr. Allan's role as Assistant Medical Examiner does not allow her to avoid the application of Maryland Rule 5-702. A medical examiner's opinion, "as with all lay and expert opinion testimony, is subject to certain requirements in order to qualify as admissible evidence in a court of law." *Sippio*, 350 Md. at 648. Simply put, Dr. Allan's opinions do not meet these threshold requirements and should be excluded.

B. The Proffered Testimony of Dr. Allan Fails to Meet the Requirements of Maryland Rule 5-702.

1. Dr. Allan failed to adhere to recommended practices in the performance of the death investigation, autopsy and in reaching her conclusions regarding manner of death.

The State of Maryland's Office of the Chief Medical Examiner ("OCME") is accredited by the National Association of Medical Examiners (NAME). *See* www.thename.org. According to Dr. Allan, NAME is an association of medical examiners "who set the standards for practice of forensic pathology in the United States." *See* Trial Testimony of Dr. Allan (*State v. Brueckmann*) at 167, attached hereto as **Exhibit 2**. NAME has a governing body that has promulgated certain rules and regulations. *Id.* NAME evaluates facilities like Maryland's OCME to ensure that the facility meets the

standards it promulgates. *Id.* at 168. According to Dr. Allan, NAME has certain protocols that are used for all autopsies. *Id.* at 173.

NAME has promulgated Forensic Autopsy Performance Standards. *See* **Exhibit 3.**[5] This document sets forth the standards to be complied with in medicolegal death investigations and forensic autopsies. Investigations typically involve interviews, and review of records, and may involve scene investigations and a forensic autopsy. *See id.* at Section A. These investigations must be done cooperatively, but independent from, law enforcement and prosecutors to ensure that a neutral and objective medical assessment of the cause and manner of death is performed. *See id.* at Standard A1.

Prior to the performance of an autopsy, a forensic pathologist is required to review all available information that relates to the circumstances of death. *See id.* at Standard D9. "Just as a surgeon does not operate without first preparing a history and physical examination, so must the forensic pathologist ascertain enough history and circumstances...to direct the forensic autopsy toward relevant case questions." *Id.* Additionally, after the autopsy examination has concluded, a forensic pathologist's "interpretations and opinions must be formulated *only after* consideration of available information and *only after* all necessary information has been obtained." *See id.* at Standard B5 (emphasis added). NAME considers this review of all information necessary to promote competent and objective death investigations. *See id.* at Standard A1.2 ("A

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[5] Based on Dr. Allan's prior sworn testimony, and pursuant to Maryland Rule 5-201, Porter requests that the Court take judicial notice of NAME's publications. *See Stevenson v. State,* 222 Md. App. 118, 132 (2015).

forensic pathologist or representative shall evaluate all circumstances surrounding all reported deaths."). The report must include "descriptions of findings in sufficient detail to support diagnoses, opinions, and conclusions." *See id.* at Standard H31.

Defendant has not been provided with a list of all of the materials reviewed by or information provided to Dr. Allan before she began her external examination. Defendant also does not know the documents she reviewed or the information she was provided before reaching her conclusions and opinions. It has been represented, however, that everything that Dr. Allan provided to the State's Attorneys' Office has been turned over to Defendant. It also has been represented that any notes, an investigation file and documents generated by anyone else at the OCME in connection with Mr. Gray's death do not exist. The failure to maintain such documents (or generate them in the first place) is contrary to Maryland law.[6]

Based upon Defendant's investigation, it is believed that Dr. Allan began her autopsy examination on April 20th prior to obtaining any medical records,[7] witness statements or interviews and before conducting any scene investigation. The

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[6] Pursuant to Md. Code Ann., Health General §5-309(c), the medical examiner or investigator *shall* investigate fully the essential facts concerning the medical cause of death and, before leaving the premises, reduce those facts and the names and addresses of witnesses to writing, which *shall* be filed in the medical examiner's office. Additionally, §5-311(a) requires that the OCME *shall* keep complete records on each medical examiner's case. The records shall be indexed and include, among other things, "all other available information about the death." Finally, COMAR 10.35.01.05 states that when the medical examiner has made a determination of the cause and manner of death, the medical examiner *shall* complete the death certificate. A death certificate has not been provided.

[7] It is unknown when Dr. Allan was provided Mr. Gray's medical records and imaging studies from UMMC.

performance of the autopsy without having any information is in violation of NAME standards. After she had completed her examination, it is believed that Dr. Allan met with certain police officers on two occasions. At these meetings, the officers verbally provided Dr. Allan with information and she took notes. As previously stated, it has been represented that Dr. Allan's notes no longer exist. It is believed that Dr. Allan was told orally of the statements made by the second detainee in the van. Upon information and belief, Dr. Allan did not obtain any documents, investigatory notes, witness statements or videos during these meetings.

It is also believed that at some point prior to completing her report, she met the State's Attorneys' Office to provide a preliminary oral report. Upon information and belief, during this meeting, Dr. Allan was provided with the statements of some of the officers charged in connection with Mr. Gray's death. The purpose of the meeting is not known, although it tends to call into question the required independence Dr. Allan is supposed to have as a medical examiner. It is unclear what independent investigation (if any) was conducted by Dr. Allan and the OCME. As discussed more fully below, the lack of investigation and review of necessary and available materials may explain the resulting speculation and guess-work set forth in her report.

Additionally, Dr. Allan's conclusions regarding the classification of the manner of Mr. Gray's death are inconsistent with NAME guidelines. NAME promulgated "A Guide for Manner of Death Classification." *See* **Exhibit 4**.[8] NAME defines the term "accident"

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[8] NAME's distinctions between the various manner of death classifications have been incorporated by the Center for Disease Control's Medical Examiners' and Coroners' Handbook on

as an injury that causes "death and there is little or no evidence that the injury.... occurred with the intent to harm or cause death. In essence, the fatal outcome was unintentional." *Id.* at 6. The concept of "foreseeability" used by Dr. Allan in rejecting that Mr. Gray's death was an accident is not found in the basic, general rules set forth by NAME.

It also appears that Dr. Allan acted contrary to accepted practices in her field and improperly relied upon (and interpreted) certain rules and regulations in reaching her conclusion that the manner of Mr. Gray's death was a homicide. When reaching a determination as to the manner of death, NAME advises medical examiners, like Dr. Allan, to "avoid, to the extent possible, interpretation of specific statutes as they may apply to a specific case in question." *Id.* The reason for this admonition is clear and simple- - "this principle minimizes the need for the certifier to rely upon reported, often circumstantial third party or hearsay information and evaluate these data it [sic] in the context of the applicable criminal law, a function better suited to others in the criminal justice system." *Id.* Accordingly, reliance on statutes (or rules or regulations that require interpretation of their application to certain situations) is inappropriate when reaching a conclusion as to the manner of death.

Upon information and belief, Dr. Allan relied on a Baltimore City Police Department General Order in determining whether the police followed "established safety procedures." It is because of the "failure to follow established safety procedures through acts of omission" that Dr. Allan concluded that "the manner of death is best

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Death Registration and Fetal Death Reporting (2003 Revision). *See www.cdc.gov/nchs/data/misc/hb_me.pdf.*

certified as a Homicide." Reliance on a General Order that she interpreted to impose certain duties on the police officers is inappropriate and is contrary to NAME's general principles. Indeed, whether such a duty existed is a question better suited for "others in the criminal justice system," namely the judge (as an initial matter) and jury.

Reliance on a General Order specific to the Baltimore City Police Department as a basis for her manner of death determination is particularly inappropriate where the application of the same facts in a jurisdiction that did not have "established safety protocols" would yield a different result. The Court of Appeals of Maryland has held that a failure to follow "'recently imposed and geographically unique guidelines...was not inherently wrong or of a *malum in se* character.'" *State v. Pagotto*, 361 Md. 528, 551 (2000) (quoting *Pagotto v. State*, 127 Md. App. 271, 310-11 (1999)). The Court agreed that "except for a criminal violation of a local municipal or county ordinance, precisely the same act under the precisely the same circumstances cannot be a crime in Baltimore City but not a crime in Baltimore County." *Id.* By extension, it seems clear that a death cannot be ruled a homicide in Baltimore city that, under the same circumstances, would not be ruled a homicide in Baltimore County. This supports NAME's principle that a medical examiner should <u>not</u> rely on the interpretation of statutes, rules and regulations as they may apply to a specific case.

Based on the information known at this time, Dr. Allan did not follow the methodology that is generally accepted in her field or required by Maryland law. She did not review all available information prior to reaching her conclusions. In making her determination on the manner of death, she failed to follow the guiding principles of

NAME, the entity that sets "the standards for practice of forensic pathology in the United States." **Ex. 2** at 167. The failure to follow the appropriate methodology renders Dr. Allan's opinions in total unreliable and inadmissible.

2. Dr. Allan's opinions on when and how Mr. Gray's injury occurred are based on speculation and lack a factual predicate.

Based on the information relied upon by Dr. Allan, she stated that Mr. Gray was placed on his stomach at Stop 2. She also stated that Mr. Gray was found on his stomach at Stop 4. She opined that the injury did not likely occur while he was on his stomach. Despite having absolutely no information regarding his movements between Stop 2 and Stop 4 (and none was set forth in her report), Dr. Allan opined that Mr. Gray's injury occurred between those two stops and speculated as to his movements in order for the facts to fit her theory. In order to reach her conclusion, she guesses, without any factual support, that Mr. Gray was able to get to his feet from his position on the floor and **if** he did get to his feet, he would have been hunched over. She states that because Mr. Gray could not see the road, he would have had trouble anticipating movement and his restraints would have preventing him from supporting a fall.

Without any factual support, she opined that Mr. Gray experienced an unexpected turning motion **or** an unexpected acceleration **or** an unexpected deceleration. She also stated that this unexpected movement (which she cannot identify and for which there is no evidence) precipitated Mr. Gray into the side walls **or** the door **or** the front of the van. Dr. Allan cannot identify where Mr. Gray purportedly made contact with the van's interior that could cause a "high energy injury" because it would "**depend on his position**"- - a position

that she does not know. Her inability to give a cogent and concise explanation of how Mr. Gray's injury occurred is because she has no evidence to support her theory.

Dr. Allan admitted as much in her report. She admitted that she had no evidence of abrupt turning motions, acceleration or deceleration. This is evident in the following passage from her report (which is replete with unsupported hypotheticals):

> "***If*** the motion/acceleration/deceleration of the van was ***abrupt enough***, given the confined space in the vehicle, it is ***possible*** that his neck injury occurred with him in a partially reclining position ***or*** as he was changing his position on the floor of the van."

It is obvious that Dr. Allan does not know, and has no facts to support, when or how the injury occurred. To offer an opinion without any factual support amounts to nothing more than impermissible *ipse dixit.*

It is anticipated that the State will argue that Dr. Allan's opinions are supported by the "facts" indicating a "progressive alteration of mental and physical status." This does not comport with the injury described by Dr. Allan. Dr. Allan stated that Mr. Gray's fatal neck injury was a "high energy injury most often caused by abrupt deceleration of the head on a hyperflexed neck." She likened it to a shallow water diving incident. The type of fracture/dislocation Dr. Allan claimed Mr. Gray had was "severe and unstable" causing immediate symptoms of a loss of function of the limbs and a partial to near total paralysis of the diaphragm. In light of this loss of function, she cannot and does not explain how Mr. Gray would have been able to maneuver himself from the bench where he was placed at Stop 4 to the kneeling position he was found in at Stop 5.

Dr. Allan's progressive theory is further found lacking in factual support by the very

inconvenient and uncontroverted fact of the reported statements by the second detainee. Without citing to any medical evidence in the record, she claims that the banging and kicking heard by the second detainee was not "possible" and that what was heard "*may*" have been caused by a seizure. Dr. Allan does not explain how it is "possible" for someone who has a severe and unstable fracture with a loss of limb function and difficulty (or the inability) to breathe to have a seizure that could cause the noise heard by the second detainee, nor does she have any evidence to of any sort to support that Mr. Gray suffered a seizure.[9]

In the end, because of her lack of factual support, Dr. Allan admitted that she did not know when and how the fatal injury occurred:

> As the fracture/dislocation was considered very unstable, it is ***unclear*** whether the spinal cord lesion was complete, as documented in the admission studies, ***or*** in the spectrum of spinal concussion or contusion at the time of the fracture/dislocation in the van with the evolution of the spinal cord injury during the movement of Mr. Gray to the bench, the subsequent stops and the motion of the van.[10]

Dr. Allan's admitted lack of clarity and her reliance on possibilities and conjecture

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[9] Additionally, in the absence of medical facts upon which she relied, Dr. Allan is not permitted to assess and reject the credibility of a witness when providing her expert opinion. *See Braxton v. State,* 123 Md. App. 599, 651 (1998) ("[A]n expert's opinion is inadmissible when it 'encroache[s] on the jury's function to judge the credibility of the witnesses and weigh their testimony and on the jury's function to resolve contested facts.'" (quoting *Bohnert v. State*, 312 Md. 266, 279 (1988)). In this case, the inadmissibility of Dr. Allan's opinion that the second detainee did not hear kicking and banging during his transport to the Western District is compounded by the fact that she identifies no evidence controverting the second detainee's observations.

[10] Notably, Dr. Allan does not indicate when or how Mr. Gray may have sustained these hypothetical spinal "concussions" or "contusions."

make her opinions inherently unreliable and of no assistance to a jury. Accordingly, Dr. Allan's opinions regarding the time of injury and how the injury occurred do not meet the threshold admissibility requirements of Maryland Rule 5-702 and should be excluded.

3. Dr. Allan's opinions regarding when and how the injury occurred are inherently unreliable and are based on an unsound methodology. Therefore her conclusion regarding the manner of death is inadmissible.

Dr. Allan's determination that the manner of death was a homicide[11] is based on the above speculative facts and resultant incongruous opinions. Her arrival at this determination based on her failure to follow the accepted methodology and an insufficient factual predicate renders her opinions *per se* inadmissible.

Dr. Allan also suggests that because Mr. Gray was in custody and a seat belt was not used, this also makes his death a homicide. This ignores Dr. Allan's own opinion that had Mr. Gray remained on the floor, in the position he was placed by the police and during the time frame she claims the injury occurred, it is **not likely** that Mr. Gray would have sustained his fatal neck injury. Furthermore, Dr. Allan fails to even consider or discuss whether Mr. Gray could have removed the seat belt, had one been employed.

Dr. Allan also suggested that the manner of death was a homicide because it was foreseeable that "without prompt medical attention, the injury would prove to be fatal." Yet Dr. Allan fails to set forth any facts establishing that it was known to Defendant (or anyone else) that Mr. Gray had a fatal spinal injury (or any injury for that matter).

---

[11] "Homicide" is defined as the "killing of one human being by the act, procurement or omission of another." *See Sippio*, 350 Md. App. at 654. Homicide is not necessarily a crime. *Id.*

Moreover, because she is unable to opine (without dependence on guess work) as to when the injury occurred and how it occurred, she has absolutely no basis for this statement (and none is provided in her report, which must be sufficiently detailed to support her conclusions).

More importantly, Dr. Allan stated that Mr. Gray's death was a homicide "due to the failure of following ***established*** procedures through acts and omissions." Dr. Allan did not identify these "established procedures" (much less whether such procedures were known to anyone) or how the individuals involved in the transport of Mr. Gray failed to follow them. Her conclusion that the manner of death was a homicide (as well as her conclusions related to unidentified procedures relating to seat belts and medical care) is totally unsupported and must be stricken and precluded from use at trial.

C. The witness statements contained within the Health General article Section 5-311(a)(1) should be excluded

The "statement of a witness or other individual" is specifically excluded from the definition of "record" under the Health General Article. Md. Code Ann. Health Gen. § 5-311(d)(ii). Although, the Office of the Chief Medical Examiner "shall keep complete records on each medical examiner's case," any statements of witnesses should be excluded from those records. Md. Code Ann. Health Gen. § 5-311(a)(1). This is especially true when all of those witness statements were the result of an investigation and "testimonial" in nature. "The statute specifically excludes statements in [autopsy] reports by witnesses or other person ... [o]nly the portion of the report setting forth the examination by and the medical findings of the examiner is admissible." *McClain on*

Evidence, Section 803(9):1(c). *See also Rollins v. State*, 161 Md. App. 34 (2005), *aff'd* 392 Md. 455.

It is expected that the State will seek to introduce Dr. Allan's report in Defendant's trial. However, it is clear from the above-listed authority that any witness statements that she may have relied upon must be redacted from the report prior to its admission. Further, Dr. Allan should be precluded from testifying to the facts allegedly acquired by any witness statements as they would run afoul of the Health General article and violate Defendant's right to confrontation under the Sixth Amendment and *Crawford v. Washington*, 541 U.S. 36 (2004).

V. CONCLUSION

The introduction of Dr. Allan's baseless facts and opinions would run afoul of Maryland Rule 5-702. Further, the witness statements contained within the report would be inadmissible under the Health General article Section 5-311(a)(1). Dr. Allan's opinions are inherently unreliable and provide no assistance to the jury. Her testimony in this regard is irrelevant and lacking in probative value. Because of the speculative nature of Dr. Allan's unfounded opinions, the introduction of this evidence would be highly prejudicial to Defendant.

Based on the foregoing, Defendant respectfully requests that this Court GRANT her motion *in limine* and preclude Dr. Allan from testifying as to the timing of the injury, the mechanism of injury and the manner of death.

Respectfully submitted,

Ivan J. Bates, Esquire
Tony N. Garcia, Esquire
Mary M. Lloyd, Esquire
Bates & Garcia, LLC
201 North Charles Street, Suite 1900
Baltimore, Maryland 21202
(410) 814-4600
Counsel for Defendant White

REQUEST FOR AN EVIDENTIARY HEARING

Defendant, through undersigned counsel, hereby requests an evidentiary hearing on this motion.

Ivan J. Bates

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on 15th day of January, 2016, a copy of the foregoing Motion in Limine was sent via United States Mail to Michael Schatzow, Chief Deputy State's Attorney for Baltimore City, Office of the State's Attorney for Baltimore City, 120 E. Baltimore Street, 9th Floor, Baltimore, Maryland 21202.

Ivan J. Bates, Esquire

STATE OF MARYLAND	*	IN THE
v.	*	CIRCUIT COURT
ALICIA WHITE	*	FOR
Defendant.	*	BALTIMORE CITY
	*	CASE NO. 115141036

* * * * * * * * * * * * *

ORDER

Upon consideration of Defendant White's Motion *In Limine* to Exclude Certain Testimony of Carol Allan, M.D., and any opposition thereto, the record in this case, the applicable law, and for good cause shown, it is this _____day of _____, 2016,

ORDERED, that Defendant's Motion is GRANTED, and it is further

ORDERED, that Dr. Allan is precluded from testifying as to the timing of injury, mechanism of injury and manner of death and the autopsy report shall be redacted to exclude all statements of witnesses.

_____
The Honorable Barry Williams,
Circuit Court for Baltimore City,
Maryland

IN THE CIRCUIT COURT FOR CARROLL COUNTY, MARYLAND

- - - - - - - - - - - - - - - - x

STATE OF MARYLAND :

v. : Criminal No. K-2012-43520

WILLIAM RUSSELL BRUECKMANN, :

Defendant. : Westminster, Maryland

- - - - - - - - - - - - - - - - x January 28, 2014

COPY

JURY TRIAL

WHEREUPON, proceedings in the above-entitled matter commenced.

BEFORE: THE HONORABLE THOMAS F. STANSFIELD, Judge

APPEARANCES:

FOR THE STATE:

MELISSA HOCKENSMITH, Esq.
MARIA OESTERREICHER, Esq.
Carroll County State's Attorney's Office
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P.O. Box 530
Westminster, Maryland 21157

FOR THE DEFENDANT:

GEORGE PSORAS, Esq.
CHRISTOS VASILIADES, Esq.
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1301 York Road
Suite 200
Lutherville, Maryland 21093

DEFENDANT'S EXHIBIT
tabbies
2

Td.

1 Q And sometimes a person could be murdered in one
2 jurisdiction and then the body comes to rest in Maryland, for
3 example?
4 A That is correct.
5 Q And unfortunately you have seen that based on your
6 experience doing so many autopsies in different roles,
7 correct?
8 A That is correct.
9 Q Well, let me see if I am clear. If your lab is
10 accredited, what does that mean?
11 A My lab?
12 Q The Chief Medical Examiner --
13 A Oh, okay. So, the office is accredited meaning --
14 by which one, by National --
15 Q Well, you tell me accredited -- I am asking, you
16 said it was accredited and I missed those two --
17 A Okay.
18 Q -- accreditations you were sharing.
19 A All right. So, the first accreditation from the
20 National Association of Medical Examiners. They are a --
21 association which is a group of medical examiner who set the
22 standards for practice of forensic pathology in the United
23 States. So, they have -- they set up a governing body and
24 they have rules and regulations. And they will -- come to
25 the Office of the Chief Medical Examiner or Coroner Office or

1 wherever that forensic pathology is practiced, and they
2 investigate all the procedures that occur within that office
3 to make sure that they meet the standards that are set forth
4 by the National Association of Medical Examiners.
5 So, yes, we are -- we have gone through our
6 accreditation and we have always been accredited.
7 The American College of Graduate Medicine --
8 Medical Education, is a different body. It is made of --
9 for education of -- post graduate education programs. So,
10 we are accredited in the fact that we can take people who
11 are in training -- when I was a forensic pathology fellow I
12 could do it at the Office of the Chief Medical Examiner
13 because they were accredited to teach me forensic pathology.
14 So, part of my role as a Medical Examiner is not
15 only to perform autopsies but I have a very active teaching
16 role in forensic pathology to -- forensic pathology fellows
17 who are eventually will be going on to become medical
18 examiners somewhere. Pathology resident have to -- as part
19 of their training have to spend a month at a Medical
20 Examiner's office in order for the to be -- sit for their
21 Boards, to become Certified Board Pathologists. And medical
22 students who express an interest in forensic pathology or
23 autopsy pathology.
24 Q Doctor, do you know whether or not Delaware has the
25 same accreditation as Maryland's labs, in your experience?

1 DIRECT EXAMINATION (Continued)

2 BY MS. HOCKENSMITH:

3 Q Doctor Allan, is there a specific procedure that

4 you follow when you conduct an autopsy?

5 A Yes.

6 Q And tell the ladies and gentlemen of the jury about

7 that.

8 A So, the protocols that are set forth and have been

9 or part of the accreditation by the National Association of

10 Medical Examiners, so if these protocols are approved by

11 them, is really dependent on type of death that is being

12 investigated because there are going to be slight

13 differences.

14 In a case of a suspicious or violent death the

15 individual is brought to the Office of the Chief Medical

16 Examiner. Height is taken of the person as they are lying on

17 the gurney so it is -- in the anatomic position. A weight is

18 taken. They are documented by the person who is actually

19 checking the individual into our facility, as clothing and

20 personal effects. They are given an identification number

21 which is the number that will stay with them and their

22 possessions and their -- any evidence, and it shows up on the

23 autopsy report.

24 The next procedure is that in cases of violent --

25 the step is photograph is taken and it is called the "As-is"

Forensic Autopsy Performance Standards

Prepared by:
Garry F. Peterson, M.D. (Committee Chair, 2005)
Steven C. Clark, Ph.D. (NAME Consultant)

Approved by General Membership
October 17, 2005 NAME Annual Meeting, Los Angeles, California
October 4, 2010 NAME Annual Meeting, Cleveland, Ohio

Amendments Approved by General Membership
October 16, 2006 NAME Annual Meeting, San Antonio, Texas
August 11, 2011 NAME Annual Meeting, Ketchikan, Alaska
October 8, 2012 NAME Annual Meeting, Baltimore, MD
September 22, 2014 NAME Annual Meeting, Portland, OR

(Sunset date August 11, 2016)

DEFENDANT'S EXHIBIT
3

The National Association of Medical Examiners 2012

Inspection, Accreditation and Standards Committee

David Fowler, M.D.
Chairperson

Jeffrey Jentzen, MD
Chairperson, Standards Subcommittee

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Gregory A. Schmunk, M.D.
Vice-President

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Preface

Efforts by the National Association of Medical Examiners (NAME) to promulgate practice standards began in the 1970s. These early efforts subsequently became focused on the operational aspects of medical examiner offices, resulting in the well-known NAME Office *Accreditation Checklist*. More recently, some members suggested that the time was ripe for standards that address the professional aspects of individual death investigations. Then-president Michael Bell appointed this committee to draft such standards.

The principal objective of these standards is to provide a constructive framework that defines the fundamental services rendered by a professional forensic pathologist practicing his or her art. Many forensic pathologists will exceed these minimal performance levels and are encouraged to do so.

NAME recognized that certain standards may not be applicable where they conflict with federal, state, and local laws. Deviation from these performance standards is expected only in unusual cases when justified by considered professional judgment.

National Association of Medical Examiners
Standards Committee
August 12, 2005

Committee and Panel Membership

NAME Standards Committee (2005)

Vernard I. Adams, M.D.
Michael D. Bell, M.D.
Vincent J. M. Di Maio, M.D.
Mary H. Dudley, M.D.
Karen L. Gunson, M.D.**
Charles M. Harvey, M.D.
Mary I. Jumbelic, M.D.*
Yvonne I. Milewski, M.D.
Joe A. Prahlow, M.D.
Victor W. Weedn, M.D., J.D.
Garry F. Peterson, M.D., J.D. (chair)
Tom A. Andrew, M.D.
Stephen J. Cina, M.D.*
Edmund R. Donoghue, M.D.
Marcella F. Fierro, M.D.
Randy L. Hanzlick, M.D.
John C. Hunsaker, M.D., J.D.
Bruce P. Levy, M.D.
Robert R. Pfalzgraf, M.D.
Gregory A. Schmunk, M.D.

* Completed initial survey instruments - unable to attend meetings.
** Nominated to the committee - unable to attend meetings.

Steven C. Clark, Ph.D. served as project director and Denise McNally, NAME Executive Director, provided administrative support.

External Review Panel (2005)

Mary E. S. Case, M.D.
Tracy S. Corey, M.D.
Michael A. Graham, M.D.
Jeffery M. Jentzen, M.D.
Stephen D. Cohle, M.D.
Joseph H. Davis, M.D.
Amy P. Hart, M.D.
Patricia J. McFeeley, M.D.

Section A: Medicolegal Death Investigation

The purpose of this section is to define responsibility for medicolegal death investigation and to outline the types of cases that are to be investigated by such systems. Investigations can be conducted by inquiry with or without examination. Inquiries are typically conducted via telephone interview, personal interview, or review of records. Examination may include scene investigation, external inspection, and forensic autopsy.

Standard A1 Responsibilities

Medicolegal death investigation officers, be they appointed or elected, are charged by statute to investigate deaths deemed to be in the public interest--serving both the criminal justice, civil justice and public health systems. These officials must investigate cooperatively with, but independent from, law enforcement and prosecutors. The parallel investigation promotes neutral and objective medical assessment of the cause and manner of death.

To promote competent and objective death investigations:

A1.1 Medicolegal death investigation officers should operate without any undue influence from law enforcement agencies and prosecutors.

A1.2 A forensic pathologist or representative shall evaluate the circumstances surrounding all reported deaths.

Standard A2 Initial Inquiry

Medicolegal death investigators assess each death reported to the office to determine whether it falls under their jurisdiction as outlined by statutes, rules, and regulations. The categories below are those which should receive further investigations to protect the public safety and health, and determine the cause and manner of death.

The forensic pathologist or representative shall investigate all:

A2.1 deaths due to violence.
A2.2 known or suspected non-natural deaths.
A2.3 unexpected or unexplained deaths when in apparent good health.
A2.4 unexpected or unexplained deaths of infants and children.
A2.5 deaths occurring under unusual or suspicious circumstances.
A2.6 deaths of persons in custody.
A2.7 deaths known or suspected to be caused by diseases constituting a threat to public health.
A2.8 deaths of persons not under the care of a physician.

Section B: Forensic Autopsies

The purpose of this section is to establish minimum standards for the selection of cases requiring forensic autopsy, who should perform the autopsies, need for special dissection or testing, and who is responsible for interpretations and formation of opinions.

Standard B3 Selecting Deaths Requiring Forensic Autopsies

Medicolegal death investigation officers are appointed or elected to safeguard the public interest. Deaths by criminal violence, deaths of infants and children, and deaths in the custody of law enforcement agencies or governmental institutions-- can arouse public interest, raise questions, or engender mistrust of authority. Further, there are specific types of circumstances in which a forensic autopsy provides the best opportunity for competent investigation, including those needing identification of the deceased and cases involving bodies in water, charred or skeletonized bodies, intoxicants or poisonings, electrocutions, and fatal workplace injuries. Performing autopsies protects the public interest and provides the information necessary to address legal, public health, and public safety issues in each case. For categories other than those listed below, the decision to perform an autopsy involves professional discretion or is dictated by local guidelines. For the categories listed below, the public interest is so compelling that one must always assume that questions will arise that require information obtainable only by forensic autopsy.

The forensic pathologist shall perform a forensic autopsy when:

B3.1 the death is known or suspected to have been caused by apparent criminal violence.
B3.2 the death is unexpected and unexplained in an infant or child.
B3.3 the death is associated with police action.
B3.4 the death is apparently non-natural and in custody of a local, state, or federal institution.
B3.5 the death is due to acute workplace injury.
B3.6 the death is caused by apparent electrocution.
B3.7 the death is by apparent intoxication by alcohol, drugs, or poison, unless a significant interval has passed, and the medical findings and absence of trauma are well documented.
B3.8 the death is caused by unwitnessed or suspected drowning.
B3.9 the body is unidentified and the autopsy may aid in identification.
B3.10 the body is skeletonized.
B3.11 the body is charred.
B3.12 the forensic pathologist deems a forensic autopsy is necessary to determine cause or manner of death, or document injuries/disease, or collect evidence.
B3.13 the deceased is involved in a motor vehicle incident and an autopsy is necessary to document injuries and/or determine the cause of death.

Standard B4 Forensic Autopsy Performance

Performance of a forensic autopsy is the practice of medicine. Forensic autopsy performance includes the discretion to determine the need for additional dissection and laboratory tests. A forensic autopsy must be conducted by a licensed physician who is a forensic pathologist or by a physician who is a forensic pathologist-in-training (resident/fellow).* Responsibility for forensic autopsy quality must rest with the forensic pathologist, who must directly supervise support staff. Allowing non-forensic pathologists to conduct forensic autopsy procedures without direct supervision and guidance is fraught with the potential for serious errors and omissions.

Autopsies shall be performed as follows:

B4.1 the forensic pathologist or residents in pathology perform all autopsies.
B4.2 the forensic pathologist directly supervises all assistance rendered during postmortem examinations.
B4.3 the forensic pathologist or residents in pathology performs all dissections of removed organs.
B4.4 the forensic pathologist determines need for special dissections or additional testing.
B4.5 the forensic pathologist shall not perform more than 325 autopsies in a year. Recommended maximum number of autopsies is 250 per year.

Standard B5 Interpretation and Opinions

Interpretations and opinions must be formulated only after consideration of available information and only after all necessary information has been obtained.

Autopsies shall be performed as follows:

B5.1 the forensic pathologist reviews and interprets all laboratory results the forensic pathologist requested.
B5.2 the forensic pathologist reviews all ancillary and consultative reports the forensic pathologist requested.
B5.3 the forensic pathologist determines cause of death.

* Elsewhere in these standards, where the word "pathologist" appears, it means a physician who is a pathologist or a pathologist-in-training (resident/fellow), as defined by the ACGME.

Section C: Identification

The purpose of this section is to establish procedures for sufficient identification of the deceased, to document information needed to answer questions that may later arise, and to archive information needed for putative identification before burial of unidentified remains.

Standard C7 Standard Identification Procedures

Methods of identification are determined on an individual case basis, but can include viewing of the remains, either directly or by photograph, and comparison of dentition, fingerprints, or radiographs. A photograph of the face, labeled with the case number, documents and preserves the appearance at the time of identification. The same photograph can also be used to minimize and prevent potential errors when multiple fatality incidents occur. When more traditional methods fail in the determination of identification, a routinely-obtained DNA sample may be used to link the remains either to a known antemortem or kindred sample. In addition, a DNA specimen is particularly important for later questions of identity as well as for potential familial genetic analysis and criminalistic comparisons. Preservation of all data used to determine identification is necessary to address future questions and can provide the opportunity for a second objective determination of identification.

In support of identification of the body:

C7.1 the forensic pathologist assesses the sufficiency of presumptive identification.
C7.2 the forensic pathologist or representative takes identification photographs with case number in photograph.
C7.3 the forensic pathologist or representative obtains and archives specimen for DNA on all autopsied cases.

Standard C8 Procedures Prior to Disposition of Unidentified Bodies

Prior to disposition of the unidentified remains, inventory and archiving of potentially useful objective data are required. A forensic autopsy can disclose medical conditions useful for identification. Full-body radiographs document skeletal characteristics and radio-opaque foreign bodies such as bullets, pacemakers, and artificial joints. Dental charting and radiography preserve unique dental characteristics. The documentation of a decedent's clothing and personal effects archives details that are familiar to the next-of-kin. Careful preservation and archiving provide an objective basis for future identification and thereby avoid the need for exhumation.

Prior to disposition of an unidentified body the forensic pathologist shall:

C8.1 perform a forensic autopsy.
C8.2 take or cause to be taken radiographs of head, neck, chest, extremities, and torso in their entirety.
C8.3 cause the dentition to be charted and x-rayed.
C8.4 document or cause to be documented decedent's clothing and personal effects.

Section D: External Examinations: General Procedures

The purpose of this section is to establish minimum standards for the external examination of all bodies.

Standard D9 Preliminary Procedures

These standards underscore the need for assessment of all available information prior to the forensic autopsy to (1) direct the performance of the forensic autopsy, (2) answer specific questions unique to the circumstances of the case, (3) document evidence, the initial external appearance of the body, and its clothing and property items, and (4) correlate alterations in these items with injury patterns on the body. Just as a surgeon does not operate without first preparing a history and physical examination, so must the forensic pathologist ascertain enough history and circumstances and may need to inspect the body to decide whether a forensic autopsy is indicated and to direct the forensic autopsy toward relevant case questions.

Preliminary procedures are as follows:

D9.1 forensic pathologist reviews the circumstances of death prior to forensic autopsy.
D9.2 forensic pathologist or representative measures and records body length.
D9.3 forensic pathologist or representative measures and records body weight.
D9.4 forensic pathologist examines the external aspects of the body before internal examination.
D9.5 forensic pathologist or representative photographs, or forensic pathologist describes decedent as presented.
D9.6 forensic pathologist documents and correlates clothing findings with injuries of the body in criminal cases.
D9.7 forensic pathologist or representative identifies and collects trace evidence on clothing in criminal cases.
D9.8 forensic pathologist or representative removes clothing.
D9.9 forensic pathologist or representative photographs or lists clothing and personal effects.

Standard D10 Physical Characteristics

The external examination documents identifying features, signs of or absence of disease and trauma, and signs of death. Recording identifying features provides evidence for or against a putative identification. Recording signs of disease and trauma is a primary purpose of the forensic autopsy.

The forensic pathologist shall:

D10.1 document apparent age.
D10.2 establish sex.
D10.3 document or describe apparent race or racial characteristics.
D10.4 describe hair.
D10.5 describe eyes.
D10.6 describe abnormal body habitus.
D10.7 document prominent scars, tattoos, skin lesions, and amputations.
D10.8 document presence or absence of dentition.
D10.9 inspect and describe head, neck, thorax, abdomen, extremities, and hands.
D10.10 inspect and describe posterior body surface and genitals.
D10.11 document evidence of medical or surgical intervention.

Standard D11 Postmortem Changes

Recording *livor mortis* helps to answer later questions about bruises and body position. Notation of postmortem artifacts is useful for interpretation of subsequent forensic autopsy findings. Each of these may be useful in estimation of the postmortem interval.
The forensic pathologist shall:

D11.1 describe *livor mortis*.
D11.2 describe postmortem changes.
D11.3 describe evidence of embalming.
D11.4 describe decompositional changes.
D11.5 describe rigor mortis.

Section E: External Examinations: Specific Procedures

The purpose of this section is to establish minimum standards for external examination of bodies with documentation of injuries or suspected sexual assault.

Standard E12 Suspected Sexual Assault

Collection of swabs, combings, clippings, and trace evidence may be necessary to 1) determine if sexual assault occurred; 2) link multiple, apparently unrelated deaths; or 3) link the death to an assailant. DNA analysis is now the test of choice on swabs, hair, and fingernail clippings. These collections shall be performed in accordance with the requirements of the crime laboratory procedures.

The forensic pathologist or representative shall, prior to cleaning the body:

E12.1 collect swabs of oral, vaginal, and rectal cavities.
E12.2 collect pubic hair combings or tape lifts.
E12.3 collect fingernail scrapings or clippings.
E12.4 collect pubic and head hair exemplars.
E12.5 identify and preserve foreign hairs, fibers, and biological stains.

Standard E13 Injuries: General

Documentation of injuries may be necessary to determine the nature of the object used to inflict the wounds, how the injuries were incurred, and whether the injuries were a result of an accident, homicide, or suicide. Written, diagrammatic, and photographic documentation of the injuries may be used in court. Observations and findings are documented to support or refute interpretations, to provide evidence for court, and to serve as a record.

The forensic pathologist shall:

E13.1 describe injuries.
E13.2 describe injury by type.
E13.3 describe injury by location.
E13.4 describe injury by size.
E13.5 describe injury by shape.
E13.6 describe injury by pattern.

Standard E14 Photographic Documentation

Photographic documentation complements written documentation of wounds and creates a permanent record of forensic autopsy details. Photographic documentation of major wounds and injury shall include a reference scale in at least one photograph of the wound or injury to allow for 1:1 reproduction.

The forensic pathologist or representative shall:

E14.1 photograph injuries unobstructed by blood, foreign matter, or clothing.
E14.2 photograph major injuries with a scale.

Standard E15 Firearm Injuries

Documentation of firearm wounds as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E15.1 describe injuries.
E15.2 measure wound size.
E15.3 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the top of head or sole of foot.
E15.4 locate cutaneous wounds of the head, neck, torso, or lower extremities by measuring from either the anterior or posterior midline.
E15.5 locate cutaneous wounds of the upper extremities by measuring from anatomic landmarks.
E15.6 descriptively locate cutaneous wounds in an anatomic region.
E15.7 describe presence or absence of soot and stippling.
E15.8 describe presence of abrasion ring, searing, muzzle imprint, lacerations.

Standard E16 Sharp Force Injuries

Documentation of sharp force injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E16.1 describe wound.
E16.2 measure wound size.
E16.3 locate wound in anatomic region.
E16.4 estimate depth of wound
E16.5 determine organs and structures involved
E16.6 estimate direction of stab wound tracks

Standard E17 Burn Injuries

Documentation of burn injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

E17.1 describe appearance of burn.
E17.2 describe distribution of burn.

Standard E18 Patterned Injuries

Documentation of patterned injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. Bite marks should be swabbed to collect specimens to use for DNA comparison with putative assailants.

The forensic pathologist shall:

E18.1 measure injury size.
E18.2 describe location of injury.
E18.3 describe injury pattern.
E18.4 swab recent or fresh bite mark.

Section F: Internal Examination

The purpose of this section is to establish minimum standards for internal examinations.*

Standard F19 Thoracic and Abdominal Cavities

Because some findings are only ascertained by *in situ* inspection, the thoracic and abdominal cavities must be examined before and after the removal of organs so as to identify signs of disease, injury, and therapy.

The forensic pathologist shall:

F19.1 examine internal organs *in situ*.
F19.2 describe adhesions and abnormal fluids.
F19.3 document abnormal position of medical devices.
F19.4 describe evidence of surgery.

Standard F20 Internal Organs and Viscera

The major internal organs and viscera must be examined after their removal from the body so as to identify signs of disease, injury, and therapy.

Procedures are as follows:

F20.1 the forensic pathologist or representative removes organs from cranial, thoracic, abdominal, and pelvic cavities.
F20.2 the forensic pathologist or representative records measured weights of brain, heart, lungs, liver, spleen, and kidneys.
F20.3 the forensic pathologist dissects and describes organs.

Standard F21 Head

Because some findings are only ascertained by *in situ* inspection, the scalp and cranial contents must be examined before and after the removal of the brain so as to identify signs of disease, injury, and therapy.

Procedures are as follows:

F21.1 the forensic pathologist shall inspect and describe scalp, skull, and meninges.
F21.2 the forensic pathologist shall document any epidural, subdural, or subarachnoid hemorrhage.
F21.3 the forensic pathologist shall inspect the brain *in situ* prior to removal and sectioning.
F21.4 the forensic pathologist shall document purulent material and abnormal fluids.
F21.5 the forensic pathologist or representative removes the dura mater and the forensic pathologist inspects the skull.

Standard F22 Neck

The muscles, soft tissues, airways, and vascular structures of the anterior neck must be examined to identify signs of disease, injury, and therapy. A layer-by-layer dissection is necessary for proper evaluation of trauma to the anterior neck. Removal and *ex situ* dissection of the upper airway, pharynx, and upper esophagus is a necessary component of this evaluation. A dissection of the posterior neck is necessary when occult neck injury is suspected.

The forensic pathologist shall:

F22.1 examine *in situ* muscles and soft tissues of the anterior neck.
F22.2 ensure proper removal of neck organs and airways.
F22.3 examine neck organs and airways.
F22.4 dissect the posterior neck in cases of suspected occult neck injury.
F22.5 perform anterior neck dissection in neck trauma cases.

Standard F23 Penetrating Injuries, Including Gunshot and Sharp Force Injuries

Documentation of penetrating injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation. The recovery and documentation of foreign bodies is important for evidentiary purposes. Internal wound pathway(s) shall be described according to organs and tissues and size of defects of these organs and tissues.

The forensic pathologist shall:

F23.1 correlate internal injury to external injury
F23.2 describe and document the track of wound
F23.3 describe and document the direction of wound
F23.4 recover foreign bodies of evidentiary value
F23.5 describe and document recovered foreign body

Standard F24 Blunt Impact Injuries

Documentation of blunt impact injuries as listed below should include detail sufficient to provide meaningful information to users of the forensic autopsy report, and to permit another forensic pathologist to draw independent conclusions based on the documentation.

The forensic pathologist shall:

F24.1 describe internal and external injuries with appropriate correlations.
F24.2 describe and document injuries to skeletal system.
F24.3 describe and document injuries to internal organs, structures, and soft tissue.

Section G: Ancillary Tests and Support Services

The purpose of this section is to establish minimum standards for the use of scientific tests, procedures, and support services. This section also addresses the need for certain equipment and access to consultants. For toxicology reports, it also specifies the report content needed by the forensic pathologist for interpretation and establishes minimum standards for handling and documenting evidence.

Standard G25 Radiography

Radiographs of infants are required to detect occult fractures which may be the only physical evidence of abuse. Radiographs detect and locate foreign bodies and projectiles. Charred remains have lost external evidence of penetrating injury and identifying features.

The forensic pathologist or representative shall:

G25.1 X-ray all infants.
G25.2 X-ray explosion victims.
G25.3 X-ray gunshot victims.
G25.4 X-ray charred remains.

Standard G26 Specimens for Laboratory Testing

Specimens must be routinely collected, labeled, and preserved to be available for needed laboratory tests, and so that results of any testing will be valid. The blood specimen source should be documented for proper interpretation of results. Blood or other appropriate samples should be collected, whenever possible, for potential genetic testing in sudden, unexplained deaths that remain unexplained at the completion of the autopsy.

The forensic pathologist or representative shall:

G26.1 collect blood, urine, and vitreous.
G26.2 collect, package, label, and preserve biological samples.
G26.3 document whether blood is central, peripheral, or from cavity.

Standard G27 Histological Examination

Histological examination may reveal pathologic changes related to the cause of death.

The forensic pathologist shall:

G27.1 perform histological examination in cases having no reasonable explanation of the cause of death following gross autopsy performance, scene/circumstance evaluation, and toxicology examination, unless the remains are skeletonized or severely decomposed.

Standard G28 Forensic Pathologists' Access to Scientific Services and Equipment

The forensic pathologist requires access to special scientific services, equipment, and expertise. Radiographs, body weights, and organ weights are needed for evaluation of pathologic processes. These procedures need to be available during the forensic autopsy. Also, it is not reasonable, practical, or safe to carry bodies or organs to other locations for weighing or imaging.

The forensic pathologist shall have access to:

G28.1 a histology laboratory.
G28.2 a radiologist.
G28.3 a forensic anthropologist.
G28.4 a forensic odontologist.
G28.5 toxicology testing.
G28.6 on-site radiographic equipment.
G28.7 on-site body and organ scales.
G28.8 a clinical chemistry lab.
G28.9 a microbiology lab.

Standard G29 Content of Toxicology Lab Report

For correct interpretation, understanding, and follow-up of toxicology reports, the forensic pathologist requires specific knowledge of the items listed below.

The forensic pathologist shall require the toxicologist or the toxicology report to provide the:

G29.1 source of sample.
G29.2 type of screen.
G29.3 test results.
G29.4 method of analysis.

Standard G30 Evidence Processing

Custodial maintenance and chain of custody are legally required elements for documenting the handling of evidence.

The forensic pathologist or representative shall:

G30.1 collect, package, label, and preserve all evidentiary items.
G30.2 document chain of custody of all evidentiary items.

Section H: Documentation and Reports

The purpose of this section includes standards for the content and format of the postmortem record.

Standard H31 Postmortem Examination Report

Postmortem inspection and forensic autopsy reports must be readable, descriptive of findings, and include interpretations and opinions to make them informative. The report typically includes two separate parts of the forensic pathologist's work product, (1) the objective forensic autopsy with its findings including toxicological tests, special tests, microscopic examination, etc., and (2) the interpretations of the forensic pathologist.

The forensic pathologist shall:

H31.1 prepare a written narrative report for each postmortem examination.
H31.2 include the date, place, and time of examination.
H31.3 include the name of deceased, if known.
H31.4 include the case number.
H31.5 include observations of the external examination, and when performed, the internal examination.
H31.6 include a separate section on injuries.
H31.7 include a description of internal and external injuries.
H31.8 include descriptions of findings in sufficient detail to support diagnoses, opinions, and conclusions.
H31.9 include a list of the diagnoses and interpretations in forensic autopsy reports.
H31.10 include cause of death.
H31.11 include the name and title of each forensic pathologist.
H31.12 sign and date each postmortem examination report.

Terms and Definitions

1. Autopsy

An examination and dissection of a dead body by a physician for the purpose of determining the cause, mechanism, or manner of death, or the seat of disease, confirming the clinical diagnosis, obtaining specimens for specialized testing, retrieving physical evidence, identifying the deceased or educating medical professionals and students.

2. Cause of Death

The underlying disease or injury responsible for setting in motion a series of physiologic events culminating in death.

3. Direct Supervision

Supervision of personnel performing actions in the immediate presence of the supervisor.

4. Forensic Autopsy

An autopsy performed pursuant to statute, by or under the order of a medical examiner or coroner.

5. Forensic Pathologist

A physician who is certified in forensic pathology by the American Board of Pathology or who, prior to 2006, has completed a training program in forensic pathology that is accredited by the Accreditation Council on Graduate Medical Education or its international equivalent or has been officially "qualified for examination" in forensic pathology by the ABP.

6. Manner of Death

A simple system for classifying deaths based in large part on the presence or absence of intent to harm, and the presence or absence of violence, the purpose of which is to guide vital statistics nosologists to the correct external causation code in the International Classification of Diseases. The choices are natural, accident, homicide, suicide, undetermined, and in some registration districts for vital statistics, unclassified.

7. Medicolegal Death Investigator

An individual who is employed by a medicolegal death investigation system to conduct investigations into the circumstances of deaths in a jurisdiction.

8. Forensic Pathologist's "Representative"

Any individual who carries out duties under the direction or authority of the forensic pathologist. Individuals performing these various duties may range from technicians to licensed physician medical examiners, and may be law enforcement or crime laboratory technicians.

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 classifyiug 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 diffieulties may be listed in Part II as an "other significant eondition" (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.

Hanzlick R, Goodin J. Mind your manners part III: Individual scenario results from the National Association of Medical Examiners Manner of Death Questionnaire, 1995. *Am J Forensic Med Pathol* 1997;18(3):228-245.

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