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## Standard Language in Death Investigation Laws

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**ABSTRACT:** Death investigation statutes and practices vary among the 50 states. We reviewed the Model Postmortem Examinations Act, recommendations of the National Association of Medical Examiners, the College of American Pathologists' "criteria for autopsies," and the death investigation statutes and practices in each state. By consolidating the terminology from these various information sources, we developed a list of death categories for which investigation by medical examiners or coroners in the United States is either mandated, commonly performed, or recommended. The list contains specific categories of death, which fall under these three more general areas: 1) unexpected and unexplained deaths, 2) deaths from intentional and unintentional external causes, and 3) deaths that fall under specialized categories related to the decedent's age, environment, or medical conditions, or to the method of bodily disposition. To promote greater uniformity in the death investigation practices among states, we recommend that the Model Postmortem Examinations Act be modified to explicitly recommend certain types of deaths for investigation and that states modify their death investigation statutes to conform to such provisions. Presently, in states where death investigation statutes lack specificity in detailing the types of deaths that should be reported for possible medico-legal investigation, our recommendations, if not in conflict with local statutes, might be used as practice guidelines for the reporting and investigation of certain types of deaths.

**KEYWORDS:** forensic science, pathology and biology, death investigation laws, legislation, model laws

The information that medical examiners and coroners (ME/Cs) collect during routine death investigations—in addition to satisfying statutory requirements to determine the cause, manner, and circumstances of death—is of potential benefit to educational, research, and public health agencies [1]. However, restrictive death investigation laws or inconsistencies in death investigation procedures among ME jurisdictions can limit the usefulness of this information [2]. To promote greater state-to-state consistency in the types of deaths subject to medico-legal investigation, we recommend specific modifications of the Model Postmortem Examinations Act that can be used (1) to guide changes in state death investigation statutes or (2) as a death investigation practice guideline if the recommendations are not in conflict with local statutes.

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## Methods

We reviewed the 1954 Model Postmortem Examinations Act [3], recommendations from the Standards of the National Association of Medical Examiners [4], the College of American Pathologists' "criteria for autopsies" [5], and the medico-legal death investigation statutes and practices of each state [6]. During the analysis of statutes and practices, we also identified certain categories of death that are often investigated by ME/Cs but are not explicitly mentioned in death investigation statutes [6]. On the basis of these sources of information, we developed a list of specific categories of death which we recommend be reported to ME/Cs for medico-legal death investigation. To develop the list, we strove to (a) use each of the important terms or key words that were used in the various sources while keeping redundancy in terms to a minimum; (b) include each of the categories of death that were referred to in the various sources while keeping overlap in categories to a minimum; (c) include "traditional" terms from older statutes that are still used today; (d) include newer concepts and terms that are used in the injury-mortality literature; and, (e) include specific categories of death that, by their nature, deserve specific mention because they potentially involve medico-legal issues and are not clearly and explicitly "covered" by another category.

## Results

The categories of deaths that are referred to in statute or investigated by ME/Cs anywhere in the United States are shown in Table 1. The 1954 Model Postmortem Examinations Act suggests that the categories of deaths shown in Table 2 be investigated, and the Standards of the National Association of Medical Examiners (NAME) recommends that the categories of death shown in Table 3 be investigated. Table 4 indicates the categories of death for which an autopsy is recommended by the College of American Pathologists; these include some categories of death that frequently involve medico-legal issues and are often investigated by ME/Cs, and are also of particular interest to public health agencies and programs. By consolidating the categories of the various sources using the criteria described under "Methods," we produced the list of recommendations shown in Table 5. The list contains specific categories of death that fall under three general areas: 1) unexpected and unexplained deaths, 2) deaths from intentional and unintentional external causes (injuries), and 3) deaths that fall under specialized categories related to the decedent's age, environmental circumstances, or medical conditions, or to the method of disposing of the body.

## Discussion

Despite a liberal interpretation of state statutes as shown in Table 1, there are many inconsistencies among the states regarding the types of deaths that should be reported to, or investigated by ME/Cs. Some deaths, such as those allegedly due to violence, or those that occur under suspicious circumstances, are investigated in nearly all of the states, whereas others, such as deaths of institutionalized persons, persons to be cremated, or deaths of persons under anesthesia are investigated only occasionally [2]. A major problem is the inconsistency in the language of statutes that stipulate which types of death are to be reported for investigation [2]. For example, only 5 states explicitly require investigation of deaths that occur in patients under anesthesia, but 25 states actually investigate certain deaths that occur under anesthesia [2,6]. Similar inconsistencies exist in states concerning the investigation of deaths due to fright or fear, deaths from euthanasia, deaths during pregnancy, and other deaths—some of which are investigated in states that do not have statutes explicitly requiring such investigations.

TABLE 1—Types of deaths investigated by medical examiners/coroners  
United States, 1992.

Category of death <sup>a</sup>	# States
—Under suspicious circumstances or unusual or unnatural manner of death	49
—By violence, not otherwise specified	48
—By suicide	50
—By homicide	47
—By unlawful/criminal means	43
—Associated with known or alleged rape, sexual abuse, crime against nature	37
—Child abuse	40
—Accidental, not otherwise specified	46
—Sudden, unexpected, unexplained death in apparently healthy person	48
—Unattended by physician or not under a physician's care	49
—While in prison or police custody	46
—Where a public health hazard is present or suspected	40
—Due to criminal abortion	44
—Cause cannot be certified or body does not have proper certification	40
—By thermal, chemical, electrical, or radiation injury	44
—By recent or old injury	39
—Resulting from employment	34
—Industrial death	37
—Casualty, not otherwise specified	39
—By poison, chemical toxicity	45
—If institutionalized for reasons other than organic disease	30
—Body to be cremated or disposed; later investigation would not be possible	31
—If sudden infant death syndrome is suspected	43
—Found dead	36
—Resulting from drug or alcohol abuse, addiction, or overdose	36
—By fire, exposure, starvation, malnutrition, explosion, disaster	44
—When required by workmen's compensation laws	17
—During surgical or therapeutic procedures or while under anesthesia	25
—Body unclaimed or deceased unknown	36
—Stillbirth or fetal death	12
—Within 24–36 hours of hospital admission	20
—By motor vehicle accident	44
—By trauma, not otherwise specified	44

<sup>a</sup>These are general categories derived from specific language in the various state statutes and may not be mutually exclusive (e.g., homicide, violence). Because of varying interpretations of statutes, medical examiners and coroners in certain states might investigate deaths that fall into one of the categories above, either routinely or under special circumstances, even if the category is not specifically referred to in the statutes of their state. The number in the right-hand column indicates the number of states that investigate such deaths if state law is interpreted liberally, not the number of states with this language in their death investigation statute.

The use of nonspecific language in statutes can give rise to differences in interpretation, which result in inconsistent reporting of deaths to ME/Cs, which in turn results in inconsistent investigation of certain types of death. As an example, the Georgia death investigation law makes no reference to deaths that occur in persons undergoing surgery, but the mandated investigation of “unusual” deaths has included some such deaths. One intent of Iowa death investigation statutes is for injury-related deaths to be investigated by the medical examiner, but results of a recent study showed that only 70% of deaths due to injury had been reported to the medical examiner for investigation [Dijkhuis H., et al. Medical examiner data in injury surveillance: a comparison with death certificates, submitted for publication, *Am J Epidemiol*]. Obviously, state-to-state variations in the language and content of statutes could result in inconsistent reporting and investigation on a national scale.

TABLE 2—*Deaths to be investigated*  
*Conditions of the 1954 Model Postmortem Examinations Act.*<sup>a</sup>

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Violent deaths, whether apparently homicidal, suicidal, or accidental, including but not limited to deaths due to thermal, chemical, electrical, or radiation injury, and deaths due to criminal abortion, whether apparently self-induced or not.

Sudden deaths not caused by readily recognizable disease.

Deaths under suspicious circumstances.

Deaths of persons whose bodies are to be cremated, dissected, buried at sea, or otherwise disposed of so as to be thereafter unavailable for examination.

Deaths of inmates of public institutions not hospitalized therein for organic disease.

Deaths related to disease resulting from employment or to accident while employed.

Deaths related to disease that might constitute a threat to public health.

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<sup>a</sup>The language in this table is stated as it appears in the Model Act.

What constitutes an adequate death investigation according to a state's statute might not be adequate when scientific, legal, or public health attitudes and needs are considered. Sudden infant death syndrome (SIDS) is a good example. The U.S. Congress has mandated development of a standard SIDS death-scene investigation protocol [7], guidelines and protocols have been developed for performing autopsies on the bodies of infants suspected of having died from SIDS [8], and numerous states have established child fatality review systems to follow up on death investigations of children [9]. Yet some

TABLE 3—*Deaths to be investigated*  
*Recommendations of The National Association of Medical Examiners.*<sup>a</sup>

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Medical examiner should have authority to investigate and certify any death that falls in the following categories:

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Criminal violence

Suicide

Accident

Sudden death when the decedent was in apparent good health

Death unattended by a practicing physician

Death under suspicious or unusual circumstances

Abortion

Poisoning

Diseases constituting a threat to public health

Disease, injury, or toxic agent resulting from employment

Death associated with diagnostic or therapeutic procedures

Death in any prison or penal institution

Death in any mental institution

Death when in legal custody

Death in which a body is to be cremated, dissected, or buried at sea

Unclaimed bodies

A body is brought into a new medicolegal jurisdiction without proper medical certification

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<sup>a</sup>The language in this table is stated as it appears in the N.A.M.E. recommendations.

TABLE 4—*Criteria for autopsies*<sup>a</sup>  
*College of American Pathologists.*

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Deaths in which autopsy may help to explain unknown and unanticipated medical complications to the attending physician.
All deaths in which the cause of death is not known with certainty on clinical grounds.
Cases in which autopsy may help to allay concerns of and provide reassurance to the family and/or public regarding the death. <sup>b</sup>
Unexpected or unexplained deaths occurring during any dental, medical, or surgical diagnostic procedures and/or therapies. <sup>b</sup>
Deaths of patients who have participated in clinical trials (protocols) approved by institutional review boards.
Unexpected or unexplained deaths that are apparently natural and not subject to a forensic medical jurisdiction.
Natural deaths that are subject to, but waived by, a forensic medical jurisdiction, such as persons dead on arrival at hospitals; deaths occurring within 24 hours of admission; and deaths in which the patient sustained or apparently sustained an injury while hospitalized.
Deaths resulting from high-risk infectious and contagious diseases. <sup>b</sup>
All obstetric deaths. <sup>b</sup>
All neonatal and pediatric deaths. <sup>b</sup>
Deaths in which it is believed that autopsy would disclose a known or suspected illness that may have bearing on survivors or recipients of transplant organs.
Deaths known or suspected to result from environmental or occupational hazards. <sup>b</sup>

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<sup>a</sup>These are criteria for requesting autopsies, not criteria for conducting medico-legal death investigations. However, many of these categories of deaths are investigated by medical examiners and coroners. The language above is stated as published by the College of American Pathologists.

<sup>b</sup>These categories of deaths, in addition to commonly involving medico-legal issues, are also of special interest to public health professionals.

states do not explicitly mandate the investigation of suspected SIDS cases by ME/Cs, autopsies are not always performed on infants suspected as having died from SIDS, and the quality of some autopsy investigations may not meet professionally established guidelines [10]. In essence, the requirements of a state's death investigation statute might be fulfilled, but the needs of the public and medical science might not be met. Some effort toward making death investigation laws more uniform and specific seems reasonable in order to maximize the benefits, on the local and national levels, of death investigation efforts by the states.

Specificity in the law might not be viewed as desirable by some ME/Cs because it could limit their discretion in conducting investigations. However, we believe that specificity in wording is not counter-productive, because it makes clearer to the public and ME/Cs which types of deaths should be *reported* for investigation. A discussion of the *extent* of investigation, once a death is reported, is beyond the scope of this paper. It should be noted, however, that medical examiners and coroners generally have discretion in determining the *extent* of an investigation once a death is reported; for guidance, they often use nonstatutory, professionally established criteria such as those developed for the investigation of deaths that occur of patients that are under anesthesia [11]. Further, the categories in Table 5 are substantially based on fairly specific recommendations of the National Association of Medical Examiners, which developed its recommendations on the basis of the interests of its membership and the public.

Overall, the Model Act, drafted in 1954, shows good foresight. Many of the categories of death shown in Table 5, although not specifically cited in the Model Act, are generally

TABLE 5—Deaths to be reported to ME/Cs  
 CDC Recommendations for updating the Model Act.

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Deaths brought about or hastened by violence or an external cause, which includes the immediate or delayed effects of any form of injury or trauma, whether intentional, unintentional, or of an unknown nature. Such deaths include, but are not limited to known or suspected homicides, suicides, and unintentional deaths (accidents) due to any cause, including suspicious or unusual deaths, or deaths suspected as having been caused by poisoning or drug or alcohol abuse, addiction, overdose, or adverse reaction.

Sudden, unexpected deaths of persons in apparent good health, which apparently are due to natural causes that are not explained with a reasonable degree of medical certainty.

Deaths of persons who have no practicing physician to certify the death as being solely due to natural causes such as disease or aging, or deaths of persons whose bodies are brought into a new medicolegal jurisdiction without proper medical certification.

Deaths that occurred of a patient while under anesthesia or in post-operative recovery, or thought to be brought about or hastened by a medical procedure, device, or treatment.

Deaths of inmates of a penal institution or of persons in the legal custody of a law enforcement agency, including deaths from judicial execution.

Deaths of patients who are institutionalized for mental illness, dementia, retardation, or reasons other than organic disease.

Deaths known or suspected of being due to euthanasia or assisted suicide.<sup>a</sup>

Deaths in which the identity of the person is unknown or there is no custodian to claim the deceased body.

Deaths in which the method of disposing of the body would preclude subsequent examination, such as cremation, dissection for anatomic study, or burial at sea.

Deaths related to conditions that might constitute a public health or safety hazard.

Deaths of persons who die within 24 hours of admission to a hospital unless the cause of death is known with reasonable medical certainty and is due solely to natural causes such as disease or aging.

Obstetric or unexplained deaths of women who have been pregnant within 90 days of death.<sup>a</sup>

On-the-job deaths, or deaths thought to result from employment, including all deaths for which workmen's compensation laws require an investigation.

Dead fetuses or infants found abandoned or discarded or whose deaths are suspected as having been caused by illegal termination of pregnancy, or maternal injury or drug abuse.

Deaths suspected as having been caused by neglect or abuse, whether by act of omission or commission, and regardless of the age of the decedent.

Deaths thought to be brought about or hastened by fright or fear induced by another person.<sup>a</sup>

Deaths consistent with sudden infant death syndrome.

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<sup>a</sup>These deaths are often investigated but are not explicitly referred to in statutes.

“covered” by the categories of death cited in the Model Act. Even so, the lack of specificity in the wording and the inconsistent manner in which states have adapted the Model Act have created problems: nonspecific statutes can result in inconsistent reporting, which in turn can lead to inconsistent investigations of deaths, both locally and nationally. Efforts to make death investigation practices more consistent would certainly be more effective if death reporting practices are first improved through more effective and explicit statutes.

Our recommendations may prompt some additional objections. For example, because of concern about increased workload, financial restraints, or potential abuse of certain statutes by physicians, some ME/Cs might argue against a law that requires ME/Cs to certify deaths when an attending physician refuses to do so. In practice, however, ME/

Cs often must certify such deaths because few, if any other options are available if the death is to be certified. Specifying such authority in statute, therefore, seems reasonable. Similar objections might also be raised to routine reporting of certain cases such as obstetric deaths or fetal deaths which are thought to be due to maternal drug abuse. Although such concerns are legitimate, we believe that the potential values of an investigation should be the force driving those who write death investigation statutes, and that concerns about workload and funding issues can be addressed after statutes are in place if they have been inadequately addressed beforehand. In the face of a continual downhill trend in hospital-based autopsy rates, broadening, and making the scope of medico-legal death investigation more consistent might assume substantial scientific, medical, and public health importance.

Finally, the specific language in our recommendations is not in a form that is suitable for direct incorporation into statutes. It will require editing by attorneys who specialize in writing laws.

We have recommended to the members of the Uniform Law Commission that the 1954 Model Postmortem Examinations Act be revised to include explicit categories of death similar to those in Table 5. We further recommend that states modify their statutes to ensure that such deaths are reported to the ME/Cs for investigation. Presently, in states where death investigation statutes lack specificity in detailing the types of deaths that should be reported for possible medico-legal investigation, our recommendations, if not in conflict with local statutes, might be used as practice guidelines for the reporting and investigation of certain types of deaths.

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