

Hello.


I'm Gary Thompson, State Registrar of Vital Statistics for the State of West Virginia. The State Registrar's Office is the official custodian of birth, death, marriage, divorce, fetal death, and induced abortion information in West Virginia. The office is located inside of the Health Statistics Center, and inside of the Bureau for Public Health which is a Bureau inside the Department of Health and Human Resources.

I want to point out at the beginning of this presentation that there is no "MD" or "DO" or "RN" or "LPN" or "PA" after my name. I am not a trained medical professional.

I am a statistician and research analyst by trade and the head of an agency that is responsible for the filing of vital documents – records of birth, death, marriage, divorce and reports of fetal death and induced abortion. All of those documents, no matter their other uses, are, to me, also data collection mechanisms. But not just any data. This is data about the lives of people – human life – particularly at the beginning and end points. As the writer Paul Brodeur once said about statistics, and I think that it is particularly applicable to health statistics, "Statistics are human beings with the tears wiped off." Dr. J.N. Hurty, a physician in the late 1800s and early 1900s who was also involved heavily in the American Public Health Association, referred to the collection of birth

and death information as the “Bookkeeping of Humanity.” His article by that name, first published in 1910, was republished in the October 2010 issue of JAMA. If you did not read that, I urge you all to do so. It is short, eloquent, and as relevant today as it was 100 years ago.

**Topics for Discussion**



- General nature of death certificates
- Legal responsibility for filing / completion
- General concepts for completion of death certificates by physicians and advanced practice registered nurses
- Constructing cause of death statements

The purpose of this presentation training is to inform health professionals about death certificates – particularly the certification of cause of death by those who are not just allowed to do so, but are required to do so under West Virginia Code. Obviously, it has to be one of a health professional’s least favorite tasks. Indeed, I’ve heard it said that if your health provider is someone who likes completing death certificates, you might want to find yourself another one.

This training has 4 main topics:

The general nature of death certificates

The legal responsibilities surrounding the filing and completion of death certificates

The general concepts for the proper completion of death certificates

And

The construction of cause of death statements.

## What is a Death Certificate?



- A death certificate is the state's official recording of the death of a live born human being that occurred within the state.

So, what is a death certificate?

Quite simply put, it is the state's official recording of the death of a live born human being that occurred within the state.

A death certificate is never filed for a fetal demise – whether spontaneous or induced- there are other reports for those events.

Only deaths that occur within the state of West Virginia (with some very minor exceptions) are recorded in West Virginia.

Information from death certificates from other states for West Virginia residents who died elsewhere is transmitted to West Virginia solely for statistical use.

Deaths of non-military US Citizens that occur out of the country are recorded in that country, but information flows back to the state of residence and birth on what are known as Consular Reports of Death Abroad from the US State Department. Overseas military deaths are not reported back to the state of residence or birth. That information is available only from the military.

## Legal Mandates for Death Certificate




- In the United States, the filing of a death certificate is within the purview of state and territorial governments (not a federal mandate).
- 57 separate reporting districts in the United States - 50 states + DC, NYC, Puerto Rico, US Virgin Islands, Guam, American Samoa, Northern Marianas Islands.

As for the legal mandate for the filing of death certificates, the mandate comes from the state and territorial levels, not the federal level. In many countries in this world, the systems of vital statistics are nationally based.

In the United States there are 57 separate jurisdictions responsible for the collection of death information about their citizens: the 50 states, DC, NYC which is separate from the State of NY, Puerto Rico, the USVI, Guam, American Samoa, and the Northern Marianas Islands.

**Uses for Death Records**

  
BUREAU FOR PUBLIC HEALTH


**Legal Proof of Death Occurrence:**  
**Who, When, Where**

- Prima facie evidence that death occurred
- To access bank accounts of decedent
- To open estate for probate
- To gain access to survivor benefits
- To make life insurance claims – sometimes to pay for the funeral

Death records are multi-use documents. They have strong legal and medical components

For one, certified copies of death records are prima facie, or for you Law and Order or Latin fans, *prima facie* evidence that a death has occurred. That is, it must be accepted as proof of death unless specifically challenged in a court of law. It is very much the proof of Who died, When they died, and Where they died. Without the proof of that death, the lives, especially the financial lives, of those associated with the decedent cannot go forward.

A death certificate “cuts” the legal string that tethers us to our worldly possessions, relatives, friends, business associates, society in general and the world at large. It also creates a new legal connection between the deceased’s possessions and new owners.

Uses for Death Records 

**Civil Registration / Proper Administration of Government**

- To end eligibility for social programs and right to vote / fraud control

There isn't a country on this planet, no matter the form of government and no matter their level of technology and industry that does not claim the right to know who lives and dies within its borders - who its citizens are or were. Some may do a better job of it than others, but no country would claim that it doesn't care about this.

The filing of birth and death records is not optional. Civil registration is often referred to as a "police power" of government. One cannot legally opt out on the basis of religion or political views.

Within a short time after death, the Social Security Administration knows a citizen is dead. From that point forward, the official news of the death filters into other government agencies, including the IRS. And when the IRS thinks you're dead, even if you're not, you may as well be dead because it is the devil to get that straightened back out.

### **Genealogical Information**


Historical references to:

- Name
- Date of Birth
- Names of Parents
- Dates and Places of Birth and Death
- Occupation and Industry
- Surviving Spouse's Name
- Place of Residence

Death records also help provide a historical reference to a person's life. That is, they are for posterity.



**Uses for Death Records**



**Proof of Cause and Manner of Death  
(Why and How)**

- Cause of death
- Manner of death
- Information collected on forms is one of the cornerstones of public health epidemiology
- Medical information often has legal use


And finally, death records collect a wealth of medical and health information surrounding the death. In particular this Why and How are what we would refer to as Cause and Manner.

This information, once collected, compiled, edited, and analyzed forms one of the cornerstones of information vital to the discussion of public health in a nation and the formulation and implementation of programs to prevent morbidity and mortality so as to improve the overall health of the nation's people.

All of the information collected by the states and territories flows back to the Centers for Disease Control and Prevention's National Center for Health Statistics for creation of national statistics and databases.

Although I've spoken as if these various uses are discrete, they are not. The medical and the legal value quite often blend together. You will often see the use of the term "medico/legal death investigation" when the circumstances surrounding a death are unnatural and when the cause and manner of death involves the world of medical examiners and law enforcement.

**Death Record Standards**



**Role of the Federal Government**

- Federal officials create model laws, regulations, standards and certificates (CDC's National Center for Health Statistics)
- Cannot mandate they be used
- Funding may be persuasive

Regarding the death certificate format itself, as was mentioned previously, the legal mandate to collect death records flows from state mandates, not federal mandates. But it isn't like the federal government just collects what states send to them. They play a much larger role in the nation's system of vital statistics.


The Centers for Disease Control coordinates the creation of both Model Code and Regulations and Standard Forms and procedures for collecting information on birth, death, fetal death, marriage, divorce, and induced abortion.

They cannot mandate that any of those be used.

But they can persuade us to use them. With one of the best motivators known to mankind....bucks

It is this "financial persuasion" through what is known as the Vital Statistics Cooperative Program that provides a comfortable level of uniformity in laws, regulations, collection standards and data items from state to state in the US.

**WV Death Certificate**



- Current WV Death Certificate is modeled on the 1989 U.S. Standard Certificate
- Current U.S. Standard is the 2003 revision
- All states should be using by 2016 / 2017
- Major differences in certification of cause of death section includes direct questions about tobacco use and pregnancy / childbirth status
- Can be paper, electronic, or a mix

The current death certificate that we are using is based on the 1989 US Standard Certificate. There is a newer version, the 2003 revision. All states will be using it by the end of 2016 or 2017. We anticipate a change to ours sometime this year. But don't worry, the changes are not drastic.

From a medical certifiers point of view, the only major changes are that there are direct questions about whether tobacco use contributed to the death and, if the decedent was female, what her pregnancy and child birth status were at the time of death.

Although most states have paper death certificates, many states have electronic versions of death certificates. Also, many states have what are known as "hybrid" systems that are a blend of paper and electronic certificates.

Unlike electronic BIRTH certificates which are basically a direct communication from hospitals to the state office, electronic death certificate systems are much more complex to build and implement due to the different people that can "touch" one before filing.

**West Virginia State Code § 16-5-1 *et seq.*  
and WV 64 CSR 32**

- Funeral directors, physicians or ME/Coroners, some other licensed health professionals as pronouncers, hospital staff, informants of personal information, vital registration office, county clerks

As was mentioned earlier, the filing of death certificates is mandatory. When it comes to death certificates, there are a lot of players in the system of vital statistics – each with a distinct role. There are funeral directors, physicians or coroners, advanced practice registered nurses, some other licensed health professionals who can pronounce that a death has occurred but who cannot certify as to why and how, hospital staff, informants of personal information – normally family members, this office and County Clerks in West Virginia who are local custodians of record.

## Legal Mandates



§ 16-5-19(b): The funeral director or other person who assumes custody of the dead body shall:

- (1) Obtain the personal data from the next of kin or the best qualified person or source available including the deceased person's social security number or numbers, which shall be placed in the records relating to the death and recorded on the certificate of death;
- (2) Within forty-eight hours after death, provide the certificate of death containing sufficient information to identify the decedent to the physician or nurse responsible for completing the medical certification as provided in subsection (c) of this section; and
- (3) Upon receipt of the medical certification, file the certificate of death: Provided, That for implementation of electronic filing of death certificates, the person who certifies to cause of death will be responsible for filing the electronic certification of cause of death as directed by the State Registrar and in accordance with legislative rule.

In particular, it is the funeral director who is currently legally responsible for obtaining the information, presenting a death certificate to the attending physician or an Advanced Practice Registered Nurse for completion and filing the death certificate with the state office. Although W.Va. Code section 16-5-19b anticipates the funeral director starting the death certificate, it is not always best that it happen in that direction – particularly in medical facility settings. It is the best for everyone involved including the funeral director, the decedent's family, the medical facility, and the certifier themselves if, when a body is removed from a medical facility, a completed medical certification of cause of death accompanies the body.

## Legal Mandates



§ 16-5-19(c) The medical certification shall be completed and signed within twenty-four hours after receipt of the certificate of death by the physician or advanced practice registered nurse in charge of the patient's care for the illness or condition which resulted in death except when inquiry is required pursuant to chapter sixty-one, article twelve or other applicable provisions of this code.

- 1) Must be completed within 24 hours after receipt of the certificate.
- 2) Must be signed by a physician or advanced practice registered nurse in charge of the patient's care for the illness or condition which resulted in death.
- 3) Must NOT be completed when inquiry is required pursuant to Medical Examiner's Code and Rules.

As to a physician's or advanced practice registered nurse's responsibility, the Code sections indicate several very important things.

It must be completed within 24 hours after receipt of the certificate.

It must be signed by a physician or advanced practice registered nurse in charge of the patient's care for the illness or condition which resulted in death. That is, other than non-physician coroners, it must be signed by an MD or DO or a licensed Advanced Practice Registered Nurse. RNs who are not licensed for Advanced Practice and Physician Assistants may not certify to the cause of death in West Virginia – with one exception and that is if they are an appointed coroner.

But, regardless, the certificate must NOT be completed when inquiry is required pursuant to Medical Examiner's Code and Rules. That subject will be discussed shortly.

## Legal Mandates



§ 16-5-19(c)(1) In the absence of the physician or advanced practice registered nurse or with his or her approval, the certificate may be completed by *his or her associate physician, any physician who has been placed in a position of responsibility for any medical coverage of the decedent, the chief medical officer of the institution in which death occurred, or the physician who performed an autopsy upon the decedent*, provided inquiry is not required pursuant to chapter sixty-one, article twelve of this code.

Also, there are a number of other people who can certify to the cause of death in the ABSENCE of the attending physician or the advanced practice registered nurse or with his or her approval:

His or Her associate physician

Any physician who has been placed in a position of responsibility for any medical coverage of the decedent

The chief medical officer of the institution in which death occurred. OR The physician who performed an autopsy on the decedent.

In accordance with the law, as it is presently written, it doesn't allow an APRN to delegate to another APRN the completion of the death certificate.

## New Legal Certifier in 2016



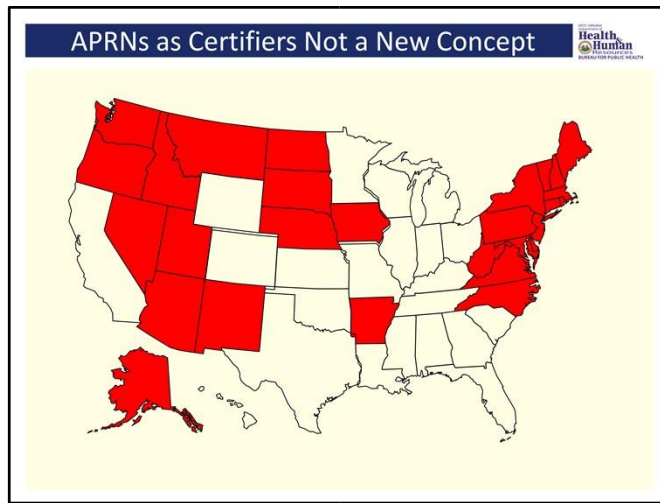
- House Bill 4334 - “Clarifying the requirements for a license to practice as an advanced practice registered nurse and expanding prescriptive authority”
- Passed the Legislature on March 12, 2016
- Signed by the Governor on March 30, 2016
- Becomes effective June 10, 2016

Before going on, this might be a good juncture to touch on the fact that as of June 10, 2016, Advanced Practice Registered Nurses in West Virginia gained new authorities in their practice. In previous slides, you may have noticed that emphasis was placed on the term “advanced practice registered nurse” in the relevant Code sections. Those revised Code sections should not be considered to be current law until June 10, 2016. Although that emphasis does not appear in Code, due to the recent passage of legislation it was thought necessary to highlight it.



- W.Va. Code § 30-7-15d. Advanced practice registered nurse signatory authority.
  - (a) An advanced practice registered nurse may provide an authorized signature, certification, stamp, verification, affidavit or endorsement on documents within the scope of their practice, including, but not limited to, the following documents:
    - (1) Death certificates: *Provided*, That the advanced practice registered nurse has received training from the board on the completion of death certificates;

Among other new authorities in the bill, the ability to certify to the cause of death was added with the condition of having completed training from the West Virginia Board of Examiners for Registered Professional Nurses on the certification of cause of death. This is outlined in Chapter 30 , Article 5, Section 15 d of W.Va. Code. Again, this is not in effect until June 10, 2016.



This concept of allowing Advanced Practice Registered Nurses to certify to the cause of death is not a new concept. Once West Virginia joins the other existing states that allow this, there will be 29 states in the nation, including Washington, DC in which APRNs can certify to the cause of death. Although not allowed in West Virginia, in a smaller number of states Physician Assistants may certify to the cause of death. And, in at least one other state, an allowance is provided to hospice nurses, who may certify to the cause of death for patients under their care.

The ONLY other classification, for lack of a better term, of person who can certify to the cause of death is an appointed non-physician coroner who works under the direction and authority of the Office of the Chief Medical Examiner.

**When Must A Physician Contact ME/Coroner?**

§ 61-12-8. Certain deaths to be reported to medical examiners...

(a) When any person dies in this state from *violence, or by apparent suicide, or suddenly when in apparent good health, or when unattended by a physician, or when an inmate of a public institution, or from some disease which might constitute a threat to public health, or in any suspicious, unusual or unnatural manner*, the chief medical examiner, or his or her designee or the county medical examiner, or the coroner of the county in which death occurs shall be immediately notified by the physician in attendance, ...


There are particular categories of deaths that fall within the purview of the Office of the Chief Medical Examiner. By and large, most are fatal accidents – drug overdoses, motor vehicle accidents, falls, drownings, gunshot wounds – all of which, including those of homicidal intent, are considered VIOLENT deaths.

State Code specifically states that: When any person dies in this state from violence, or by apparent suicide, or suddenly when in apparent good health, or when unattended by a physician, or when an inmate of a public institution, or from some disease which might constitute a threat to public health, or in any suspicious, unusual or unnatural manner, the chief medical examiner, or his or her designee or the county medical examiner, or the coroner of the county in which death occurs shall be immediately notified by the physician in attendance.

This is a topic that the Office of the Chief Medical Examiner and I have been trying to drive home for some time. We are trying to do everything possible from an educational stance to keep from having to use the legal system as an intervention.

Even today, we often have physicians who are not Medical Examiners certifying to the cause of death for patients under their care who have clearly died of injuries, both intentional and unintentional. It should be pointed out that there is no time limit involved when it comes to deaths that were the result of violence. For example, if someone became a quadriplegic through an accident and then died 10 years later from complications of the quadriplegia, that is still a Medical Examiner’s case.

When a death certificate is submitted to the state office and the death falls into one of these categories but has not been signed off on by a Medical Examiner or Coroner, the whole process of filing the death certificate stops and it is referred to the Medical Examiner’s Office for investigation. What may have been easily handled in the field now becomes a mess to unravel causing the state office, the Medical Examiner’s office, the funeral home, and the family additional time and energy to complete.

Liabilities / Penalties	
§ 16-5-31 (b)	
Any person or institution that in good faith provides information required by this article or legislative rules shall not be subject to criminal prosecution or any action for damages.	

Before getting into discussing Medical Certification it is important to briefly touch on several sections of Code that physicians and APRNs need to be aware of regarding liabilities and penalties.

First, be aware that as long as a physician or APRN provides information in good faith, he or she cannot be held for criminal prosecution or held for any action for damages. That's the law.

Mistakes happen. They can be corrected.

## § 16-5-38 (a)(1)

...a person shall be guilty of a felony and, upon conviction thereof, shall be fined not more than ten thousand dollars or imprisoned in a state correctional facility not more than five years, or both fined and imprisoned, if he or she:

(1) Willfully and knowingly makes any false statement in a report, record or certificate required to be filed under this article,...

However, willfully and knowingly making false statements in the certification of cause of death is a felony level offense.

There are many types of deaths that fall into areas that may be considered to be hurtful or embarrassing or demeaning in some manner. There are forms of death that may bear a societal stigma. Many of those who certify to the cause of death know the decedent and their families and do not want to further add to their suffering at the time of death.

However, it is important, both from a legal standpoint and from a public health standpoint that what is known about the death be disclosed.

A form of misguided “compassion” was noted many times in the past, specifically with deaths due to HIV/AIDS.

At this time, West Virginia is in the grips of a drug overdose epidemic. Drug overdose deaths are the purview of a medical examiner. It is incredibly important that those deaths and the resulting certificates be reported and handled in a manner prescribed by law.

As hurtful as it can be, professionalism must be maintained in the reporting of cause of death.

As a final warning, when it comes to this subject, there is this twist on an old maxim: “No good deed goes unpunished.”

§ 16-5-38(b)(3)

A person shall be guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars, or confined in jail not more than one year, or both fined and confined, if he or she:

(3) willfully and knowingly violates any of the provisions of this article or refuses to perform any of the duties imposed upon him or her by this article.

Be aware that refusing to perform any of the duties imposed upon him or her by law is a misdemeanor level offense.

## Failure to Report to ME



### § 61-12-8(a)

...Any physician or law-enforcement officer, funeral director or embalmer who willfully fails to comply with this notification requirement is guilty of a misdemeanor and, upon conviction, shall be fined not less than one hundred dollars nor more than five hundred dollars...

And, again, failing to notify the Medical Examiner or Coroner of a death that falls under their purview is a misdemeanor offense.

**deaths not requiring  
medico/legal investigation**

OK lets get into the meat of this presentation.



## What is a “natural” death?



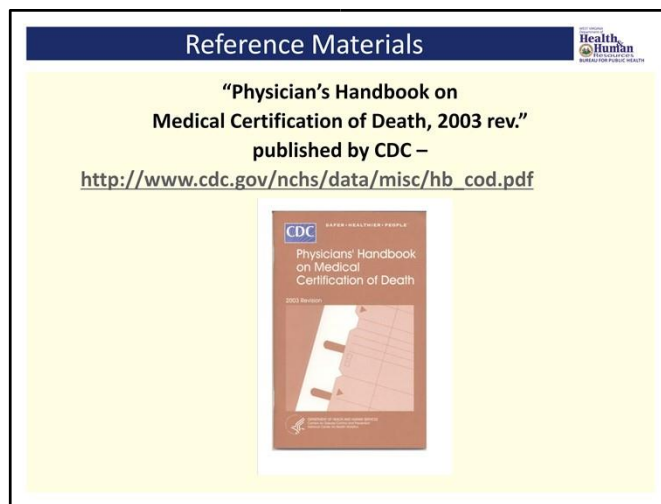
**Natural - “due solely or nearly totally to disease and/or the aging process”**

As opposed to:

- Accidents (unintentional injury)
- Homicides (intentional injury)
- Suicides (intentional injury)
- Undetermined manner of death

Again, this training is intended to discuss the construction of cause of death statements for NATURAL deaths, only.

**Natural Deaths are - “Deaths due solely or nearly totally to disease and/or the aging process”**



There are numerous reference materials available to assist those who certify to the cause of death. The bulk of this training leans heavily on the principles outlined in the following materials and their examples and a larger reference publication. The most commonly available is the “Physician’s Handbook on Medical Certification of Death, Rev. 2003” published by CDC. Copies can be downloaded for reference.

Although West Virginia does not utilize the 2003 standard certificate yet, the principles behind the certification of cause and manner of death are equivalent. The only real difference in the new certificate is a question as to whether tobacco use contributed to death and one querying the pregnancy status of a female decedent.

**“Instructions for Completing the Cause of Death Section of the Death Certificate, 2003 rev.”**

- published by CDC [http://www.cdc.gov/nchs/data/dvs/blue\\_form.pdf](http://www.cdc.gov/nchs/data/dvs/blue_form.pdf)



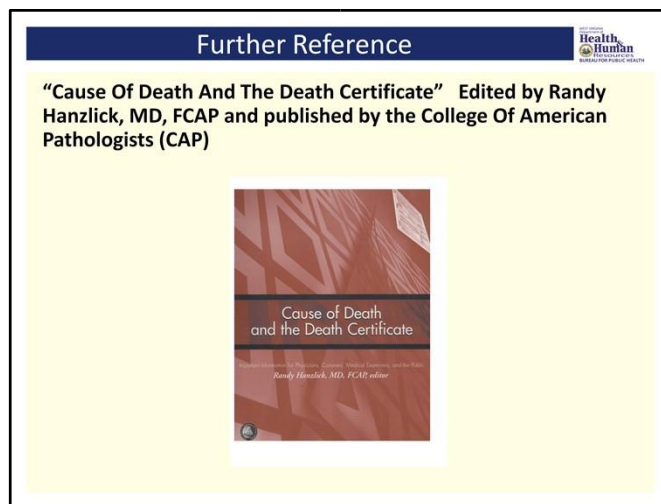
A one page handout that provides clear examples and instructions as well as a smaller folding version is also available.

## Reference Materials



- “Quick Tips On Writing Cause Of Death Statements” – National Association Of Medical Examiners
- “Writing Cause of Death Statements – Basic Principles” – National Association of Medical Examiners  
(For both of the above, go the [www.thename.org](http://www.thename.org) and click on “Death Certification” in the left sidebar)
- Web Article - Possible Solutions to Common Problems in Death Certification (including Uncertainty, the Elderly, and Infant Deaths) – CDC  
[http://www.cdc.gov/nchs/nvss/death\\_certification\\_problems.htm](http://www.cdc.gov/nchs/nvss/death_certification_problems.htm)

The National Association of Medical Examiners also has publications available on writing cause of death statements and the CDC has several specialty articles on Possible Solutions to Common Problems in Death Certification including Uncertainty, the Elderly and Infant Deaths.



This is an exhaustive work on the subject edited by Dr. Randy Hanzlick and published by the College of American Pathologists.

Dr. Hanzlick is a Professor of Forensic Pathology and the Director of Forensic Pathology Training at Emory University School of Medicine and is the Chief Medical Examiner for Fulton County, Georgia. He is probably this country's foremost expert on the subject of medical certification of cause of death. It is rare when you see something written on this subject that does not involve him in one way, shape or form.

## Cause of Death is OPINION



The cause of death provided by an attending physician or APRN should be the physician's or APRN's best informed medical OPINION based on their training and knowledge of the patient's medical history, course of treatment and the other circumstances surrounding the final illness that resulted in death.

Before getting into the mechanics of constructing cause of death statements, a quick word about the General Nature of Cause of Death Statements and what the expectations are:

The cause of death statement provided by an attending physician or APRN should be the physician's or APRN's best informed medical opinion based on their training and knowledge of the patient's medical history, course of treatment and the other circumstances surrounding the final illness that resulted in death. That knowledge of the event may be extensive. That knowledge may be minimal.

It is not reasonable, nor could it ever be held to be a physician's or APRN's responsibility, legal or otherwise, to render a cause of death with the measure of clinical accuracy that could only be obtained through full autopsy of the decedent.

Indeed, many death certificates result in an unknown cause of death even when an autopsy was completed.

**Terminal (Agonal) events are non-specific and are involved in nearly all deaths:**

- Asystole
- Cardiac Arrest
- Cardiopulmonary Arrest
- Cardiorespiratory Arrest
- Electromechanical Dissociation
- Respiratory Arrest

Before discussing what IS the proper way to describe the diseases or conditions that resulted in death, let's discuss what are NOT proper descriptions. Terminal events, sometimes known as "agonal" events, must not be used. They are devoid of useful information. Those terms do nothing to differentiate one death from another – there is nothing special about saying that a dead person has quit breathing or that his heart has stopped beating. EVERYONE who dies quits breathing and their heart stops beating. These terms only serve to further attest that a death has occurred but not WHY the death occurred.

Cause of Death Statement		Health @ Human BUREAU FOR PUBLIC HEALTH
Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	Immediate Cause	
	A.	
	B.	
	C.	
	D.	
Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1		
Part 2		

This is a representation of the Statement of Cause of Death on a death certificate.

The cause of death statement on a death certificate is basically meant to be a mini-case history of the events and circumstances of death. There are two main parts to the cause of death statement.

In Part 1, the STATEMENT OF CAUSES OF DEATH, at the barest minimum, the physician or APRN must state the underlying cause of death. The underlying cause of death may be the only thing that is listed, but the physician or APRN also has the opportunity to provide separate immediate or intermediate causes of death. This is what that entails.

Underlying, Immediate, Intermediate Cause	Health @ Human BUREAU FOR PUBLIC HEALTH
<p><b>IMMEDIATE</b> – “the final disease (condition) or complication resulting from the underlying cause of death, occurring closest to the time of death, and directly causing death.”</p>	
<p><b>INTERMEDIATE</b> – “a disease (condition) or complication occurring somewhere in time between the underlying cause of death and the immediate cause of death”.</p>	
<p><b>UNDERLYING</b> – “the disease (condition) that initiated the train of morbid events leading directly to death.”</p>	
<p><small>Cause of Death and the Death Certificate, Hanzlick, 2006</small></p>	




The **IMMEDIATE** Cause of Death is “the final disease or complication resulting from the underlying cause of death, occurring closest to the time of death, and directly causing death.”

The **INTERMEDIATE** Cause of Death is “a disease or complication occurring somewhere in time between the underlying cause of death and the immediate cause of death”. There could be multiple intermediate causes.

And

The **UNDERLYING** Cause of Death is “the disease that initiated the train of morbid events leading directly to death.”

Cause of Death Statement		
Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	<i>Immediate Cause</i> A. Most recent condition (resulting from B)	
	<i>Another Intermediate Cause</i> B. An older condition (resulting from C)	
	<i>Intermediate Cause</i> C. An even older condition (resulting from D)	
	D. The first (oldest) condition causing the others above. <i>Underlying Cause</i>	
Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1		
Part 2		

Cause of Death and the Death Certificate, Hanzlick, 2006

The statement of cause of death section is meant to be sequential. One, there must always be something on line A. It is the immediate cause of death, which may also be the underlying cause of death. However, there is the opportunity to provide additional information. When provided, that information should be in sequence – that is, the condition on

line A was as a consequence of the older condition listed on line B which was as a consequence of an even older condition on Line C which was a consequence of the oldest condition listed on Line D.

One leads to another.

It is not required nor is it usually necessary to use all of the lines available.

You may ask, “if all that is needed is to provide the underlying cause – the cause that initiated the train of morbid events leading to a demise - why is there a need to provide additional information?”

Although we code the underlying cause of death for analysis, what are known as multiple cause of death are also coded for analysis purposes. The more information that we have about the conditions that caused death, the more we have for analysis for proper comparisons and determinations.

Coding causes of death follows a complex set of rules. What a clinician might see as an underlying cause, a trained coder may see another condition or disease that the rules say should be the underlying cause AS LONG AS THE INFORMATION IS PROVIDED TO THEM.

The image shows a 'Cause of Death Statement' form. At the top right is the logo for 'Health Human SERVICES' with the tagline 'IMPROVING PUBLIC HEALTH'. The form is divided into two main sections: Part 1 and Part 2.

**Part 1 – Statement of Cause(s) of Death**

Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	Immediate Cause	
	A. Acute Myocardial Infarct	Hours
	B. Atherosclerotic coronary artery disease	Years
	C.	
	D.	

**Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1**


Part 2

Cause of Death and the Death Certificate, Hanzlick, 2006

Let’s jump into some examples –

In this scenario, the underlying cause of death is the atherosclerotic coronary artery disease which the decedent had for years and which led to the

immediate cause of death, the final complication, which was an Acute Myocardial Infarct.


Cause of Death Statement		
<b>Part 1 – Statement of Cause(s) of Death</b>		<b>Approx. Interval between onset and death</b>
<b>Part 1</b>	Immediate Cause	
	A. Pulmonary infarct	Hours
	B. Pulmonary thromboembolism	Hours
	C. Deep leg thrombosis	Days
	D. Essential thrombocytosis	Months
<b>Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1</b>		
<b>Part 2</b>		

*Cause of Death and the Death Certificate, Hanzlick, 2006*

This is an example of a cause of death statement that includes intermediate causes of death. Again, the underlying cause is on the last line and the immediate cause of death is on the first line.

The essential thrombocytosis caused the deep leg thrombosis that caused a pulmonary thromboembolism that resulted in the pulmonary infarct.

There is a good general rule about writing these. Note the approximate intervals between onset of these individual conditions and death. They run from the longest interval, months, on the bottom, the underlying cause, to the shortest, hours, on the top, the immediate cause. Chances are, if they do not run from top to bottom shortest time interval to longest or, as in this example, the same as one above or below it, the statement is written in the wrong order.

Cause of Death Statement		
Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	Immediate Cause	Approx 4yrs
	A. Prostate carcinoma with lung metastases	
	B.	
	C.	
	D.	
Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1		
Part 2		

*Cause of Death and the Death Certificate, Hanzlick, 2006*

As a case scenario, Dr. Hanzlick provided this example of the proper use of the one line cause of death statement. The scenario involved a patient who had prostate cancer metastatic to the lungs. His condition deteriorated. He died at home with no evidence of foul play. His personal physician was expected to complete the death certificate. There was no autopsy. His physician was confident regarding the underlying cause of death but was not sure what the specific complication was that finally caused death.

When lacking information about a specific immediate cause of death, this single line method describing the underlying cause of death is completely appropriate.

There are many causes of death that lend themselves to a one-line statement of cause of death. Alzheimer’s Disease comes to mind. End-stage renal disease would be another. COPD is yet another.

Cause of Death Statement		Approx. Interval between onset and death
<b>Part 1 – Statement of Cause(s) of Death</b>		
<b>Part 1</b>	Immediate Cause	
	A. Acute Myocardial Infarct	2 days
	B. Coronary artery thrombosis	2 days
	C. Atherosclerotic coronary artery disease	Decades
D.		
<b>Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1</b>		
<b>Part 2</b>	Essential hypertension	

*Cause of Death and the Death Certificate, Hanzlick, 2006*

Up to this point, we've not discussed the use of Part 2 – Other Significant Conditions. These are conditions that contribute to death but do not result in the underlying cause of death. Risk Factors are often listed in this area of the death certificate and certifiers are URGED to list risk factors. By and large, risk factors should not appear in Part 1. Other significant conditions may also be co-morbid diseases that contributed to death – but again, that are not in progression to or from the underlying cause.

In this example, the underlying cause of death was atherosclerotic coronary artery disease. It was not caused by essential hypertension but it contributed to the cause of death. You can probably think of many risk factors such as tobacco use, morbid obesity, and chronic alcohol use as contributors to many other disease deaths.

Specificity	
<b><u>SPECIFIC CONDITIONS / ILLNESS</u></b>	<b><u>NON-SPECIFIC PROCESSES</u></b>
<ul style="list-style-type: none"> <li>▪ Alzheimer's Dementia</li> <li>▪ Adenocarcinoma of prostate</li> <li>▪ Perforated gastric peptic ulcer</li> <li>▪ Asthma</li> <li>▪ Meningococcal meningitis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Bowel obstruction</li> <li>▪ Renal failure</li> <li>▪ Sepsis</li> <li>▪ Congestive heart failure</li> <li>▪ Multi-organ failure</li> <li>▪ Gastrointestinal hemorrhage</li> </ul>

*Cause of Death and the Death Certificate, Hanzlick, 2006*

The physician or APRN who certifies to the cause of death should always seek to use language that is specific such as those listed here. Non-specific processes are usually complications of underlying causes of death and should not be used except as an immediate or intermediate cause of death in Part 1 of the death certificate UNLESS the underlying cause of death is unknown AND qualifying descriptors are used. What is meant by a qualifying descriptor?

**Qualifiers**



- Unknown
- Undetermined
- Probable
- Presumed
- Suspected
- Unknown etiology

This is what is meant. Qualifying language can be used to establish that insufficient information was available to the physician or APRN certifier or that a degree of uncertainty existed and that a specific cause of death was not simply overlooked. It is particularly important to use a qualifier on a suspected RARE cause of death – especially those that are communicable or potentially communicable. For example – Creutzfeldt-Jakob Disease. For rare causes, unless confirmed by autopsy or in some manner by biopsy, please use a qualifier such as probable, presumed or suspected. Otherwise, it sets off alarm bells at CDC. Even WITH a qualifier, the Bureau for Public Health will still follow up with an additional query for more information.



Using Qualifiers		
Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	A. Upper gastrointestinal hemorrhage, specific natural cause unknown	Hours
	B.	
Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	Immediate Cause	
	A. Upper gastrointestinal hemorrhage	Hours
	B. Presumed gastric ulcer	Unknown

*Cause of Death and the Death Certificate, Hanzlick, 2006*

Here are two examples of the same scenario displayed in two different manners with qualifiers.

The first is described using a qualified non-specific process. “Upper gastrointestinal hemorrhage” is a non-specific process as numerous things could have caused it. It is further qualified by saying, “specific natural cause unknown”.

The second is described using a qualified SPECIFIC process on Line B. Gastric ulcer is a specific condition.

Both of these are completely appropriate and they will both yield an underlying cause code somewhere in the same ballpark when using the automated coding program created by the CDC – known as SuperMicar. Writing cause of death statements is NOT an exact science. There are often many variations and all of them be appropriate.

However, just because it is not an exact science, certifiers should not also treat it as a “free-style” event.

## Cause-of-Death Rule of Thumb



**“A cause of death statement must contain an underlying cause of death; if a specific condition cannot be cited as the underlying cause of death, the underlying cause of death should consist of a qualified specific process or a qualified non-specific process.”**

*Cause of Death and the Death Certificate, Hanzlick, 2006*

Hanzlick sums up all of his examples used so far with this Cause of Death Rule of Thumb:

“A cause of death statement must contain an underlying cause of death; if a specific condition cannot be cited as the underlying cause of death, the underlying cause of death should consist of a qualified specific process or a qualified non-specific process.”

**No Underlying Cause of Death Example**

**Health Human**  
BUREAU FOR PUBLIC HEALTH

27 PART I Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.

IMMEDIATE CAUSE (Final disease or condition resulting in death) → Unknown

1. DUE TO OR AS A CONSEQUENCE OF: \_\_\_\_\_

2. DUE TO OR AS A CONSEQUENCE OF: \_\_\_\_\_

3. DUE TO OR AS A CONSEQUENCE OF: \_\_\_\_\_

28 PART II Other significant conditions contributing to death but not resulting in the underlying cause given in Part I

Peripheral vascular disease, Hypertension

29 THE VESSEL AUTOPSY PERFORMED? (Yes or No) NO

30 WERE AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH? (Yes or No) N/A

31 NUMBER OF DEATH:  Natural  Pending Investigation  Accident  Suicide  Could not be determined  Homicide

32a DATE OF INJURY (Month, Day, Year) N/A

32b TIME OF INJURY N/A

32c INJURY AT WORK? (Yes or No) N/A

32d DESCRIBE HOW INJURY OCCURRED N/A

33a PLACE OF INJURY - At home, farm, street, factory, office, building, etc. (Specify) N/A

33b LOCATION (Street and Number or P.O. Box, Rural Route, City or Town, State) N/A

34a CERTIFIER (Check only one)

PHYSICIAN (Physician certifying cause of death when another physician has pronounced death and completed item 23)

TO THE BEST OF MY KNOWLEDGE, DEATH OCCURRED DUE TO THE DISEASES AND INJURIES AS STATED

*Cause of Death and the Death Certificate, Hanzlick, 2006*

Here's an example of a cause of death on a death certificate that we had to be queried back to a physician. There is no stated underlying cause of death. The physician may very well have not known the immediate cause of death, but yet stated peripheral vascular disease and hypertension as "other significant conditions". It is likely that if that was all that was known, that peripheral vascular disease could have been used as the underlying cause.

Also, there are sections regarding an accident in which this certifier felt the need to write in N/A. That is unnecessary.

### The following conditions may indicate injury:

- Subdural hematoma
- Epidural hematoma
- Subarachnoid hemorrhage
- Fracture
- Pulmonary Emboli
- Thermal burns / chemical burns
- Sepsis

Before going on to discuss a few special areas, certifiers should be aware that some conditions or occurrences are indicative of injury. These are specific causes of death, that when listed on a death certificate, that if a Registrar sees, they will likely end up in a query back to the certifier or as a referral to a Medical Examiner.

**The following conditions may indicate injury:**

- Hyperthermia
- Hypothermia
- Hip Fracture
- Seizure disorder
- Drug or alcohol overdose / drug or alcohol abuse

And here are some more.....hip fracture and subdural hematoma are probably the two most common causes that we end up querying as both are indicative of falls.

Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
Part 1	Immediate Cause	
	A. Subarachnoid Hemorrhage	Hours
	B. Undetermined Natural Causes	Unknown
	C.	
	D.	


Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1

Part 2

*Cause of Death and the Death Certificate, Hanzlick, 2006*

This is an example as to how to clarify that a subarachnoid hemorrhage was due to natural causes. With this language, there is no reason for us to query back to you or refer it to a Medical Examiner. Especially in older and bed-ridden patients whose bones have become brittle and weak, their bones can fracture just by rolling over in a bed. If a break of that nature occurs, it should be listed as a non-traumatic fracture.

**Neoplasia Tips**



- Specify the primary site and benign or malignant nature of a neoplasm – or specify unknown
- Specify the cell type and grade of a neoplasm – or specify unknown
- Specify the part or lobe of an organ involved by a neoplasm

*Cause of Death and the Death Certificate, Hanzlick, 2006*

These are a few quick tips for writing cause of death statements for cancer deaths.

Specify the primary site and benign or malignant nature of a neoplasm – or specify unknown

Specify the cell type and grade of a neoplasm – or specify unknown

Specify the part or lobe of an organ involved by a neoplasm – or specify unknown.

## Neoplasia Tips - Examples



- “Well differentiated squamous cell carcinoma, left upper lung lobe”
- “Poorly differentiated adenocarcinoma, unknown primary site”

*Cause of Death and the Death Certificate, Hanzlick, 2006*

These are two examples of well written single line underlying causes of death for neoplasms.

Well differentiated squamous cell carcinoma, left upper lung lobe.

Poorly differentiated adenocarcinoma, unknown primary site.



## Deaths Associated with Aging



**There are differences in opinion as to the language that can be used – no uniformly accepted protocol.**

Hanzlick – “Use of such terms as senescence, old age, infirmity, and advanced age is acceptable, but should not be overused for convenience.”


CDC – “Causes of death on the death certificate should not include terms such as senescence, old age, infirmity, and advanced age because they have little value for public health or medical research.”

Deaths associated with aging are a daily problem. Of course, if an underlying cause of death is known or is suspected, that should be used. But in many cases, even though a disease is present, it is not so extensive as to have caused death in and of itself. The saying is that often the elderly die with their disease, not because of it.

This is one of the few areas where CDC and Dr. Hanzlick part company in terms of what language is acceptable. Hanzlick says that terms such as senescence, old age and infirmity can be used. The CDC says they should not be used. Do note that Hanzlick states that they should not be overused for convenience sake.

As the experts disagree, feel free to come down on the side that makes the most sense to you in a given situation.

**When You Just Don't Know**




- Rule out that the death is a Medical Examiner's case. (If you are unsure, call them.)
- Consult with a pathologist.
- Report what you know or what you suspect is probable.
- And if all else fails...

But what does a certifier do when they just don't know?

- 1) Rule out that it is a medical examiner 's case – if the certifier cannot, the OCME should be contacted.
- 2) If an “in-hospital death” the certifier can consult with a pathologist or consult with a Physician Medical Examiner.
- 3) The certifier should report what they know or what they suspect or is probable – and use qualifying language when necessary.

And if all else fails.....

**The Ultimate Fallback**



Part 1 – Statement of Cause(s) of Death		Approx. Interval between onset and death
<b>Part 1</b>	Immediate Cause	
<b>A.</b>	Undetermined Natural Disease Process	Unknown
<b>B.</b>		
<b>C.</b>		
<b>D.</b>		

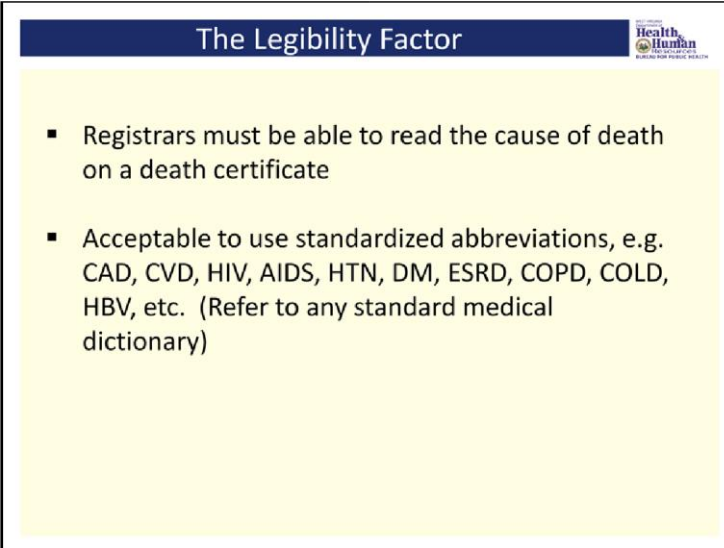
**Part 2 - Other Significant Conditions – Conditions contributing to death but not resulting in the underlying cause of death in Part 1**

<b>Part 2</b>	( List if known )
---------------	-------------------

The ultimate fallback – Undetermined natural disease process or condition, with a listing of any other significant conditions if known.

Just make sure that the state office knows that the certifier doesn't know any other specific etiology, but whatever it was, all indications are that it was due to natural causes.

Again, this is a category that should NOT be overused – especially when specific conditions or diseases are known, suspected, or probable.



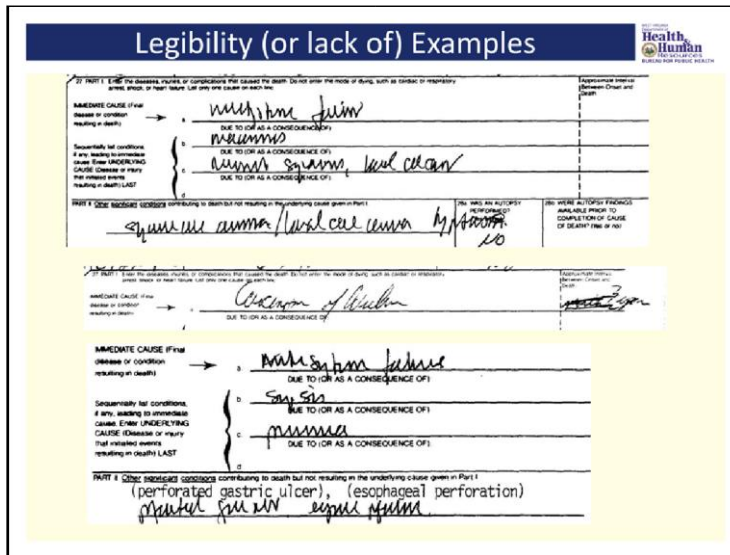
The slide is titled "The Legibility Factor" and features a logo for "Health Human SERVICES" in the top right corner. The main content is a list of two bullet points on a yellow background.

- Registrars must be able to read the cause of death on a death certificate
- Acceptable to use standardized abbreviations, e.g. CAD, CVD, HIV, AIDS, HTN, DM, ESRD, COPD, COLD, HBV, etc. (Refer to any standard medical dictionary)

Legibility is also a factor. It should also be pointed out that it is perfectly acceptable to use standardized medical abbreviations when completing the cause of death.

Legibility is very important. According to a July 2006 report from the National Academies of Science's Institute of Medicine (IOM), preventable medication mistakes injure more than 1.5 million Americans annually. Many such errors result from unclear abbreviations and dosage indications and illegible writing on some of the 3.2 billion prescriptions written in the U.S. every year.

At least with a death certificate bad handwriting can cause no harm to the patient. Try these on for size.



These are just three real world examples of death certificates that came into the state office. These are just several of thousands of others that could be used for demonstration. State office staff is very good, having viewed and edited hundreds of thousands of death certificates in their tenure, but even they had trouble with these.

By and large they were able to get bits and pieces of these but ended up having to call to find out what they say. On the second one, we guessed at Carcinoma of the ..... something. On the last one, we assumed it said Multi system Failure, Sepsis, and probably Pneumonia, but were at a loss on translating the perforated gastric ulcer and esophageal perforation in the other significant conditions section.

## Why So Important?




- The literal description of cause and manner of death is keyed into a program called SuperMicar. SuperMicar provides standardized coding for underlying and multiple causes of death for analysis purposes.
- Standardized Coding is according to protocols established in the World Health Organization's (WHO) International Classification of Diseases, 10th revision.

Aside from needing to know whether an injury is somehow implicated as part of the cause of death so as to refer it to the Medical Examiner's office or there is an infectious disease element at play, the information provided as the literal description is keyed into a program developed by CDC called SuperMicar. All states use it for consistency and uniformity.

SuperMicar generates an underlying cause code and multiple cause codes from the literals provided by the physician. It is from those Codes, based on the World Health Organization's International Classification of Diseases, 10<sup>th</sup> revision, that one is able to do analysis. As was mentioned at the very beginning, death certificates are data collection mechanisms as well as legal documents.

**SuperMicar Example**




<p><b>IMMEDIATE CAUSE (Final disease or condition leading to death)</b></p> <p><b>INTERMEDIATE CAUSE (If any, leading to immediate cause. Enter UNDERLYING CAUSE (Disease or injury that initiated events resulting in death) LAST)</b></p>	<p><i>Rupture of Myocardium</i></p> <p><i>Acute Myocardial Infarction</i></p> <p><i>Chronic Ischemic Heart Disease</i></p>	<p><i>This</i></p> <p><i>Hours</i></p> <p><i>years</i></p>
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**Underlying Cause – ICD-10 Code I21.9**  
Acute Myocardial Infarction, unspecified

**Multiple Cause – ICD-10 Code I25.9**  
Chronic Ischemic Heart Disease, unspecified

So, the literal descriptions written by a medical certifier become codes for analysis purposes. As can be seen from this example, the SuperMicar program actually coded the underlying cause in this death to be the Acute Myocardial Infarction with the Chronic Ischemic Heart Disease being a multiple cause.

**SuperMicar Example**



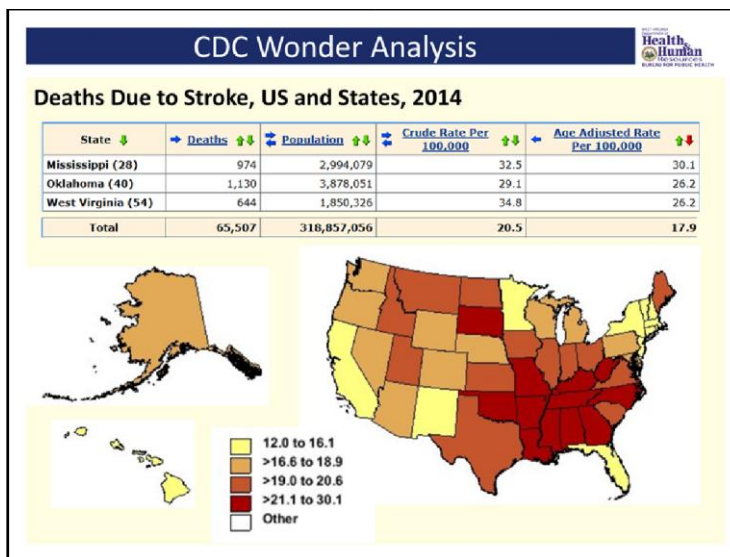
<p><b>OF PART 1:</b> Enter the diseases, injuries, or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. Use only one cause or cause list.</p> <p><b>IMMEDIATE CAUSE (final disease or condition resulting in death)</b> → <u>Cerebrovascular accident</u></p> <p><b>Due to (or as a consequence of):</b></p> <p><b>1.</b> _____</p> <p><b>2.</b> _____</p> <p><b>3.</b> _____</p> <p><b>4.</b> _____</p> <p><b>5.</b> _____</p> <p><b>6.</b> _____</p> <p><b>7.</b> _____</p> <p><b>8.</b> _____</p> <p><b>9.</b> _____</p> <p><b>10.</b> _____</p> <p><b>11.</b> _____</p> <p><b>12.</b> _____</p> <p><b>13.</b> _____</p> <p><b>14.</b> _____</p> <p><b>15.</b> _____</p> <p><b>16.</b> _____</p> <p><b>17.</b> _____</p> <p><b>18.</b> _____</p> <p><b>19.</b> _____</p> <p><b>20.</b> _____</p> <p><b>21.</b> _____</p> <p><b>22.</b> _____</p> <p><b>23.</b> _____</p> <p><b>24.</b> _____</p> <p><b>25.</b> _____</p> <p><b>26.</b> _____</p> <p><b>27.</b> _____</p> <p><b>28.</b> _____</p> <p><b>29.</b> _____</p> <p><b>30.</b> _____</p> <p><b>31.</b> _____</p> <p><b>32.</b> _____</p> <p><b>33.</b> _____</p> <p><b>34.</b> _____</p> <p><b>35.</b> _____</p> <p><b>36.</b> _____</p> <p><b>37.</b> _____</p> <p><b>38.</b> _____</p> <p><b>39.</b> _____</p> <p><b>40.</b> _____</p> <p><b>41.</b> _____</p> <p><b>42.</b> _____</p> <p><b>43.</b> _____</p> <p><b>44.</b> _____</p> <p><b>45.</b> _____</p> <p><b>46.</b> _____</p> <p><b>47.</b> _____</p> <p><b>48.</b> _____</p> <p><b>49.</b> _____</p> <p><b>50.</b> _____</p> <p><b>51.</b> _____</p> <p><b>52.</b> _____</p> <p><b>53.</b> _____</p> <p><b>54.</b> _____</p> <p><b>55.</b> _____</p> <p><b>56.</b> _____</p> <p><b>57.</b> _____</p> <p><b>58.</b> _____</p> <p><b>59.</b> _____</p> <p><b>60.</b> _____</p> <p><b>61.</b> _____</p> <p><b>62.</b> _____</p> <p><b>63.</b> _____</p> <p><b>64.</b> _____</p> <p><b>65.</b> _____</p> <p><b>66.</b> _____</p> <p><b>67.</b> _____</p> <p><b>68.</b> _____</p> <p><b>69.</b> _____</p> <p><b>70.</b> _____</p> <p><b>71.</b> _____</p> <p><b>72.</b> _____</p> <p><b>73.</b> _____</p> <p><b>74.</b> _____</p> <p><b>75.</b> _____</p> <p><b>76.</b> _____</p> <p><b>77.</b> _____</p> <p><b>78.</b> _____</p> <p><b>79.</b> _____</p> <p><b>80.</b> _____</p> <p><b>81.</b> _____</p> <p><b>82.</b> _____</p> <p><b>83.</b> _____</p> <p><b>84.</b> _____</p> <p><b>85.</b> _____</p> <p><b>86.</b> _____</p> <p><b>87.</b> _____</p> <p><b>88.</b> _____</p> <p><b>89.</b> _____</p> <p><b>90.</b> _____</p> <p><b>91.</b> _____</p> <p><b>92.</b> _____</p> <p><b>93.</b> _____</p> <p><b>94.</b> _____</p> <p><b>95.</b> _____</p> <p><b>96.</b> _____</p> <p><b>97.</b> _____</p> <p><b>98.</b> _____</p> <p><b>99.</b> _____</p> <p><b>100.</b> _____</p>	<p><b>Time Interval Between Death and Cause</b></p> <p><u>6 weeks</u></p>
<p><b>IF ANY OF THE IMMEDIATE CAUSES IDENTIFIED IN PART 1 ARE RESULTING IN THE UNDERLYING CAUSE GIVEN IN PART 1:</b></p> <p><u>HYPERTENSION, TYPE II DIABETES MELLITUS</u></p>	<p><b>WERE ANY AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH?</b></p> <p><u>NO</u></p>
	<p><b>WERE ANY AUTOPSY FINDINGS AVAILABLE PRIOR TO COMPLETION OF CAUSE OF DEATH?</b></p> <p><u>NA</u></p>

Underlying Cause – ICD-10 Code I64  
 Stroke, not specified as hemorrhage or infarction

Multiple Cause – ICD-10 Code I10  
 Essential (primary) hypertension

Multiple Cause – ICD-10 Code E11  
 Non-insulin dependent diabetes mellitus

This second example shows how Cerebrovascular Accident and some mention of other contributing conditions ends up in terms of coding. The stroke is Coded as the underlying cause with hypertension and type II diabetes listed as multiple causes.




Once causes of death are coded, they are then useful for analysis. Using a program called CDC Wonder, accessible to anyone, this is a partial table of deaths due to stroke by state for 2014 ranked by age-adjusted rate. As can be seen, there were 644 deaths to West Virginia residents in 2014 attributable to stroke and West Virginia tied for the second highest age-adjusted rate in the nation at 26.2 deaths per 100,000 population. The age-adjusted rate is almost 50% higher than the US rate of 17.9 per 100,000. FYI – in terms of crude rate per 100,000, West Virginia, at 34.8 per 100,000 had the highest rate in the nation. As to what the difference is between crude and age-adjusted rates? That’s a different training.



If causes of death are not on a death certificate  
They cannot be compiled and analyzed.

As a certifier, the analysis of death data may mean little to you. The point was that if what is known about the causes of death are not on a death certificate, they cannot be compiled and analyzed.

The certifier, in this regard, adds to the knowledge base important to public health and medical research.

Quality Improvement 

- Missing Link of Physician and ME/Coroner Education
- Electronic Implementation of Electronic Death Registration System

In the last few years there has been push nationally to improve the quality of cause of death data.

A vital and almost missing link in this whole process has been the education of certifiers in this process, primarily due to the belief that due to their wide and deep understanding of human physiology and the practice of medicine they should somehow automatically know what is expected when completing a death certificate. We were wrong. Practically every state now has initiatives to try to improve the quality of cause of death information.

The other link, at least for us here in WV, as many of the other states have these systems in place, is an Electronic Death Registration System. However, still, electronic or paper, the garbage-in-garbage-out problem still exists, with an electronic system only allowing certifiers to provide incorrect information much more rapidly.

## Contact Information



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If at any point, you, as a certifier, have questions regarding the certification of cause of death, please always feel free to contact the office.

# **Additional Resources for Death Certificate Training**

## **CDC Resources**

[Physicians' Handbook on Medical Certification of Death](#)

[Instructions for Completing the Cause-of-Death Section of the Death Certificate \(blue form\)](#)

[Possible Solutions to Common Problems in Death Certification](#)

## **National Association of Medical Examiners**

[Death Certificate Tutorial from National Association of Medical Examiners](#)

[Quick Tips on Writing Cause of Death Statements](#)

## **Additional Resources**

[Virtual Autopsy](#)

[The Autopsy, Medicine and Mortality Statistics](#)

[West Virginia Department of Health & Human Resources Bureau of Public Health - Health Statistic Center](#)

## **Attestation of Completion**

[APRN Death Certificate Training Course Attestation of Completion](#)