



Death Certificates in the Time of COVID-19

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Who would have thought death certificates (DCs) would ever become a topic of discussion and controversy? But here we are, with everyone from the Center for Disease Control and Prevention (CDC) to PA Department of Health (DOH) to local health departments, and of course your County Coroner weighing in on how to certify the cause of death during the COVID-19 pandemic. In addition to confusion about medical terminology, many health care facilities and providers in the County were caught unprepared when the PA Department of Health on March 6, 2020 (revised April 16, 2020) mandated that COVID-19 related deaths be certified electronically¹. As a coroner, I often complete multiple death certificates daily and have a great deal of respect for the importance of this document and what it means for public health and safety as well as families.



In Pennsylvania, MDs, DOs, CRNPs, PAs or coroners and medical examiners can pronounce death and medically certify the cause and manner of death. RNs can pronounce a death, but are not authorized to certify the cause and manner of death.

In Pennsylvania, state law [16 P.S. §1218-B (a)] lists the types of deaths which fall under the jurisdiction of the coroner. They include “*deaths known or suspected to be due to a contagious disease and constituting a public health hazard.*”

This is the reason we require such deaths to be reported to my office. In almost all cases, we simply take a report, with the investigation limited to a standard set of questions. If the death is attributed to COVID-19, a natural manner of death, and the attending health care provider is willing and able to complete the death certificate, we authorize release of the body to the funeral home.

The Basics

Let’s start with a refresher on the basic anatomy of a DC, because probably no one ever had so much as a lecture on this in medical school. There are two parts, the “medical certification” and the personal/demographic section. The cause and manner of death are stated in the medical part, along with other items such as tobacco use and pregnancy information (Figure 1). The personal/demographic part is completed by a licensed funeral director.

Entering the Cause of Death

The CDC and others are particular about the kinds of conditions and events that can be listed as a cause of death; they also want to see a logical sequence. As it states right on the death certificate, “*DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology.*” Whatever is entered last in the cause of death section is the underlying cause of death, so it is the most important one to get right. It must logically have led to or caused the terminal or intermediate events on the preceding lines.

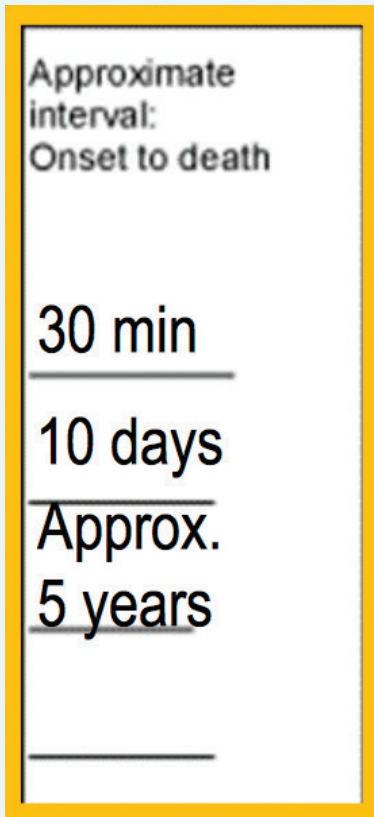
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CAUSE OF DEATH (See instructions and examples)		Approximate Interval: Onset to death
<p>32. PART I. Enter the chain of events—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.</p> <p>IMMEDIATE CAUSE (Final disease or condition resulting in death) → a. Rupture of myocardium</p> <p>Due to (or as a consequence of):</p> <p>Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST</p> <p>b. Acute myocardial infarction</p> <p>Due to (or as a consequence of):</p> <p>c. Coronary artery thrombosis</p> <p>Due to (or as a consequence of):</p> <p>d. Atherosclerotic coronary artery disease</p>		<p>Minutes</p> <p>6 days</p> <p>5 years</p> <p>7 years</p>
<p>PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I.</p> <p>Diabetes, Chronic obstructive pulmonary disease, smoking</p>		<p>33. WAS AN AUTOPSY PERFORMED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> Probably <input type="checkbox"/> No <input type="checkbox"/> Unknown</p>	<p>36. IF FEMALE:</p> <p><input checked="" type="checkbox"/> Not pregnant within past year</p> <p><input type="checkbox"/> Pregnant at time of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant within 42 days of death</p> <p><input type="checkbox"/> Not pregnant, but pregnant 43 days to 1 year before death</p> <p><input type="checkbox"/> Unknown if pregnant within the past year</p>	<p>37. MANNER OF DEATH</p> <p><input checked="" type="checkbox"/> Natural <input type="checkbox"/> Homicide</p> <p><input type="checkbox"/> Accident <input type="checkbox"/> Pending investigation</p> <p><input type="checkbox"/> Suicide <input type="checkbox"/> Could not be determined</p>

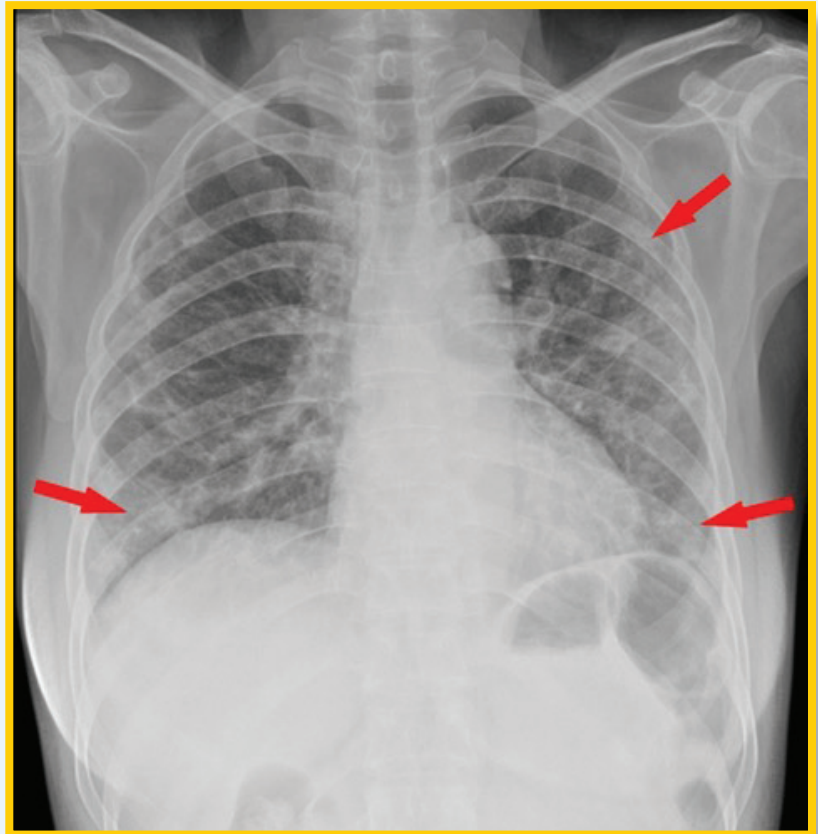
(Figure 1)

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(Figure 2)



(Figure 3)

The duration of the event or disease – time of onset to death – MUST be entered for every line (Figure 2). For example, if line 1 says “lethal arrhythmia,” the duration might be minutes. If the underlying cause of the arrhythmia (and the death) is atherosclerotic coronary artery disease, the interval from onset to death may be years. Death certificates can be rejected for lack of duration information.

Any diseases, injuries, or conditions that contributed to the death but did not directly cause the death, can be entered in a separate section, Part 2 of the medical certification. It’s well-recognized that the elderly, particularly those with underlying health conditions, have been the most severely impacted by COVID-19, so this section may list multiple conditions that may have predisposed the patient to dying from COVID-19. When completing this section for a COVID-19 death, I err on the side of listing as many significant conditions as possible, since we just don’t know yet what is relevant and what isn’t.

On April 6, 2020, the CDC held a webinar on certifying COVID-19 deaths⁽²⁾. It is still available on-line and free CME is available. The National Center for Vital Statistics also has a written guidance on the topic⁽³⁾. Both emphasize entering a logical chain of events leading to the death. An example of a logical sequence might be “Sepsis” on Line 1, “Pneumonia” on Line 2, and “COVID-19” – the underlying cause – on Line 3. An illogical

sequence would be “Pneumonia” on Line 1, “COVID-19” on Line 2, and “Dementia” on Line 3.

Unless you’re a medical examiner or coroner (ME/C), you will never certify a Manner of Death other than natural. Let me say that another way: if any kind of accident, fall, or trauma possibly contributed to the death to any degree, it is an ME/C case as only the county medicolegal death investigation office can certify non-natural deaths.

COVID-19 Terminology

Common terminal events reported on death certificates for COVID-19 deaths are pneumonia, acute hypoxic respiratory failure, and sepsis. As elsewhere, pneumonia, particularly multi-focal pneumonia, quickly became the most common terminal event in Chester County COVID-19 deaths (Figure 3). COVID-19 is an underlying cause of these and possibly other terminal events, but it is not a terminal event in and of itself.

“COVID-19” is the correct wording for the underlying cause of death. Not COVID-19 virus, not COVID-19 infection. That’s because COVID-19 is a disease name, not the name of a virus. The virus is SARS-CoV-2. It’s just like the difference between AIDS and HIV.

Electronic Death Registration System (EDRS)

Since at least 2017, the PA Department of Health has had a system in place for electronic rather than paper death certification. As it turned out, neither the Chester County Coroner's Office nor most medical facilities and physicians were using EDRS at the time COVID-19 began to spread in our community. On March 6, the DOH mandated via State Registrar Notice 2020-01 that all COVID-19 deaths were to be reported only via EDRS, that the certifier should complete the medical certification before releasing the body to a funeral home, and that the death certificate needed to be completed within 24 hours¹. Physicians overwhelmed with caring for COVID-19 patients did not have time to learn a new electronic system and paper certificates were rejected by funeral homes.

In order to meet the electronic reporting requirement and to ensure decedent disposition could proceed promptly and with appropriate safety precautions, the Coroner's Office has assisted many health care providers with EDRS medical certification for COVID-19 deaths. Completed death certificates are required for authorization of cremation. If death certificates are not completed quickly during a mass fatality event like a pandemic, cremations cannot proceed. This would result in undesirable outcomes, including lack of morgue capacity and delay in disposition of potentially contagious bodies.

Presumed COVID-19: To Test or Not To Test

That has been the question over the past weeks and months, as inept planning at the highest levels and restricted testing led to a shortage of tests and test results for COVID-19. While hospitals in Chester County always tested for COVID-19 in suspected cases, long term care facilities did not. They were advised by both State and County Health Departments that if a certain number of residents (usually 4) had already tested positive, other residents with exposure to those residents or with symptoms could be "presumed-positive" and did not need to be tested. Unfortunately, this population surveillance concept quickly became confused with the death certification of individual deaths. As certain long term care facilities became overwhelmed with the number of deaths, the default cause of death was often simply "Presumed COVID-19." Using terms like "probable" or "presumed" is common and acceptable in medicine, but when a simple test can confirm or rule out a disease, there is no reason to defer to this kind of hedging. It is easy to write off the death of an elderly person with many comorbidities, but not a good practice. In my opinion, each individual and their family deserve, at the very least, an accurate death certificate.

The Journey of a Death Certificate

Once the medical certifier and funeral home enter data, a death certificate goes to a local registrar. There it is reviewed and officially "registered," next proceeding on to the PA Vital Statistics office in Harrisburg. Death certificates with COVID-19 are undergoing further scrutiny, including cross-referencing to COVID-19 test results (also reported to the State). There is extensive coding into ICD-10 codes, with reassignment of the entered terminology, just as with medical billing⁴. Eventually the funeral home has access to the registered death certificate, which is then provided to the next of kin for a fee of \$20.00 for each copy.

Summary

The pandemic has focused attention on death certification and posed new challenges to medical certifiers. The demand for information on the number of deaths caused by the SARS-CoV-2 virus motivated a state requirement that COVID-19 deaths only be certified electronically. A new disease and new terminology came into use. The complexity of assigning an underlying cause of death in elderly chronically ill patients means medical certifiers must be specific, logical, and accurate when completing a COVID-19 death certificate. Furthermore, certification must be done very quickly so disposition of the decedent can be promptly and safely carried out. ■

References

¹PA Department of Health Registrar Notice https://www.health.pa.gov/topics/Documents/Reporting-Registries/SRN_2020-01_COVID-19_for_Medical_Professionals.pdf

²Guidance for Certifying Deaths due to Coronavirus Disease 2019 (COVID-19). CDC COCA-Webinar April 6, 2020. https://emergency.cdc.gov/cocal/calls/2020/callinfo_041620.asp?cid=EPRhomepage

³National Center for Health Statistics. Guidance for certifying deaths due to COVID-19. Hyattsville, MD. 2020. Accessed 5/2/2020 at <https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>

⁴Alexander, Lily. July 23, 2018. Determining causes of death: How we reclassify miscoded deaths. Institute for Health Metrics and Evaluation. Accessed May 1, 2020 at <http://www.healthdata.org/acting-data/determining-causes-death-how-we-reclassify-miscoded-deaths>.