HOST: In our final segment with Dr. Robert Anderson, we discussed the importance of listing the correct underlying cause of death on the death certificate, along with examples of when COVID-19 and other causes of death should be cited in this manner.

HOST: There have been a lot of reported cases where somebody with COVID-19 recovers but still has a lot of symptoms and complications lingering, perhaps weeks or months, and then in a hypothetical situation if a person then eventually died even though they had recovered from COVID-19, would COVID-19 still be listed as the underlying cause of death or should that be the case?

ROBERT ANDERSON: Generally it should be - it's not unusual actually for somebody to get COVID-19 and develop these complications, particularly the breathing problems. And they may linger on a ventilator for weeks. But in the meantime, the virus has run its course but the damage is done. And so some of these people die. And when that happens the certifier is supposed to think to themselves, "OK, what started the chain of events leading to death? What started that sequence?" And in a case like what you described, it would be the COVID-19 that started the sequence because that's what resulted in the damage to the lungs that caused them to have to be put on a ventilator and ultimately killed them. So regardless of whether the virus is still active, COVID-19 can be reported as the underlying cause of death. It's still the disease that initiated the sequence of events leading to death even if it's not active.

HOST: Now would that be the case as well in a non-COVID-19 situation? Let's just say somebody was in a car crash and had severe after-effects, health issues and what not, and then eventually at some point down the road they died from those complications. Would that also still be appropriate for 'motor vehicle crash' to be the underlying cause of death in that situation?

ROBERT ANDERSON: Yeah this is true regardless of the cause. I mean, to give another example that is not uncommon: Suppose a person is shot by another person but survives with serious complications from the bullet wound. If those complications result in death, even if it occurs years later, then the underlying cause would be homicide. And actually these sorts of cases would be investigated as a homicide as well.

HOST: And that's assuming that in that hypothetical, the person who shot them, it wasn't an unintentional shooting of course.

ROBERT ANDERSON: Well yes this would mean that they were shot on purpose, yes. So if any disease or injury results in long term complications that eventually cause death, it's that disease or injury that caused the fatal complications, that started the sequence this should be reported as the underlying cause.

HOST: OK so a lot of people, in the media in particular, have been anxious to see where COVID-19 ranks as a leading cause of death. But I'm curious about another potential issue looming down the road as far as the categorization of COVID-19, particularly with pneumonia because for years now pneumonia and influenza have been listed as one category. And that's due to the fact that influenza, like COVID-19, causes these complications like pneumonia that can lead to death. So what about all these deaths - I guess there's nearly half of COVID-19 deaths

where pneumonia was involved. Is it something where we may likely see at some point a category called "COVID-19 and pneumonia" or how do you plan to sort of separate those?

ROBERT ANDERSON: Well you know the pneumonia and influenza category has been useful to us as an indicator for influenza mortality surveillance for decades. The emergence of COVID-19 has certainly complicated the situation from a surveillance standpoint. That said, with regard to standard cause of death tabulation and leading causes, those cases where COVID-19 is the cause of pneumonia will be reported as COVID-19 deaths. Leading causes are based on the underlying cause and so in this case COVID-19 would be the underlying cause. And the pneumonia and influenza category will only include those deaths where either pneumonia or influenza was the underlying cause. We couldn't combine pneumonia with both COVID-19 and influenza, otherwise we're going to be double counting deaths. So I don't see this for purposes of the leading causes being a big issue. It does complicate things from a surveillance standpoint but for leading causes of death, those cases where COVID-19 causes pneumonia will be in the COVID-19 category and the pneumonia and influenza will include those where pneumonia was the underlying cause or influenza was the underlying cause.

HOST: Now there are other strains of the virus out there now. Will it be possible via the death certificate to determine which strain of COVID-19 is responsible for the deaths moving forward?

ROBERT ANDERSON: It's really unlikely that we'll be able to distinguish between the strains of the virus in any meaningful way. Variants or strains of specific organisms such as viruses or bacteria are rarely reported on death certificates, so in most cases we would only have COVID-19 reported with no mention of the variant. And even if we did get the variant in some instances, because so much of it is likely to be more generally reported without mentioning the variant, we wouldn't really be able to say anything about how many deaths are due to B117 or South African variant or what have you.

MUSIC BRIDGE

HOST: This week in the March 31st edition of CDC's Morbidity and Mortality Weekly Report, NCHS published two articles which cover many of these topics discussed in our Statcasts with Dr. Robert Anderson. The articles also documented that COVID-19 was the 3rd leading cause of death in the United States in 2020, according to provisional data. Out of the estimated 357,000 COVID-19 death certificates with at least one other condition listed, 97% had a co-occurring diagnosis of a plausible chain of event condition, or a significant contributing condition, or both. These findings support the accuracy of COVID-19 mortality surveillance in the U.S. using official death certificates.

NCHS was busy with other topics this week as well. A new report on osteoporosis among older Americans age 50 and up showed that this condition has increased by more than a third, from 9.4% in 2007-2008 to 12.6% in 2017-2018. NCHS also released the latest data on maternal mortality in the U.S., showing that nearly 100 more women died from maternal causes in 2019 than the year before. The rate of maternal deaths in 2019 was also significantly higher than in 2018. Finally, NCHS released a new report examining drug overdose deaths involving opioids

and cocaine and other psychostimulants. The report showed over half of all psychostimulant deaths also involved an opioid, and that 3 out of 4 cocaine deaths involved an opioid as well.