

Robert Anderson is Chief of the Mortality Statistics Branch at NCHS. Dr. Anderson joined me to discuss the new release of 2018 mortality data as well as the new data on maternal mortality in the United States:

Q: Before we get into the subject of maternal mortality, there are a number of other mortality topics in this release that are significant. Let's start with life expectancy.

RA: So as I'm sure you're aware, life expectancy has, we've experienced a decline in life expectancy over the last few years. Since 2014, life expectancy declined 2 out of 3 years through 2017, and from 2017 to 2018, though, we saw a slight increase, so it appears that that trend is reversed.

Q: Do we know what causes of death contributed to this increase in life expectancy?

RA: Yeah we do - we did an analysis of the causes of death that contributed to that change and the main causes that are contributing to the increase in life expectancy are declines in cancer mortality and declines in unintentional injuries and in most instances that involves drug overdoses – so a slight decline in the rate for drug overdose.

Q: How much of that impact you think was due to the decline in drug overdoses?

RA: It probably accounts for about 15% of the decline - it's not a whole lot.

Q: Can you talk about which drugs we're making progress on as far as overdose deaths and which are now emerging as the biggest threat to the country?

RA: So, between 2017-2018 in particular we saw declines in the natural and semi synthetic opioids which are drugs that are commonly available by prescription - like oxycodone and hydrocodone. We saw declines in methadone overdose. And we also saw declines, a slight decline, in overdose deaths due to heroin. But the synthetic opioids, other than methadone, seem to be a continuing problem - the overdose death rate for the synthetic opioids other than methadone continued to increase from 2017 to 2018.

Q: So just to be clear - these synthetic opioids we're talking about are fentanyl?

RA: Fentanyl and tramadol – a very large proportion of those deaths involve fentanyl.

Q: Now, pivoting to maternal mortality. With maternal mortality there's a whole back story - can you share that with us?

RA: Yeah, it's sort of a long and involved process that we've gone through over the last decade and a half or so. So in the past, as we've collected data on maternal deaths - and here we're talking about years prior to 2003 in particular - research had shown that we tended to underestimate maternal deaths. And so in order to address that issue, we felt that adding a checkbox item to the death certificate asking whether the decedent was pregnant or recently pregnant was a good idea. And so we revised our standard death certificate - this is the standard that the states use to base their own state death certificates on - we revised that to include this checkbox item. So that was implemented in 2003 but only in a few states. Unfortunately, not all states implemented at the same time and so over the next, well, decade and a half - a little bit more than that actually - we had states implementing gradually this checkbox item and as a result that we saw increases in maternal mortality. And it got to the point that in 2007, we decided that we couldn't adequately interpret what was going on and so we stopped reporting maternal mortality altogether, waiting for all of the states to get onto the standard certificate at which point we planned to resume. So the final state implemented the checkbox item in mid-year 2017, so 2018 is the first data year for which we have data from all states that is based on that checkbox. So we decided we needed to do an evaluation though, of the data because research post 2003 showed that there were some problems with the checkbox - some errors that were evident. And so we did this evaluation and we found indeed there were some problems and so we had to come up with a new method to code maternal mortality that would mitigate those errors. So with the 2018 data we're now releasing a figure that we believe reasonably represents the risk of maternal mortality in the United States.

RA: We're releasing data for 2018 and it's based on this new coding method. We will be releasing some data for previous years as well, coded in multiple ways. Our goal is to make the data as transparent as possible so that the researchers can see what we did and what went into the new coding method and, you know, what went into the statistics that we're releasing. But also, you know, if they choose to make some different decisions in their research they would be able to do that as well - they'll be able to count them however they like.

Q: So how many maternal deaths are we seeing in the U.S. according to 2018 data?

RA: In 2018, we found 658 maternal deaths for the United States - it's a rate of 17.4 deaths for every 100,000 live births.

Q: Can we say that the maternal mortality deaths and the maternal mortality rate increased over time?

RA: Well, we can't really say that with any sort of certainty. We do know that the increases that we've seen compared to the older data that we released, the increases that we've seen are largely - mostly even - due to implementation of the checkbox. They don't appear to be real increases.

RA: We did an analysis based on 2015 and 2016 data. The purpose of that particular analysis was to look at the effect of the checkbox on maternal mortality and what we found was that there was a dramatic increase in the number of maternal deaths detected as a result of using the checkbox. And we also found that that increased very dramatically by age, so at the older ages, the checkbox increased the number of maternal deaths detected by quite a lot

Q: So the checkbox you feel then is giving a clearer picture of what the scope of the problem is?

RA: I wish I could say that was the case - we feel like it is definitely allowing us to detect maternal deaths that we weren't able to detect before. That said, we know that there are some errors in the checkbox and we're not entirely sure why these errors are occurring. This is something that we're going to be exploring over the course of the next year. We're trying to sort that out so we can actually correct it. But the effect of these errors on the checkbox is that we are finding deaths to women who were not pregnant but for whom that the checkbox was checked that they were pregnant. And some of these women are quite old actually - beyond reproductive age.

Q: So when did you start uncovering those problems along this process?

RA: Well, we didn't actually discover this. There were some states that were doing their own research on this – the state of Texas, for example, did some important research and they found errors. CDC's Division of Reproductive Health did some work with four states recently, that they recently published, that showed that this was the case as well. And so we were really taking the results of that research, along with our own evaluation, to determine what was going on.

Q: What else have you found - are there any geographic patterns that suggest maternal deaths are more prevalent in certain parts of the country?

RA: Well, we can't really say much about maternal mortality by state or by region. Unfortunately, we really don't understand very well the variation in data quality from state to state and in addition you're talking about 658 deaths in a year spread over 50 states. The numbers get quite small and it's difficult to make judgments based on small numbers - the death rates, mortality rates, get to be very unstable with small numbers.

Q: So some have been saying or arguing that the problem has been getting worse over time, that even now we don't have a complete picture. What would you say to that?

RA: Well, I would agree that we don't have a complete picture. The evidence that we're seeing suggests that the problem isn't really getting worse, but it doesn't appear to be getting better either. And that's, uh, that's something to be concerned about. We have data from maternal mortality back to 1915 and we saw substantial declines - they're really dramatic declines, we've seen dramatic decline since then and in recent decades the rate has been rather flat in comparison.

Q: So one of these new reports looks at a 20 year period prior to the 2018 data. Could you talk about that?

RA: Sure. As part of our evaluation we did this initial study based on the 2015 and 2016 data to get a sense of the impact of the checkbox and that was based on actual data that we had, we recoded not using the checkbox and then compared it to what we had with the checkbox. This other study was a little more involved and involves some statistical modeling, and so what we wanted to do with that study was to get a sense for what things would have looked like had all of the states implemented in 2003. So that was the goal and so we have this trend based on these statistical modeling procedures that shows a fairly stable trend .

Q: The second report was more focused on the years 2015 and 2016 - can you talk about that work?

RA: Sure. Yeah, the report based on the data years 2015 and 2016 is really an evaluation of the effect of the checkbox. And those years were chosen because those were years for which we had data coded without the checkbox. So we took these data, assuming no checkbox existed, and then we compared that with the data that we had that included the checkbox to get a sense for, to evaluate the effect of the checkbox on the maternal mortality.

Q: Looking forward, are there any more initiatives underway in terms of improving this whole process and the quality of the data?

RA: Yeah, there's a lot of, a lot more work to do, really. I mean, we have to understand better why these errors are occurring in the checkbox. It may have something to do with electronic registration systems in the way they're configured. We're not really sure, but what we really need to understand if we're going to correct these errors - we really need to understand why they are occurring and so that's something that we'll be working on over the course of the next year. In addition, we need to work with states and our plan is to do this, to work with states to investigate deaths to women of reproductive age to determine if a pregnancy or recent pregnancy was a factor in their death and this is this can be done using some data linkage to look in birth records and fetal death records for evidence of a pregnancy. I think we can glean a lot of information if we just, you know, take the time and effort to go and look and see. What we have to do is, we have to work with the states to do this because they are the keeper of those records. They're the ones that will have to do it and if we can support them in those efforts then hopefully we can get information that will feed back into the vital statistics system and provide us with better data in the future.

Q: Robert Anderson thank you for joining us.