**Episode 67: Maternal Mortality – Part 3**

Dr. Joe Chappelle: Hello everyone and welcome back. I’m Joe Chappelle and you’re listening to Episode 67 of the OB/GYN Podcast. Today, I am lucky enough to have Dr. Heather Link back. She’s an MFM and currently a consultant with the WHO on maternal mortality. Welcome back, Heather.

Dr. Heather Link: Thank you so much. Happy to be here.

Dr. Joe Chappelle: And so, I thought about Heather for this episode because it’s going to be about maternal mortality and I couldn’t think of a better person to have on to talk about it. The impetus for this discussion today is a paper that is published ahead of print in the Green Journal called *Racial Inequities in Preventable Pregnancy-Related Deaths in Louisiana, 2011–2016*. It is a retrospective review of the Louisiana pregnancy-associated mortality review. There’s a lot of reviews going on there. And based off the Louisiana Commission on Perinatal Care and Prevention of Infant Mortality. In any case, like a lot of parts of the country, Louisiana saw that they were having a spike in maternal mortality and they wanted to get to the bottom of it. And so, they looked at five years of data and their big thing is they want to know what is the actual rate of maternal mortality? That’d be nice to know. And second, how many of these are preventable and what are the correlating factors with these deaths to see where do we change policy or where do we put our resources in to try to change this, because obviously we don’t want women dying during childbirth.

Now, before I get into the data that they present here, I want to kick it over to Heather for a minute and talk about maternal mortality in general, because you and I have talked about it before. And I suppose 2011 to 2016, this is when you started getting interested in it. Can you do any background on this Louisiana data at all or where this was coming from in the nation at the time?

Dr. Heather Link: Sure. The U.S. has been in the news a lot recently in the last couple of years because we are one of the only high-income countries in the world that has a rising maternal mortality. And especially around this time was where we really started to notice an uptick. I think it’s important to note that the data is… It takes time to gather, it’s hard to collect, and so it’s generally a few years old. And so, I think the fact that we’re seeing 2016 data published now is pretty right. It’s hard to get anything earlier than that, it’s going to take a few more years. But right around this time, 2010 onward, the U.S., as they were collating their data was noticing that their numbers seemed to be going up. And as they address in the paper, these national trends were really what prompted them to buckle down as a committee and over nine months they really hammered out the previous five years of data so that it was something that they could do and produce as up to date a report as possible.

Dr. Joe Chappelle: I think to your point, the way that this study was done… And to be clear, this was a study that was funded by Louisiana for Louisiana. And now they’re publishing the results, but publishing the results was not the ultimate goal of this paper, they’re just doing it for the rest of us to see what they did. But in order to do this, they got two generalists, four MFMs, an L&D nurse and a forensic pathologist to go through every single maternal mortality in those five years. So, you can imagine the amount of work that it would take to go through all of those charts. And we’ll talk about how many they went through in a second, but I’ve reviewed a few cases for legal stuff, and you get a stack of… like two reams of paper, 50% of which is garbage and it takes hours to go through this and find the relevant things out of it. And so, I think the amount of work that goes into a study like this, even though it’s only going to end up being something like 60 patients, it’s a ton of work to do that. And I don’t want to understate how much work it is to do it.

So, what did they do? Like I said, they had 187 maternal deaths that were identified by ICD-10 codes and the first thing to do is they went kind of cursory through them to make sure that they were actually obstetric related. And interestingly, 128 either had no documentation of pregnancy– Actually, 128 had no documentation of pregnancy and 8 of them were greater than 42 days after delivery. And I want to stop right there for a second, because that greater than 42 days, that is… I guess I’ll call it arbitrary, and I think other people have used different definitions. And, with your work at the WHO I want to know where does that 42-day thing come from and what is everyone else using?

Dr. Heather Link: The 42-day thing is pretty interesting in the sense that it is more of a historical marker. I’ve done some looking into this, I’ve talked to people around the WHO and people in general and the thought is this is more going way back, like Judeo-Christian beliefs about the timing after a pregnancy before a woman is fully recovered. And so, that got propagated forward into what’s considered our “modern-ish” – and I put that in quotes – postpartum period. As women’s health providers, I think we all know that 42 days is generally not enough time to bounce right back. But the actual hard science behind 42 days is very limited. It’s more of a tradition based on longer practices. But while there has been a lot of impetus and momentum to talk about expanding that, changing that definition beyond 42 days becomes incredibly political. Because, obviously, as this paper showed, even just a small bit, if you had it past 42 days, you would’ve had 8 more maternal deaths. And because maternal mortality is such a marker for the reflection of a country’s health system and it’s an important marker around the world that people want to address and hit, if all of the sudden in 2020 you decide that the postpartum period is 12 months, you’re going to have a lot more deaths. It’s going to totally throw off someone’s numbers and that’s not necessarily where people want that to go. I think, obviously to us, it’s like well, these women are dying anyways. It’s not like you’re preventing the death, you’re just not counting it using the current system.

And there are different definitions that are used to capture those late maternal deaths. In this case, just for semantics, the paper describes these as pregnancy-related deaths, but they actually use the WHO definition of maternal mortality, which is a death of a woman in pregnancy or after pregnancy up to 42 days from any cause by the pregnancy aggravated, but not including accidental or incidental causes. The WHO definition of pregnancy-related death, so separate, – there’s maternal mortality or pregnancy-related – includes accidental or incidental causes. Things like death in a traffic accident, being killed by your partner… So, for those of us who are into the definitions, it’s a little interesting that they chose to call it pregnancy-related but it’s actually maternal mortality and not consistent with how the rest of the world labels things as pregnancy-related, but I don't know that it’s that important for our listeners here other than to know it has this 42 day timeline and they do adhere to… because they’re following the WHO, it doesn’t include accidental or incidental deaths. And so, a woman who is killed by her domestic partner five weeks postpartum because of whatever reason was going on, wouldn’t be captured here. Someone who died in a car accident wouldn’t be captured here.

Dr. Joe Chappelle: I think it’s very important. Definitions matter and words matter. I didn’t know that there were two different definitions, maternal mortality versus pregnancy-related. So, it’s kind of disappointing that they chose… I’m sure they didn’t do it on purpose. But they kind of mixed those two things together here in their paper.

Dr. Heather Link: They’re following the CDC, which, for their own reasons, chooses to use a different definition system, slightly tweaked than what the rest of the world uses.

Dr. Joe Chappelle: Gotcha. Well, we all know the CDC in America is not political at all, so I’m sure that’s not the reason.

Dr. Heather Link: Exactly.

Dr. Joe Chappelle: Anecdotally, I was actually, just before we were recording tonight, I read a CNN article about a woman who… The story is that she was in the ER for several hours, she got fed up with waiting, she went there for shortness of breath and chest pain and then she left to go to an urgent care because she was tired of waiting, and then she died in the parking lot. Which is very, very sad, and the story is about that, but if you read to the bottom of the article, what is was is she delivered in March, had peripartum cardiomyopathy, and so she went to the ER with chest pain and shortness of breath, and either they didn’t know that or they didn’t put it together, and so she died of cardiac failure from the cardiomyopathy that was caused by pregnancy nine months ago. And so, that woman would not have been counted in this. And I do think there’s evolving body of literature about the long-term risks of preeclampsia and cardiomyopathy in pregnancy and cardiac disease, and we are not doing a good job with following these women afterwards. We can come back to that at the end because I think it goes into maybe some differences. But it’s just interesting that I read that right before we were recording tonight.

Dr. Heather Link: Yeah.

Dr. Joe Chappelle: Before we started recording, we were talking about, so there are 187 maternal deaths that were recorded in Louisiana and yet only 59 of them were actually considered pregnancy-related. And that’s a huge difference. And so, I’ll let Heather rant for a second, because she was talking about it beforehand.

Dr. Heather Link: Yeah. My rant stems from the fact that part of the way they found these cases was using what’s called ICD10 O codes and O codes stand for obstetric. So, in the name of the code, in the text of the code it says pregnant woman or during the pregnancy or postpartum. You can’t necessarily be… You can’t have an O code and somehow not have it related to your pregnancy. And so, it just blew my mind a little bit that so many O coded deaths ended up being incorrect. There are other ways to find deaths if you’re looking for them. You can link birth certificates to deaths certificates, to fetal death certificates if your states has them, there’s ways. And I think they did this as well to try to really make sure that you’re catching everyone and spreading a wide net. And we’ve seen in the news recently that there’s been some thought that perhaps some of the increase in what’s being reported as maternal mortality in the U.S. is perhaps due to a bit of misclassification, that the states are rolling out these new death certificates and everything is online, it’s a lot easier to accidentally check that someone’s pregnant. And then, when you go back and do your full inquiry you find that oh, no, someone just clicked the wrong box. And I was expecting that, so I was a little surprised when I saw the O codes just because they are so specific to pregnancy. And as someone who spends a lot of time dealing with O codes, it was just a little rant inducing that that’s all potentially wrong.

Dr. Joe Chappelle: There’s a famous saying about data or databases, garbage in, garbage out. And from personal experience, our birth certificates are generally filled out by medical students in our hospital. They do the delivery, they do the birth certificate, and no one makes sure they did it right. And so, who knows how much data in there is not correct. And that’s all being fed up through New York State and to the New York State database. Now, maybe I shouldn’t have said that on this podcast, but honestly, that’s how it happens. And we’re actually working right now to see if we can figure out a better way of doing it. Now, New York City has an electronic system that actually pulls right out of the electronic medical records, so you’re not sitting there paging through someone’s prenatal record trying to find the information you need. But the rest of New York State does not have that. But again, as you were saying, when you go electronic, there are other issues that come into play, so it’s not necessarily a panacea either. But it was pretty impressive to me that only 59 out of 187 were actually pregnancy-related. Although, we’ll say there were 8 that were greater than 42 days. At least they had been pregnant at some time, so we’ll give them that, I suppose.

Now, for the rest of the data in this, I want to point out that there were only 59 deaths, okay? I don’t mean that that way. 59 is still 59 too many. But when you start looking at the analysis of this, if you were any other paper and you had an N of 59, you would not really say much about that data, right? So, the N in this paper is really only 59. And I think that’s important when we start trying to draw conclusions out of this and trying to apply it to the rest of the country. I do think a national database would be more helpful. Although, there are regional differences, so it is important that each region does their own thing. I just… 59 in isolation is hard to draw strong conclusions from.

In any case… 52% of the births were women aged 25 to 34 and they had 55% of the deaths, so essentially it kind of goes along. 10% of the births were women greater than age 35 and they had 28% of the deaths, so you can see that age there is a factor. None of us are surprised by this. With increasing age comes increasing obesity, medical problems, cardiac issues, whatever else it may be. And so, it’s not surprising that they have a higher rate of death. 37% of the population was Black and 70% of the deaths were in Black women. So, obviously that is a mismatch there. We’ll come back to that in a few minutes. 63% had Medicaid and 62% of the deaths were in people with Medicaid. So again, that kind of goes… at least the numbers there are relatively similar, so it doesn’t seem like Medicaid itself is a risk factor. 32% of the deaths happened antepartum and 45% happened postpartum, and I’m guessing the rest there are during delivery, peripartum. Now… go ahead.

Dr. Heather Link: I actually looked this up because it was something that I wasn’t clear on. They used the term delayed postpartum, but they didn’t define it. And I was just a little curious because I know in my own literature, the majority of deaths happen within the immediate 24 hours postpartum, so I was… such a large percentage later than that. And so, I went back to the original report, the committee… the MMRC report. An immediate postpartum death was anything less than 24 hours after delivery. Intrapartum and immediate postpartum refers to that. Delayed postpartum would be anyone greater than 24 hours.

Dr. Joe Chappelle: Okay. I was going to stop there anyway after going through the topline numbers and ask if you had any thoughts on those, anything that sticks out to you?

Dr. Heather Link: Part of the reason the delayed postpartum interested me is because when you look at the rest of the world, their deaths typically happen intrapartum and within a few hours of delivery. And so, I think some of that is very much a reflection of the healthcare system that we have here and the access to resources that we have that in general… without knowing the details of all these individual cases, but I have to… my gut says a lot of these women went to the ICU, got a lot of potentially heroic care that took more than 24 hours to get before they eventually succumbed. That’s not available everywhere. And numbers being numbers, the majority of women in the world are dying in low income countries and they’re dying quickly. And so, I saw that very much as a reflection of our situation here and typical probably more among high income countries. I think the rest of the data you presented was very similar to what we would expect and then…

I guess the only other thing is, as they looked at the characteristics and the years that… the numbers per year, they definitely saw… In 2011, they had 2 maternal deaths, but in 2016 they had 14. And so, as the committee was really ramping up and as word was getting out and they were working to really establish things– reestablish things, because there had been a committee in Louisiana before. I think you saw a better collection of information. And these are of the true cases, not the 128. So, I’m not concerned that the difference is not women who weren’t actually pregnant.

Dr. Joe Chappelle: Sure. I mean, if you… We’ll put links to all these PDFs. But if you look at the per year, in 2011, the rate was 3.3 per 100,000 and then it kind of plateaued for ’12 through ’15, 11.2, 11.1, 12.5, a little uptick, 13.9 in 2015 and then a huge jump in 2016 to 22.2. Now, of course we don’t know if that was a blip or if that’s continuing after, because we don’t have that data. But although it looks like they increased quite a bit over the course of the five years, there was a four-year period in the middle where it was pretty flat. And again, you have to trust the data that we’re getting out of this so, I don't know, take it with a grain of salt, I suppose.

So then… I’m going to come back actually, to the mortality rate at the end of this, I think, because it goes into a broader discussion. But you had mentioned the causes of death, and I think that’s an important thing to look at, because it’s going to differ between developed countries and underdeveloped countries. And I’ll let you talk about that in a second. But for this population, 17% died of a hemorrhage, 17% died of cardiomyopathy, which I thought was actually… I mean it’s a pretty decent rate of cardiomyopathy. And 15% died of heart disease. And then there’s other, VTE and other things. I’m going to guess though that, in developing countries, that’s going to look different as far as the cause of death.

Dr. Heather Link: Yeah.

Dr. Joe Chappelle: More hemorrhage? Is that what it is?

Dr. Heather Link: Right. If you were to look at the most recent estimates looking at global maternal causes of death, approximately 28% come from hemorrhage, 14% come from hypertensive disorders, about 11% from sepsis and I want to say like 9 or 10%, somewhere around there, is unsafe abortion. And those are what we would consider to be direct obstetric causes. And then, in that pie graph there’s also a piece of pie which is what is considered indirect obstetric causes. And that’s where a lot of your cardiac diseases would fall into, although peripartum cardiomyopathy is different, but if you have cardiovascular disease going into a pregnancy, for the sake of classification, you would be lumped into what’s called an indirect cause.

So, yes. In the rest of the world, especially low and middle income countries – although middle income countries are starting to go through a transition – the majority of deaths that occur, occur from direct causes, and so those are your hemorrhage, your eclampsia, your sepsis and unsafe abortion. Add those all together, they’re two thirds of your piece of the pie, with things like amniotic fluid embolism, peripartum cardiomyopathy, stuff like that. Indirect causes of death would be stuff like heart disease, that would be HIV/AIDS, that would be malaria, cancer, liver disease, those would all kind of fall into that.

High income countries tend to have a different distribution. Hemorrhage is still one of the leading causes of death, and I think that that’s something that really breaks my heart a little bit, because we have blood banks, we have anesthesia, we can put in central lines and it’s… those deaths are really hard when you think about those women dying in our hospitals today with all the resources that we have to work on that. I wasn’t as surprised by the burden of cardiovascular. The cardiomyopathy a little bit. Not so much that that’s contribution to death but just the higher numbers that that reflects happening.

Dr. Joe Chappelle: Yeah. To kind of round out some of those numbers, 9% of the deaths were embolism, 9% were amniotic fluid embolisms, which is also… it means 4 deaths in the 5 years, so I guess that’s probably a decent, regular number. It doesn’t happen that often, but when it does, it’s memorable. 6% for preeclampsia and eclampsia, 6% for cerebrovascular accident, and then – one of my favorite categories here – is conditions unique to pregnancy. So, I actually wondered what the heck that means, and here are some examples from this Louisiana data: gestational diabetes, hyperemesis and liver disease of pregnancy. So, I’m not really sure how you die for hyperemesis or gestational diabetes. I guess if you have DKA, I suppose you could die from that. And liver disease of pregnancy, that’s such a broad, vague category, I’d be very interested to see those deaths to see what happened there. It sounds a little fishy.

Dr. Heather Link: My guess is that liver disease of pregnancy is probably referring to obstetric code O26.6, which was created to cover acute fatty liver of pregnancy developing outside of a preeclampsia setting.

Dr. Joe Chappelle: Okay. That can kill you, so that could be it. Okay. And only 2 out of the 59 were for infection. So again, when you’re talking about what is preventable, I guess we can skip ahead into that now and what is preventable. Things like hemorrhage, to a degree embolism, preeclampsia, eclampsia, infection, these things should be preventable for the vast majority. I mean, every once in a while… I like to say… We’re part of this Safe Mother Initiative here at Stony Brook, listeners have heard me rant about it from time to time. But one of the things they worry about is stroke related to preeclampsia, and I like to say we have had one stroke in the eleven – no, more than that – years I’ve been at Stony Brook, and she stroked at home before she came in. And so, there are going to be patients who do that, who’re going to stroke or whatever outside of the hospital. So, there are some, even though they’re kind of in these categories we would think would be preventable, aren’t necessarily.

So, when they looked at this, they found that 45% of all of these were preventable. I mean, that’s a pretty big number. I know I said earlier that it’s only 60 patients, so let’s remember that. But if 30 of them were preventable, that’s 30 women who would still be alive. And that’s only in one state. And that’s 5 years, or 6 years, so that’s a decent number per year of women who would still be alive. And I don’t have to go into what the impact that has to a family and a community when that happens, but it’s huge. So, that kind of blew me away, that it was that high. Is that numbers that you’ve seen before or is that new to you?

Dr. Heather Link: Not every state report puts out the preventable or not and so, I’d looked up New York State’s before this, their most recent report, and their preventable numbers were high but they had a very high percentage of deaths that they decided they could not assess whether they were preventable or not preventable, and so, that did not feel to me like… Perhaps the best way to judge if half of your population, you can’t even make a decision on or not. I think that the authors here really… you know, only 2 out of this cohort were they able to say whether or not this death could have been prevented. So, I think they really gave it a good try and that’s… It was surprising to see, but also around the line with national literature is we do kind of… It was surprising to see because it’s right in front of your face, but we do see that we think probably half of all maternal deaths in the U.S. are preventable. So, it does fall in line with that.

Dr. Joe Chappelle: I think you raise an important point there, maybe obliquely. It’s that it’s very subjective. There are 6 docs, a pathologist and an RN looking at this, so you’re assuming there’s some kind of consensus when they decide if it’s preventable or not preventable, but maybe not. But they’re still applying their own clinical judgement on a case that all they can do is read the chart and they weren’t there. And as anyone who has been involved in a root cause analysis or basically looking back at a bad case, there’s a difference between just reading the chart and being there as far as what actually happened. On both sides of it, by the way. Sometimes being there puts blinders on and then you can’t really objectively look at the case. But not being there makes it difficult. So again, we’ll take that with a grain of salt. But it was still a pretty high number.

Now, I think where this starts to get more interesting to me, is they looked at the Black versus White cases that were preventable. I already told you that 70% of these cases were in Black women, so that’s a lot. And they thought 59% of those were preventable. Then, for the 30% that happened in… it’s actually non-Black, but I’m going to say White because I don’t know what the total was, but 9% for the White they thought were preventable. That’s a big disparity there, that’s huge. And since most of these cases were happening in Black women to begin with, that means a lot of these deaths were Black women who didn’t need to die. And again, I don’t know that anyone’s going to be surprised by this if you pay attention to medical literature. But again, when they put it right in front of your face just like that it’s a little sobering.

Dr. Heather Link: Yeah. Definitely. I think I first saw some version of this data presented at ACOG CLC last year by one of the authors of the paper who sits on the committee and she had a slide that referenced those numbers that a bunch of us took photos of and we’ve been waiting to see where it would come out. And it is just as disappointing and shocking to see it now as it was then and it… I’m glad that this research is out there and that this is getting attention, especially because the whole point of assessing whether something is preventable was whether there was a decision that could’ve been made– potentially made at some point that could have altered the end product of this and it really takes that quote/unquote, “blame the mother” narrative and turns it around, that something could be different there. And that’s what we're all working to do to make a better space for this.

Dr. Joe Chappelle: Absolutely. That kind of brings me to the next thing, is… Alright, so there’s a stark difference here, there’s a lot of these preventable, there’s a lot of them happening in Black women that are preventable, so… why? Why are these things happening? Because once we recognize there’s a problem, the next step is can we figure out why it’s happening? And then, if we can, can we fix that thing so that we prevent them? That would be the ultimate goal in all this, right? And reduce our maternal mortality and also just save lives. There’s a couple of theories you could throw out there, if you were just spit balling this with your friends. Well, maybe it’s where they deliver. Louisiana especially, the majority of the state is a rural state where the level of care for these small hospitals may not be the same as it is in Baton Rouge or wherever, New Orleans. And so, maybe it’s the fact that they’re delivering out in this rural hospital, those women are dying more, maybe because they don’t have the staff, or they don’t have the resources or whatever. So, they looked at this. And they found that 58% occurred at level 3 and 4 facilities. That means that 42% happened in the lower resource setting – 1 in 2 hospitals. And that, importantly, there was no difference in preventability amongst the levels of care. And so, it didn’t matter if you delivered at a tertiary care center or the regional perinatal center or the small hospital 10 miles down the road, you had the same chance of dying from a preventable issue. And I was really shocked by that. And I think that part of that is my bias in an academic center, because I think that we’re great and we do a great job. And now I have to really look at that and say, actually maybe we suck as bad as everybody else. And that was real sobering. I don't know if you’ve seen that data before. I mean, it sounds like you’ve cheated, and you’ve seen this data before, but I don't know if you’ve seen it before and if not, what did you think about it?

Dr. Heather Link: I don’t remember – not that this wasn’t part of the presentation – but that wasn’t something I remembered. I was really happy that the authors made that part of their analysis. Of the two takeaways in this paper – the fact of what percentage of deaths were preventable and then were they preventable by where they delivered – I thought that that was a really important analysis to bring and to bring to the discussion because many of us who work at tertiary care centers do like to think that we provide top notch care and that these deaths are happening elsewhere in other places and places that aren’t doing everything that they should be doing or could be doing. And it is a reminder that note that things can happen everywhere. And the three-delays model of obstetric death worldwide says, why are women dying?

This was a theory that was proposed, it was the first one worldwide, it was it takes some time to get to care or it was the delay in the decision to seek care. The second was the delay in how long it takes you to get to care. So, those are generally not issues that we have as much in the United States, although if you are in a rural area it could take you longer to get to a hospital in an emergency. But the third obstetric delay is the delay in the care you receive when you arrive at the facility. So, you’re not receiving the care that you’re supposed to. And maybe if you live in rural Sub-Saharan Africa, that means that you show up at the health facility and there’s nobody on duty. And maybe you’re there at night and the gate’s locked and the gate guy doesn’t come until the morning. But it’s a reminder to me that that plays out in the U.S. when you show up complaining of a terrible headache in one of our tertiary care facilities and maybe you don’t get the antihypertensive that you should and then you have a bad outcome. That’s the third delay. That’s what we’re experiencing here.

I know that residents that I’ve worked with have heard that come from me on L&D when I felt that we could do better and that we’re living the third delay. And so, I want us to be that tertiary care center that doesn’t have it. But I was really glad that they highlighted that, because I also think that that’s an easy thing for people to perhaps just jump to and say that, oh, this is just confounding these results. And so, I was glad that they included that, because it forces us to look a little bit inward and have those harder discussions.

Dr. Joe Chappelle: Yeah. And I think… You know, there’s a hospital that’s about an hour from where we are and it’s in a pretty rural place, I mean there are rural parts of Long Island if you believe that, but there are. Now, it’s not rural Idaho or something, but it’s further from care. In any case, I think they have 6, maybe, LDRPs and they have staffing that’s commiserate with that, there’s not big staffing. So, if you roll in there and no one knows you’re coming, there may only be a nurse or maybe two nurses that are there, because they don’t staff that all the time at such high numbers, because they don’t have the patients to fill it. And we even have that in our tertiary care center. A long time ago, about ten years ago, one of the hospitals near us closed their OB unit and overnight Stony Brook went from 3,200 deliveries to 4,000 deliveries. And we were not staffed appropriately for that. And we went through a number of years where there were days where it was not safe, because we just didn’t staff up– and you can’t just hire more nurses in a week. It takes months or years to hire them, train them, all that stuff. Now, we’re about the same delivery numbers but it’s better now, but we’re staffed appropriately. But, even now. There are days, and I’m sure in your own labor and delivery and everyone else who works in a labor and delivery knows, there are days where it’s bedlam, it’s crazy. You just don’t have enough resources to provide anything. And those are the days that I worry that somebody’s going to get missed and something’s going to happen, because there just aren’t enough eyes and monitors and everything else to do that. And so, even in a tertiary care center that can happen, especially on those five or ten days a years where it’s just absolutely bananas, no matter how good the system is. So, I do worry about that.

The next theory you might put out there is say, okay, maybe it’s not necessarily the hospitals, it’s just our healthcare system in general. Maybe a lot of these women don’t have access to Medicaid before they get pregnant, so they’re coming in with preexisting heart disease or coming in with hypertension or untreated diabetes and then they get healthcare when they’re pregnant and then something bad happened, but it’s really because of what happened beforehand because they don’t have access to healthcare. Heather actually sent me some interesting data from the UK that looked at very similar questions to this about the maternal mortality rate. And actually, I said I was going to go back to that.

So, I’m going to go back to that first and then we’ll talk about the UK. So, let me just get to this… somewhere in here I have it. It’s basically the relative risk here. So, the pregnancy-related death – or really, maternal mortality in the WHO parlance – for Black women was 22.7 per 100,000 which was 4.1 times the rate for non-Hispanic White women, which was 5.6 per 100,000. That’s a big difference, four times the risk. And so, again, you might argue that maybe it’s the healthcare system issue. And then I’ll let Heather talk to us about the UK data and why maybe that’s not the case or maybe it is.

Dr. Heather Link: Yeah. Interesting thing about the UK data, and anyone can look up the results, is the confidential inquiry system MBRRACE is how they put the reports out. It’s a really great system in terms of how they collect, how they analyze… I like their clinical vignettes that they provide, where they give examples of a situation throughout the document intext. I know that’s something that when you have a smaller number of deaths you can’t do as much because you run into confidentiality issues, and so a lot of smaller reports can’t, but that’s something that larger ones can. And so, if people get an opportunity, I encourage them to look at that. But I took an opportunity to pull up their recent UK report and look at their numbers – and I’m just pulling the table up on my computer here – and they also look at their maternal mortality by ethnic group. For their group of non-Hispanic White women, their rate per 100,000 live births was about 6.6 and then for their category of Black women it was 28 per 100,000. The ratio itself is similar, it’s not changing in that. We’re seeing the same number increase across that… One of the things that I appreciate about how we look at this in the U.S., while our numbers are unacceptable, we’re having this conversation. Not to say that the UK’s not, but it certainly wasn’t part of the report where it was discussed, and I haven’t seen it coming out of a lot of their other literature, although I could’ve missed it. But I appreciate the fact that we highlight this, we’re working on this and we’re talking about it. We’re not just saying, “oh, it’s higher,” and moving on. But the ratio’s the same.

Dr. Joe Chappelle: So, the UK health system, famously, is much different. It is… you can argue whether it’s better or not, but in a lot of ways it is, and it’s at least more equal, where everyone has access to it. And yet, their rate for racial disparities was exactly the same. Not to say that the access to healthcare isn’t part of the problem in the United States. I don’t think that anyone can argue that having access to preventative healthcare doesn’t make your health better. So, I think that’s something that we should work on in the U.S. But it didn’t really seem to make a difference in the UK. And again, it’s apples to oranges a little bit, so I don’t want to make a strong comparison there, but it does kind of poke a hole a little bit in the theory.

And so, the last thing I want to add to this is, is there a physiologic difference in Black women versus White women? And maybe, I’m talking about risk of cardiac disease or progression of cardiac disease with preeclampsia. And this is data I have not seen before, but when you start throwing out ideas, you have to start including things that maybe don’t necessarily are things that make sense to you off the top of your head. And also, now it sounds racially charged that maybe Black women are different than White women, but we already know there are differences in rates of diabetes, gestational diabetes, rates of preeclampsia. So, maybe there is something there. Now, it’s not going to explain all of the deaths, and it certainly doesn’t explain the preventable deaths. But I think we have to bring that up as well and say that maybe there is some kind of difference as far as the risk to things that happened in your pregnancy or during pregnancy that put you at a higher risk for death. I don't know. I don’t have anything to say about that, but I’m just throwing ideas against the wall and seeing what sticks.

Dr. Heather Link: I have seen some data that suggests that there is a higher risk of peripartum cardiomyopathy in women of African descent. And some of that is coming out of Nigeria specifically, where I’ve seen some studies that quote rates almost of 1% of peripartum cardiomyopathy. I have… And that can be found in more general sources, up to date or larger papers. I’ve done a little bit of digging into that myself to try to see what their sources were, and the quality of that data isn’t great. It’s hard to get really good data, and there are some different social and ethnic customs surrounding birth, such as not moving for weeks and eating a lot of salt, that perhaps predisposes to some of that, and so I think it’s hard to tease out. But that is something that people are looking at, because there’s at least some surface-level data that says perhaps some of these conditions do have at least evidence… that are occurring at higher percentages in women from certain backgrounds.

One of the things that the state report that this paper was based on went into when they looked at their top contributing factors to preventable deaths was that they felt like of the 47 of the deaths, 36% of the ones that were preventable were preventable because of failure to screen or inadequate assessment of risk. And so, that is coming back to us in our third-delay model here, as the providers. And that was by far the highest reason. The next most common one was 13%, the lack of standard policies and procedures. 11% for lack of referral or consultation and 11% for poor communication. It doesn’t go as much into that in the paper that we posted, but if you look back at the review committee report, they dive a little deeper, and that’s something that really jumped out at me.

Dr. Joe Chappelle: Absolutely. We actually… Again, we’re part of the SMI, and so we’ve been doing these projects on hemorrhage, and part of that is doing admission risk scoring, prebirth risk scoring, postpartum risk scoring… And so I dug down into some of our data, and interestingly, I won’t go into all of it but we found that the postpartum risk scoring was almost useless, the prebirth in and of itself wasn’t very useful, the admission was and then… and again, this is not hard data yet because I have more data to do. But interestingly, if you are outscored in your risk from admission to prebirth, that was actually a very good indication that you were at risk for hemorrhage, and so that was interesting. But in any case, what came up in this conversation about our risk scoring was, okay, if someone scores a moderate or a higher risk for hemorrhage, what do we do different? Are we putting a second IV in? Are we crossing them for blood? Although at our hospital it’s like a five-minute delay to cross for blood, so it’s not that big of a difference but… Are we putting a sign of the door that says they’re at risk– Like, what are we doing to help us prevent that lady from having a hemorrhage or managing it better once it happens? And the answer was, I don't know. And so, screening is so important, but the next step of screening is doing something with that information. That’s what I’ve hammering in at our institution, it’s okay, we have all these assessments in place for VTE, for all that stuff, but make sure we have something actionable to do with that information, otherwise it’s just noise. It’s like in the ICU, when there’s 15 different alarms going off and you just start to ignore them. I do think that screening or failure to screen is definitely important, but we just need to make sure there’s a whole process in place.

And I think the last thing this brings me back to is… back to the anecdote I started with earlier, with the lady with the cardiomyopathy – and this isn’t captured in this necessarily, although maybe it is in a roundabout way. It’s there are long term consequences to a lot of these things that happen in pregnancy, whether it be hemorrhage or cardiomyopathy, preeclampsia… And they could affect– you know, this pregnancy you could die within 12 months, so that wasn’t captured here or put you at risk for dying in the next pregnancy. And one of the things we do poorly in this country, besides just having access to care, is we don’t follow our pregnant women up after these things.

So, one thing we’re working on here at Stony Brook is if you have preeclampsia, you should be seeing at least a primary care doctor later within the first six months and a year and 18 months, to do an EKG to make sure you have no signs or symptoms of shortness of breath or chest pain or whatever it is. Because there is data that preeclampsia, eclampsia, leads to long term cardiac risk, and yet we’re not doing anything with that. Women with diabetes, 50% of them don’t get a two-hour GTT at 6 weeks, loss to follow up. So, we’re missing out on all these opportunities to affect the next pregnancy. And again, even if it’s not causing death in that index, we don’t know the parity of all these women, so this could’ve been their second or third or fourth pregnancy. And we are failing as an institution – a healthcare institution but also personally – we’re failing when we see them at six weeks and we say, you had preeclampsia, pressure’s fine, alright, see you for the next pregnancy. We’re failing those women. And we’re setting them up for a problem in the next pregnancy. That’s been really weighing on me for the last few months, and here at Stony Brook, we’re trying to figure out what to do about that but it’s not easy to do, because we’re not primary care doctors. So, how do we arrange that for them and also make sure they have healthcare in order to be able to have access to do that? I don't know if you’ve seen that come up in other circles or where you’re at with that, Heather.

Dr. Heather Link: ACOG has a big push this year in the bills that they’re trying to get through Congress, and they’ve got like three or four of them and they’re calling a Momnibus, which is a cute little pun on words.

Dr. Joe Chappelle: I like it.

Dr. Heather Link: But one of them is to push for expanding the postpartum coverage period up to the first year. There’s a lot of intricacies that go into this, you have to make sure that providers can still get paid for those visits, but that women have coverage. And I think that expanding access in that way, and hopefully taking away any barriers that prevent them from getting into the PCP’s office at 9 months or anywhere else can be helpful in moving towards that. I’m glad that ACOG’s taking that up and excited to see where that can go.

Dr. Joe Chappelle: I believe in New York State they’ve already done that, and they have up to a year, which is great. However, it’s only up to a year. And listen, I know that the world… we advance in this world by baby steps. It is very rare that we have a giant step forward, and when we do, then the next party that comes in tries to take it all back anyway. And so, for everyone out there who wants to change the world overnight, that just so rarely happens, at least in positive ways. So, I’m fine with baby steps, but one year is not sufficient, because really, we’re not getting into these downstream effects until maybe three, four, five years later. So, I don't know. Call me a pessimist, I suppose. One year is better than nothing, but it really should be– we should be…

I’ve been going on this kick recently – and maybe this is the wrong podcast to talk about it – about how to make a baby step in the right direction for our healthcare system. I personally don’t believe that Medicare for are or all these other things – although they sound great – I don’t think they’re probably going to happen because of our political environment. I also think that if they do happen, the next party that comes in will take it all back again, like they did with Obamacare. But I think we probably should be all be able to rally around is preventative care. Preventative care access to everybody doesn’t cost a ton of money and if you identify issues before they– and you can still have private insurance to take care of the issues when you have them. But if everyone just gets preventative care it’s got to be better. And I haven’t done the math on the cost, but I don't know, these things I’m kicking around. I think we need to tackle this form a different direction. Cardiac caths cost a lot of money, doing a cholesterol screen once a year or a blood pressure check or an EKG costs very little. So, I think there’s got to be a better way of doing it. I don’t have more to say than that, but I don't know.

Anyway, to wrap this study up, maternal mortality is a hard thing to measure. As this study shows, in order to do a decent job, it takes a lot, a lot of work. We can’t trust the data that comes in electronically. I mean, Texas showed this, Louisiana showed this, I’m sure if we did it in New York we’d probably find the same problem. And so, I think it’s… we talked about, last time I think, we had talked about how do we improve maternal mortality in the U.S. and one of the things was better data, and that requires money, resources, smart people setting up programs, going state by state, going hospital by hospital and showing us how to do things. As you said, assessment or systems issues, those things have been solved. They’ve been solved in other hospitals. And I guess every hospital’s different, every environment and culture is different, but it’s already been done. And so, we need to export those systems and those processes to other people. And then, I think that the preventability and the disparities in race, although not necessarily new, the degree was just huge. And to me, this is really a call to action that… every six months I read one of these papers and I get reinvigorated about how many of these women are dying unnecessarily. And although childbirth is a dangerous thing, and we forget that sometimes in developed worlds that people die of childbirth if you don’t see it all the time. It is inherently dangerous, but yet it doesn’t have to be this dangerous. And that these women died – I don’t want to say no reason – but for no reason, it just makes me sad and angry. So, that’s my recap. Heather, I’ll let you have the last word.

Dr. Heather Link: I think that that was an excellent recap. The first thing that I wanted to say and didn’t get to is, I wanted to congratulate the authors on just such a well done committee report and how timely it was, and you can tell given the timelines and how much data they had to go through, how hard they worked and that they, in addition to putting it out in the state report, that they put it in the Green Journal so that it would get a different audience and we could be exposed to that. So, that was real hard and well-done work that they did there.

Dr. Joe Chappelle: Hear, hear.

Dr. Heather Link: One of the things that struck me going through this – they left some recommendations, including implicit bias training, a facility-level warning system… They talked about broadening the structure for future reviews, so their review committee didn’t have community members on it from advocacy groups, it was very OB provider heavy, very MFM heavy. As an MFM, I love that, but we can share. One of the things that I thought would be interesting to this – and I’m sure this would cost a lot of money, so in my pretend world, where nothing costs anything – I would love to see the integration of a verbal autopsy tool into this. For those who aren’t as familiar, if you’re trying to do an assessment of cause of death in an area where there isn’t a very good record-keeping system, or perhaps any record-keeping system, one of the ways to do that is to do what’s called a RAMOS study, which is like a reproductive age mortality survey of women using the sisterhood method. So, you go to every house in the town or the village and you interview everybody of reproductive age, you ask them about all their sisters and how many of them are living or not. And then that determines your estimate for how many women are dying of childbirth related things. And once you’ve established that, you do what’s called a verbal autopsy, where you go through with the family and get their perspective on what happened and what complications there were. And as you were saying before about how the record doesn’t always tell everything, I would like to know what these families thought were the barriers, what was preventable, what wasn’t preventable. And while 59 deaths is both a lot, it’s not– I don't know that that’s insurmountable to task someone to do that, to follow up with, if you are a state and you’re designing your committee. So, it was just an idea I had that I that I think would add something. I think for providers, just reminding us that it’s always important to get an autopsy so that we can figure out what the cause of death was and provide better data going forward and we can be sure, standardizing how we assess patients who are sick. And not just kind of, “oh, I think her blood pressure’s always high, so she can ride this one out,” but taking the opportunity to utilize things that can decrease your own implicit bias, especially given the data presented here. Those are my thoughts.

Dr. Joe Chappelle: Thank you. I think that that thought about having the families discuss what they think happened – I think that’s profound, and something we don’t do enough in medicine. I think a lot of that is – and one of my colleagues would tell me this all the time – that’s our medical degree talking, where we know best. And so, we don’t have to talk to anybody else about it. But there’s a lot that came out of that discussion. Not only in the actual medicine, but a lot of times also in how we convey information and how they saw things and how things were communicated. And that can make a huge difference, not only in malpractice, but also just in… There was an article today about PTSD after ectopic and miscarriage and they found that one sixth of women who experienced that had PTSD symptoms a year after, which was a lot higher – and I haven’t read the article yet, so take that – but that was much higher than I thought. I think it’s in the Green Journal. But how we communicate with families about things that happen, they carry that forward with them. If they feel like they were never listened to and they don’t know what happened and whatever, they’re going to carry that frustration and anger with them everywhere on top of the fact that their loved one died. Whereas, if it’s an open communication, we go back and talk to them, find out what happened, that does a lot to heal some wounds, at least in the trust between the medical community and the patients. So, if nothing else, I think that’s an important takeaway, not even from this paper but from Heather. I knew I invited you here for a reason.

Dr. Heather Link: Thank you so much.

Dr. Joe Chappelle: Alright. I think that was a great discussion, if I do say so myself. We’re never going to stop the world’s problems here on the podcast, but if everyone out there listens to this, reads this stuff and then thinks about what they can do in their own institutions, then we’ve done our job. So, thank you all for listening. Thank you, Dr. Link, for joining me to talk about it.

Dr. Heather Link: Thank you so much. As always, I’m happy to be part of this.

Dr. Joe Chappelle: Alright. And we’ll see you all next time.