[MUSIC PLAYING]

CLAUDIA HANSON: Hello. My name is Claudia Hanson. I'm a German obstetrician. And I became passionate about improving maternal and newborn healths already in 1983. That year, my first baby was born, and I found myself in a very little responsive health care system in Germany. And I wanted to improve it.

And then a few years later, when I was in medical school, I was invited to the Ivory Coast. And I saw so many mothers and babies dying needlessly in these poor resource settings. So since then, I want to contribute to improving maternal and newborn healths.

So my lecture today is about maternal mortality. And I will use the gapminder graph. Here you see a typical gapminder graph. And I have maternal mortality here, and the time on the horizontal axis.

What is maternal mortality? Maternal mortality is the risk of a mother to die when she is pregnant. It's the number of maternal deaths per 100,000 live births. And that's what you see here. And then I picked two countries. I picked Sweden and the United States.

And you see here, 1900, Sweden had already a very low maternal mortality ratio, whereas the United States had a quite high maternal mortality ratio. And look how this was also in the years to come. Sweden really managed well. They had a well-functioning midwifery care system. And they really provided good obstetric care to all their women. And this was not so in the United States.

But then look at 1940. Here, both of the graphs actually joined and maternal mortality reduced very, very rapidly. This was a huge and fast decline. It was a decline of 75% in 25 years, or a reduction every year of 5.5%. And this is the Millennium Development Goal. This is what we wanted to see happening in the world in the last 25 years between 1990 and today.

So look at what happened the last 25 years. In 1990, you see it's still more than half a million of mothers were dying every year in pregnancy and childbirth. In the last year, 2015, 303,000 women were dying. It's still a lot, but it's quite a substantial reduction. It's a reduction of 44%. The Millennium Development Goal set us to reduce 75%. But still, the world has done really well in reducing maternal mortality.

So let's look where mothers are dying today. These are the latest figures from WHO, published for 2015. WHO used dark colors for countries with high maternal mortality ratios and light colors for countries with low maternal mortality ratios. And that's the map.

So you see, maternal mortality is really concentrated in sub-Saharan Africa, quite a bit still in Asia, and also quite a bit still in Latin America. You see here in Africa, many countries are still struggling quite a lot. This is the place where health systems are still relatively weak. And here you see Sierra Leone, which has the highest maternal mortality ratio. It has a very weak health system and really struggles to deal with the healths of mothers and babies.

So as you see, this is the global picture. And we said we did not reduce maternal mortality by 75%. Still, we have nine countries which actually managed to reduce maternal mortality that fast. So nine countries on total. One of them is Cambodia in Southeast Asia, and another one of them is Rwanda in sub-Saharan Africa.

So let us look now why are women dying. What are the medical causes of deaths? So here you see a lot of women, a lot of mothers, are dying because of severe bleeding. Did you actually know that this famous building, Taj Mahal, was built because Princess Mahal died because of severe bleeding after giving birth?

We have also a few more causes of death, among them, for example, abortion complication, which still contribute to 8% of the total maternal mortality. That means 25,000 women are dying every year because of abortion complication, mostly because abortions are done under unsafe conditions.

And then, the maternal mortality is a bit more complicated than other diseases. We have also so-called indirect causes of maternal mortality. Indirect causes are, for example, malaria, HIV, obesity, but also the growing diabetes. Women who have these diseases are more likely to die during pregnancy because these conditions are worsened in pregnancy.

But mothers do not only die because of bleeding, not only because of the medical causes of deaths, they also die because of socioeconomic determinants. Here you see the road to death concept. A mother might start her journey in pregnancy with little money, too little education. She might live far from the nearest facility. She might have many children already at home. She might be anemic.

We call this the road to death concept. She might reach, then, a health facility with too few

providers, no drugs, too little skills. And even if she reaches for delivery care at the nearby hospital, they just might provide substandard care. So she will not only die because of bleeding, she also will die because just simply substandard care was offered and all the other things also contributing to her death.

So now we have discussed why so many women are dying, let us look also what can be done. Let us go back to the graph from gapminder. You see here, maternal mortality was reducing so fast. So why was this? One important point was that antibiotics were discovered. And with antibiotics, you can treat infections. You can treat infections after delivery, but also after having had an induced abortion. And that was at that time an important contributor to maternal mortality, as it is today.

We have heard about obstetric bleeding-- bleeding after birth. Having safe blood transfusion clearly can save a lot of lives. And then lastly, in this time, transport became more and more available. So if a mother had a severe complication, you could bring her to a hospital, which could save then her life.

Let's look now at the other factors which we need to improve and which are, in fact, really improving. Let us look at the road to survival. Women are much better educated today than they were in the past. We have a lot of economic growth even in very poor countries in Africa. Families are becoming smaller. We see this in many, many parts of the world.

Transport is becoming available. It's amazing. Even in very, very rural areas in Africa, there are motorcycles today. There are Chinese motorcycles. They have done very well of bringing them everywhere in the world. And we also see that hospital care is improving-- slowly, but constantly improving. So we are quite nicely now on the road to survival.

Now let us look at an example country, an example country which actually reduced maternal mortality by 75%. As we said, Rwanda did manage-- the country in sub-Saharan Africa. This is a slide from WHO. And here you see the maternal mortality ratio. And here you see the Millennium Development time. Here you see a modeled decline of maternal mortality. For maternal mortality, we don't have many estimates. We typically model how the decline could be.

So what did they do? What did Rwanda do to decrease maternal mortality so rapidly? One of the key things is facility delivery. This is the number of women who deliver in a facility, let it be a health center or let it be a hospital. So that is facility delivery. It was 30% just 15 years ago.

And today, it's 90%. How was this possible? How is it possible that suddenly so many more women deliver in facilities?

Rwanda has a very committed government. They really want to improve maternal health. They spend today much more money on health than they did before. They increased the staff quite a lot, foremost, midwives. And they reduced the so-called financial barriers. So they made it more easy for women to go to a health facility because the families didn't have to pay so much anymore.

Now let us look at Cambodia. Also, a very fast decline of maternal mortality. And what was there-- the same, facility delivery started with something like 25%. A few years later, it's up at 90%. And maternal mortality is down to very low figures. And the same story-- a committed government. They have invested much in a good health system development in midwifery care, in quality improvement, and the same-- removing financial barriers.

So what is now our old and what is now our new challenge? The old challenge was to get the women to deliver in the facilities. Now we see they are increasingly coming. They are much more empowered. They have much better education. The economic situation is really improving.

And also, there's much more transport available. Here you see motorcycle taxis in front of a hospital in a very rural area in sub-Saharan Africa. This is making now women really to come and to deliver in the facilities.

So what is now the new challenge? The women might come. The women might face complications. Still the same complications which they had if they delivered at home. Now we need trained staff, trained midwives. We need to help them to survive. We need more drugs. We need more skills. We will also need more facilities. Probably, the number of women-delivering facilities in the very poor countries is likely to double in the next few years.

We have to live up to these challenges that the women are coming now. So we have to provide them with good care so that they can survive. And this global challenge here will stay for with us for the next 15 years. Here, showing the gapminder graph, again. Here we have maternal mortality, again. And here, we have income per person. And here, we show with the size of these bubbles the total number of mothers still dying in these countries.

And you see, the blue bottles-- this is Africa. Still, many mothers are dying in this country

needlessly because of a maternal cause. And that is also the reason why the global average is still above 200 women dying per 100,000 live births. So what is the sustainable development goal now telling us? The sustainable development goal tells us to reduce maternal mortality to just 70 deaths per 100,000 live births.

So that means all these bubbles really need to go down. And that's quite a task. But we have seen how Rwanda and Cambodia managed to do it. We have an idea of what the road to survival can be. It is now to invest into health system. It is to invest into quality of care so that mothers and their babies can live a healthy and good life in the future.