

# Medical Conditions Linked To Maternal Deaths in Mexico

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Claudia Daut/Reuters

**M**aternal mortality is defined as the death of a woman during pregnancy, childbirth, or in the 42 days following the termination of pregnancy, for any cause aggravated by the pregnancy or as a result of the birthing process.<sup>1</sup> As a health indicator, it is measured as the

number of maternal deaths per 100 000 live births. This measurement is generally used to evaluate the availability and quality of access to maternal health services.

Mexico accepted the UN Millennium Development Goals, which included reducing maternal deaths by 75 percent between 1990 and 2015. However, as mentioned in other contributions on this topic, our country has officially recognized that it did not meet this goal.<sup>2</sup>

The efforts to diminish maternal mortality in Mexico began in 1921, 100 years ago in 2021. Almost a century ago, then, at the first Mexican Congress on Children, the proposal was made to protect mothers. As a result of those agreements, in 1929, the Maternity House was established on the initiative of a visionary doctor dedicated to caring for women, Dr. Isidro Espinosa de los Reyes, after whom today's National Perinatal Institute was named in 2007. Once the institution was set up, in 1930, it reported a maternal mortality rate of 60 wom-

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en per 10 000 recent live births (LB); and in 1944, when the Mexican Social Security Institute (IMSS) was created, the number had dropped to 35 deaths per 10 000 LB.

During the 1960s and 1970s, very important efforts were made to harmonize medical care during birth, producing a drop in maternal mortality in the most advanced obstetrics hospital of the time, the Gynecological-obstetrics Hospital Number 1, which reported 15 deaths per 10 000 LB. In 1985, the figures were 110 to 120 deaths per 100 000 LB, and in 1990, the General Statistics Office reported 95 deaths per 100 000 LB. In an effort to review the evolution of maternal mortality, in 1997, an analysis of the previous 25 years was published, showing rates of 90.30 to 57.15 deaths per 100 000 LB. The last IMSS report for 2000 to 2005 shows a reduction from 39 to 27 deaths per 100 000 LB. Mexico's Ministry of Health Report for 2009 cited an evolution of maternal mortality from 2006 to 2008 from 62.58 to 50.8 deaths per 100 000 LB. Today in Mexico, the official rate is 38.3 according to the Maternal Mortality Observatory, which matches other sources very closely.<sup>3</sup>

The main causes of maternal deaths in Mexico between 2010 and 2012 were the so-called "indirect" causes (28.2 percent), preeclampsia (23.7 percent), obstetrical hemorrhage (17.5 percent), and those associated with abortions (8.9 percent).<sup>4</sup>

One matter of concern in these figures is that many of the reports indicate that marginalized groups such as women from low socio-economic strata, indigenous women, those who live in towns with fewer than 2 500 inhabitants, and teens are exposed to the greatest risk factors because they do not receive appropriate obstetric care. The hospitals of the Ministry of Health are responsible for care for this sector of the population since it is there that women without steady jobs go; and it is in their hospitals that the greatest number of deaths occurs. For this reason, maternal mortality in our country is a multifaceted public health problem since it is related to health-service coverage and quality, as well as socio-economic and cultural factors; this is why lowering both mortality and morbidity (illness) rates is a health challenge.<sup>5</sup>

The most recent change in the epidemiological framework of maternal deaths in our country is the increase in indirect causes: those linked to an illness that existed before pregnancy or one which evolved during pregnancy. The condition is not directly due to the pregnancy, but it is worsened by the process of the gestation. Among the most common indirect causes are infections, diabetes mellitus, chronic hypertension, cardiomyopathy, different kinds of leukemia, purpura, encephalopathy, asthma, and chronic liver disease.<sup>6</sup>

The influenza epidemic in Mexico in 2009 contributed to an increased number of deaths of pregnant women since they are one of the groups most vulnerable to the AH1N1 virus. Pneumonia due to influenza was the basic cause of 16.4 percent of the deaths registered in 2009, in contrast to 2008, when it was only cited as the cause of 1.4 percent of deaths. HIV also has an impact on maternal death rates. The importance of both diseases lies in the fact that they both make caring for women during pregnancy, the birth, or postpartum more complicated.<sup>7</sup>

Women of reproductive age are the group with the greatest prevalence of overweight and obesity in Mexico, and these conditions increase risks during a Cesarean birth or the probability of pathologies like preeclampsia, gestational diabetes, miscarriage, and different conditions that affect women's health before pregnancy. Some researchers have demonstrated that there is a greater risk of congenital malformations in babies born to obese women, including malformations of the neural tube or the heart. We also know that the children of obese women are more likely to present with obesity and later with diabetes mellitus, particularly if they were born prematurely.<sup>8</sup>

Obese or overweight women over the age of 40 constitute a special group that must be evaluated extensively before becoming pregnant. The reason is that they are seven times more likely to die due to causes linked to a pregnancy, particularly from indirect causes. In these pregnancies, appropriate birth control, pre-conception counseling, early identification of pathologies, and timely referral to specialized hospitals are the measures that can diminish the number of deaths.<sup>9</sup>

For many years hypertension associated with pregnancy was the primary cause of maternal death in Mexico and in many other places. It presents as a condition that manifests clinically after the first 20 weeks of pregnancy. A late diagnosis means that the patient does not have the chance to be referred to specialized medical services where she can be cared for in the serious phases of the disease. Its most common

form is preeclampsia, which manifests through hypertension, proteinuria, and systemic damage. When in addition to these symptoms, the patient suffers from convulsions, she has eclampsia. The possibility of a preeclampsia patient evolving to its more serious form is about 33 percent, according to national mortality statistics.

Eclampsia requires hospitalization in an intensive care unit; this may include assisted breathing therapies, neurological assessment, and continual care by experts in intensive care and hematology experienced in this critical condition. The main way to decrease the risks once the possibility has been detected that the patient may have it is to refer her to services specialized in clinical control using complex methodologies. The unpredictable nature of this condition makes it necessary to have measures for detecting it among all levels of the population.<sup>10</sup>

Another direct cause of maternal death, whose frequency is close to that of hypertensive disorders of pregnancy, is obstetrical hemorrhage. This can present from the third trimester of pregnancy until the late post-partum period; the latter is responsible for 50 percent of the cases. One study has shown that 88 percent of these deaths happen in the first four hours. This is the main cause of maternal morbidity in many parts of the world and one of the three main causes of maternal death, together with hypertensive disorders and sepsis.

Hemorrhage is defined as the loss of 500 milliliters or more of blood after birth or of 1 000 milliliters or more after a Cesarean, although this definition is completely subjective. Its prevalence varies widely depending on the criteria used, but it is calculated that it presents in from three to five percent of all births.

Unfortunately, 80 percent of patients with obstetrical hemorrhage do not have predictable risk factors. This means that the medical team and hospital units must always be prepared to deal with it.

Pregnancy is a period which offers the opportunity to have a positive impact in the life of a mother and her child. Many of the prenatal control programs already involve nutritional care as one of their mainstays, although it is important to underline that it is often underestimated by both health professionals and patients. Changes in maternal weight significantly influence the evolution of the pregnancy, the birth, and the newborn.

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and patient must take an interest in them. We have to remember that strategic measures like reducing sedentary lifestyles during pregnancy itself and an appropriate control of diet will have a positive impact on the health of our population 30 years from now, when those newborns have become adults.

The fight against maternal mortality must be waged from different perspectives and with different strategies. Lack of access to quality health care due to the patient's location, the distance to a health center, and the lack of transportation is the main obstacle to reducing that risk. It is important to point out that 57.6 percent of maternal deaths occur in federal or state clinics or hospitals, and they are not always due to the institutions' lack of materials or resources.

At times, resorting to alternative and traditional medicine can impede or delay sending these women to health services that could identify the pathology and channel the patient to a larger hospital with the capacity to deal with the problem. In these cases, the delay in delivering highly specialized medical care to marginalized communities contributes to keeping maternal mortality high, particularly in cases of obstetrical hemorrhage and in emergencies like eclampsia, in which it is unlikely that women will arrive alive or without consequences to the specialized center with the trained personnel, equipment, and medications needed to deal with these kinds of complications.

Other barriers are the quality of care and the resistance to change and even the attitudes of medical staff regarding new technologies, equipment, and medications. For example, despite the effectiveness of magnesium sulfate in handling preeclampsia, several researchers have documented the fact that it is not routinely administered, but is used only in teaching hospitals. The unavailability of certain medications, of health professionals who know how to use them, and the costs are other obstacles.<sup>11</sup>

Maternal mortality is a problem that involves us all, and we have to make everyone aware on every level of the possibilities of decreasing the risk factors in a stage of life as vulnerable as pregnancy. The media must flood popular cul-

ture with information about the problem, and the government must strengthen already existing programs since we all have the right to health and no woman should die in childbirth.

To contribute to this objective, the UNAM School of Medicine has created a multidisciplinary group that has forged a strategic alliance with the Mexico City Ministry of Health and with other academic institutions to develop a program for care for pregnant women. In addition to better characterizing the conditions surrounding the care for these women in this part of the country, the idea is to contribute with inputs to design programs and public policies aimed at preventing complications during pregnancy. In addition, new preventive measures have been developed using ongoing clinical trials to manage preeclampsia and obstetrical hemorrhage. Some of them have produced very promising results.<sup>12</sup> **MM**

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#### NOTES

<sup>1</sup> GIRE, "Mortalidad materna," Chapter 3 of the report *Omisión e indiferencia. Derechos reproductivos en México* (Mexico City: GIRE, 2015), informe. gire.org.mx/caps/cap3.pdf, accessed July 22, 2015.

<sup>2</sup> Dr. Ricardo García Cavazos, director of the Centro Nacional de Equidad y Género, Secretaría de Salud forum "Salud materna en México," Mexican Senate, June 17, 2015, www.objetivosdesarrollodelmilenio.org.mx.

<sup>3</sup> See <http://www.omm.org.mx/omm/images/stories/Documentos%20grandes/Numeralia%202013,%20OPS.pdf>.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Consejo Nacional de Evaluación de la Política de Desarrollo Social, *Evaluación estratégica sobre mortalidad materna en México 2010: Características sociodemográficas que obstaculizan a las mujeres embarazadas su acceso efectivo a instituciones de salud* (Mexico City: Coneval, 2012).

<sup>7</sup> Ibid.

<sup>8</sup> K. Arendas, Q. Qiu, and A. Gruslin, "Obesity in Pregnancy, Pre-conceptual to Post Partum Consequences," *Journal of Obstetrics and Gynaecology Canada* vol. 30, no. 6, June 2008, pp. 477-488.

<sup>9</sup> Mardía López and Maricela Rodríguez, "Epidemiología y genética del sobrepeso y la obesidad. Perspectiva de México en el contexto mundial," *Boletín médico del Hospital Infantil de México* vol. 65, no. 6 (November-December 2008), pp. 421-430.

<sup>10</sup> J. Briones, E. Gómez, F. Ávila, and M. Díaz de León, "Experiencia Toluca en preeclampsia y eclampsia," *Cirugía y cirujanos* vol. 73, 2005, pp. 101-105.

<sup>11</sup> Miguel Ángel González-Block, Alma Saucedo-Valenzuela, and Yared Santa Ana-Téllez, "Factores asociados a la demanda de servicios para la atención del parto en México," *Salud Pública de México* vol. 52, no. 5 (2010), pp. 416-423.

<sup>12</sup> F. Vadillo-Ortega, O. Perichart-Perera, S. Espino, M. A. Ávila-Vergara, I. Ibarra, R. Ahued, M. Godines, S. Parry, G. Macones, and J. F. Strauss, "Effect of Supplementation during Pregnancy with L-arginine and Antioxidant Vitamins in Medical Food on Pre-eclampsia in High Risk Population: Randomised Controlled Trial," *The British Medical Journal*, 342:d2901, doi:10.1136/bmj.d2901, May 19, 2011, <http://www.bmj.com/content/342/bmj.d2901>.