

Recently published results and studies based on COVID-19 surveillance data have indicated an increased risk among pregnant women of presenting with severe forms of COVID-19 and, therefore, of being hospitalized and admitted to intensive care units (ICU). The Pan American Health Organization / World Health Organization (PAHO/WHO) requests that Member States intensify efforts to ensure access to prenatal care services, as well as to implement preventive measures to reduce morbidity and mortality associated with COVID-19 across all levels of the health system, in order to maintain the commitment to reducing maternal and perinatal mortality and the progress achieved to date.

Introduction

Countries and territories in the Region of the Americas have faced not only the inherent challenges of responding to the COVID-19 pandemic, but also the challenges of sustaining the public health achievements made thus far. These efforts are all in parallel with continuing to offer the necessary healthcare services for women of childbearing age, and particularly for pregnant women, without interruption.

The implementation of measures restricting the movement of people, and the closure of some healthcare centers, have made it difficult for pregnant women to receive the appropriate number of prenatal checks corresponding to the respective gestational age. This could potentially result in the delayed detection of issues related to the pregnancy (such as gestational diabetes or hypertension) or to the fetus directly (such as intrauterine growth restriction) and, therefore, pose a risk to both the mother and fetus.

The challenge of adopting timely corrective measures has been exacerbated by the scarcity of scientific information available regarding the effects of the SARS-CoV-2 virus on pregnancy and the fetus.

Acknowledging that the characteristics of pregnant women in the Region of the Americas may differ from that of pregnant women in Europe, some studies conducted among pregnant women in Europe can be considered for identifying risk factors to mitigate the potential impact of COVID-19 on pregnancy and the fetus.

One such study conducted amongst a cohort of 427 pregnant women who were hospitalized with confirmed SARS-CoV-2 infection between 1 March 2020 and 14 April 2020 in the United Kingdom found that the majority of those admitted to the hospital were in the late second or third trimester of pregnancy. Overall, 233 were Black or Other ethnic minority group, 281 were

overweight or obese, 175 were 35 years or older, and 145 had pre-existing comorbidities. Forty-one women admitted to the hospital required respiratory support and 5 women died.

The study indicated that 266 of the women gave birth or had a pregnancy loss; 196 gave birth at term. Twelve of 265 newborns tested positive for SARS-CoV-2 RNA, including 6 within the first 12 hours after birth.¹

In another study conducted in Spain, antibody testing for SARS-CoV-2 was conducted for 874 pregnant women consecutively attending first trimester screening trimester (between 10-16 weeks of gestation, 372 women) or delivery (502 women) between 14 April and 5 May 2020 at three university hospitals² in Barcelona. Seroprevalence was similar between women in the first trimester of pregnancy and women in the third trimester, suggesting a similar risk of infection; however, both the proportion of women with symptoms and the proportion of women requiring hospitalization were higher amongst those in their third trimester compared to those in the first trimester.³

Below is a summary of the situation of pregnant women and maternal mortality in the context of COVID-19 in countries of the Region of the Americas for which information was available.

List of countries in the Region of the Americas that have reported cases and deaths among pregnant women with COVID-19 (**Table 1**).

Table 1. Cases and deaths among pregnant women with COVID-19, by country. Region of the Americas. January 2020 to 11 August 2020.

Pregnant women with COVID-19		
Country	Alive	Deaths
Argentina	155	1
Bolivia	50	5
Brazil	2,256	135
Colombia	571	2
Dominican Republic	304	12
Ecuador	849	20
Haití	39	2
Mexico*	3,916	106
Peru	4,782	36
United States of America	15,735	37

* Mexico reports pregnant and postpartum women

Source: Latin American Center for Perinatology, Women's Health, and Reproductive Health (CLAP/SMR) and information published on the websites of the Ministries of Health, Health Agencies or similar and reproduced by PAHO/WHO

¹ Marian Knight 1, Kathryn Bunch 2, Nicola Vousden et al. Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK: national population-based cohort study. *BMJ* 2020 Jun 8;369:m2107. doi: 10.1136/bmj.m2107.

² Hospital Sant Joan de Déu, Hospital Clínic, and Hospital Sant Pau

³ Francesca Crovetto, Fàtima Crispi, Elisa Llubra et al. Seroprevalence and presentation of SARS-CoV-2 in pregnancy. *The Lancet*. DOI: [https://doi.org/10.1016/S0140-6736\(20\)31714-1](https://doi.org/10.1016/S0140-6736(20)31714-1)

In **Brazil**, between 1 January and 1 August 2020, a total of 5,174 pregnant women were hospitalized with severe acute respiratory infection (SARI), corresponding to 0.9% of all hospitalizations related to SARI. Of the total number of pregnant women hospitalized with SARI, 2,256 (44%) were confirmed with COVID-19, including 135⁴ deaths.

The geographical distribution of pregnant women hospitalized for SARI confirmed with COVID-19, by region of residence in decreasing order, is as follows: Southeast (885 cases), Northeast (744 cases), North (312 cases), Central-West (163 cases), and the South (152 cases). Deaths were reported in the following regions, in decreasing order: Northeast (52 deaths), Southeast (49 deaths), North (23 deaths), Central-West (10 deaths), and the South (1 death).

The most COVID-19 deaths among pregnant women were reported among 30 to 39-year-olds, followed by 20 to 29-year-olds. Overall, 56.3% of COVID-19 deaths among pregnant women occurred in the third trimester, 33.3% in the second trimester, and 4.4% in the first trimester (**Table 2**).

The most frequent comorbidities identified among 135 deaths were diabetes (16.3%), heart disease (13.3%), obesity (11.9%), and hypertension (5.9%).

Table 2. Distribution of pregnant women with COVID-19, by age group and gestational age. Brazil, 1 January to 1 August 2020.

Pregnant women with COVID-19		
Characteristics	Alive	Deaths
Age group	Cases	Cases
10-19 years	203	6
20-29 years	941	51
30-39 years	956	64
40-49 years	156	14
Total	2,256	135
Gestational age	Cases	Cases
1 st Trimester	177	6
2 nd Trimester	523	45
3 rd Trimester	1,450	76
Unknown	106	8
Total	2,256	135

Source: Data published by the Ministry of Health of Brazil and reproduced by PAHO / WHO.

In **Mexico**, since the confirmation of the first COVID-19 cases in the country⁵ and until 9 August 2020, 3,916 pregnant and postpartum women with confirmed SARS-CoV-2 infection undergoing follow-up, including 106 (2.7%) deaths, have been reported.

⁴ Preliminary data, subject to change.

⁵ 27 February 2020

The federal entities with the most cases of pregnant women and postpartum women with COVID-19 are: Mexico City (480 cases, 13 deaths), and the States of Tabasco (307 cases, 11 deaths), Mexico (293 cases, 13 deaths), Sonora (202 cases, 5 deaths), Nuevo León (199 cases, 3 deaths), (2), Veracruz (189 cases, 6 deaths), and Guanajuato (182 cases, 3 deaths).

The median age of COVID-19 deaths among pregnant and postpartum women is 30 years (range 19 to 42 years). Overall, 43.3% of the deaths occurring in the third trimester of pregnancy, 34% during postpartum, 16% in the second trimester, and 5.6% in the first trimester (**Table 3**). Among the deaths, 33 (31%) had required intubation and 35 (33%) were in intensive care units (ICUs).

The most frequent comorbidities identified among the deaths were obesity (17.9%), diabetes (10.4%), hypertension, (7.6%), and asthma (4.7%).

Table 3. Distribution of COVID-19 deaths among pregnant and postpartum women by age group and gestational age. Mexico. 27 February to 9 August 2020.

COVID-19 deaths among pregnant and postpartum women	
Age group	Cases
15-19 years	2
20-24 years	21
25-29 years	24
30-34 years	31
35-39 years	20
40-44 years	8
Total	106
Gestational age	Cases
1 st Trimester	6
2 nd Trimester	17
3 rd Trimester	47
Postpartum	36
Total	106

Source: Data published by the Mexico Secretariat of Health and reproduced by PAHO / WHO.

The maternal mortality ratio (MMR) for COVID-19 as of epidemiological week (EW) 31 of 2020⁶ in Mexico is 8.1 maternal deaths per 100,000 live births.

As of 9 August 2020, there were 4,066 newborns reported in the SISVER⁷ platform, of which 832 (20.5%) were positive for SARS-CoV-2. With respect to their mothers, 130 were born to mothers who

⁶ EW 31 of 2020 ending 1 August 2020

⁷ System of Epidemiological Surveillance of Respiratory Diseases of Mexico (SISVER, per its acronym in Spanish).

tested positive for SARS-CoV-2, 4 to mothers with suspected COVID-19, and 66 to mothers who tested negative and for the rest 632, there was not found the register of the mothers in the SISVER⁸.

In the **United States of America**, a study published by the United States Centers for Disease Control and Prevention (US CDC)⁹ reported that between 22 January and 7 June 2020, 326,335 cases of SARS-CoV-2 infection were reported among women of reproductive age¹⁰ as part of COVID-19 surveillance. Among 91,412 reproductive age-women with SARS-CoV-2 infection for which pregnancy status was available, 8,207 (9%) were pregnant.

While the study found that frequencies of chronic lung disease, diabetes mellitus, and cardiovascular disease were higher among pregnant women compared to non-pregnant women, the proportion of hospitalized women was also higher among pregnant than non-pregnant women (31.5 % vs. 5.8%).

After adjusting for age, the presence of underlying conditions, and race/ethnicity, pregnant women were 5.4 times more likely to be hospitalized (95% CI = 5.1–5.6), 1.5 times more likely to be admitted to the ICU (95% CI = 1.2–1.8), and 1.7 times more likely to receive mechanical ventilation (95% CI = 1.2–2.4) than non-pregnant women.

Additionally, ICU admission was reported more frequently among non-Hispanic Asian pregnant women (3.5%) than among all pregnant women (1.5%).

With regards to deaths, 16 (0.2%) deaths were reported among pregnant women compared to 208 (0.2%) among non-pregnant women (aRR¹¹ = 0.9, 95% CI = 0.5–1.5).

These findings suggest that among women of reproductive age with COVID-19, pregnant women are more likely to be hospitalized and have a higher risk of admission to the ICU and receiving mechanical ventilation.

While this study has limitations that must be considered, it highlights the need for pregnant women to be aware of the potential risk of developing serious illness from COVID-19.

According to information published by the US CDC between 22 January and 4 August 2020, a total of 15,735 cases of COVID-19 among pregnant women, including 37 deaths, have been reported in the United States of America. Of these cases, 4,086 (26%) were hospitalized¹², 183 were admitted to the ICU, and 66 required mechanical ventilation¹³.

⁸ Secretariat of Health of Mexico. Weekly epidemiological report of pregnant and postpartum women studied, suspected of COVID-19. EW 33, 2020. Available at: <https://bit.ly/33z4x4Q>. Accessed 11 August 2020

⁹ Sascha Ellington; Penelope Strid; Van T. Tong; et al. Characteristics of Women of Reproductive Age with Laboratory-Confirmed SARS-CoV-2 Infection by Pregnancy Status — United States, January 22–June 7, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69: [769-775].

¹⁰ 15 to 44 years of age

¹¹ aRR=Adjusted Risk ratio. Adjusted for age as a continuous variable, dichotomous yes/no variable for presence of underlying conditions, and categorical race/ethnicity variable. Nonpregnant women are the reference group.

¹² Data were not available to distinguish hospitalization due to factors related to COVID-19 (such as worsening respiratory status) from hospitalization due to factors related to pregnancy, such as delivery.

¹³ Data from 15,735 women were collected; however, ICU admission data was only available for 4,319 (27.4%) women and mechanical ventilation data was only available for 3,533 (22.5%) women.

Guidelines for national authorities

The current available data suggest that pregnant women are at a higher risk of developing a severe form of COVID-19; in some cases, this may lead to death. In this context, the Pan American Health Organization / World Health Organization (PAHO/WHO) recommends Member States address specific risks and vulnerabilities faced by this population, ensure the continuity of prenatal care services, and ensure timely attention to severe signs and symptoms among pregnant women with COVID-19. Moreover, it is recommended to maintain communication with pregnant women in order to provide resources for whom to consult in case of an emergency and to coordinate virtual, face-to-face, or home check-ups if necessary.

The following are a series of recommendations related to epidemiological surveillance, laboratory, and clinical management of pregnant women in the context of the COVID-19 pandemic.

Surveillance

As emphasized in previous PAHO/WHO COVID-19 Epidemiological Alerts and Updates¹⁴, the following activities should be performed to interrupt the transmission of COVID-19:

- Early detection of suspected cases
- Laboratory confirmation
- Isolation
- Contact tracing and quarantining of contacts

For the early detection of suspected cases, PAHO/WHO recommends using the updated case definitions for COVID-19, available at: <https://bit.ly/3fPo6bx>

Laboratory

Confirmation of COVID-19 circulation within a population requires laboratory testing. PAHO/WHO recommends that all suspected cases according the case definitions be tested for COVID-19 using virological assays.

It is important to ensure access to diagnostic tests to confirm diagnosis; however, in areas with high incidence and/or limited capacity or access to laboratory testing, it is important to establish prioritization criteria for conducting tests such that measures can be implemented to reduce spread. In this respect, the prioritization of tests for suspected cases amongst pregnant women should be considered, given that:

- They are persons at-risk of developing severe forms of the disease, and
- They will require hospitalization at some point during their pregnancy.

¹⁴ PAHO/WHO Epidemiological Alerts and Updates, available at: <https://www.paho.org/en/epidemiological-alerts-and-updates>

Any pregnant woman suspected of having COVID-19 who cannot be confirmed through laboratory testing for any reason should be considered as a case of COVID-19.

Clinical management

All pregnant and postpartum women must be clinically managed in accordance with the guidelines and regulations established and in effect in each respective country and territory in the Region of the Americas.

Additional specific care measures will be required for pregnant woman for whom SARS-CoV-2 infection is suspected or confirmed; therefore, it is recommended to consider the following documents during the decision-making process:

- Guidelines for Critical Care of Seriously Ill Adult Patients with Coronavirus (COVID-19) in the Americas (Short Version), 3 April 2020. PAHO/WHO. Available at: <https://bit.ly/3h1gaFT>
- Algorithm for the management of patients with suspected COVID-19 infection in the primary level of care and in remote areas of the Americas Region, July 2020. PAHO/WHO. Available (in Spanish) at: <https://bit.ly/33SzCk2>
- Initial care of persons with acute respiratory illness (ARI) in the context of coronavirus disease (COVID-19) in healthcare facilities: assess the risk, isolate, and refer. Interim recommendations, version 1. 12 April 2020. PAHO/WHO. Available at: <https://bit.ly/31J7UDL>
- Clinical management of COVID-19. Interim guidance, 27 May 2020. Available at: <https://bit.ly/3aiLmO6>

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9. World Health Organization. Public Health Surveillance for COVID-19: interim guidance. 7 August 2020. Available at: <https://bit.ly/2CqiQQA>