

# Pregnancy during respiratory pandemics: a comparison between 2009/10 H1N1 flu and 2020/21 COVID-19 pandemics in Brazil

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## Abstract

Background: Pregnant women undergo physiological changes that make them a challenging group of patients during pandemic respiratory diseases. Objective: To compare pregnant and non-pregnant women of childbearing age, regarding their demographic profile, clinical aspects, and mortality during the H1N1 and COVID-19 pandemics. Methods: Cross-sectional analysis of data from the SIVEP-Gripe, a Brazilian national surveillance database for respiratory viruses. Women of childbearing age with Severe Acute Respiratory Syndrome induced by H1N1 (2009/2010) and COVID-19 (2020/2021) were included. For each pandemic, women were divided into two groups according to their gestational status: pregnant or non-pregnant women. Groups were compared regarding epidemiological and clinical characteristics and their outcomes. Additionally, the effect of being pregnant was compared between both pandemics. Results: The analysis included 8,854 women for H1N1 flu pandemic (2,784 pregnant and 6,070 non-pregnant) and 69,607 women for COVID-19 pandemic (5,383 pregnant and 64,224 non-pregnant). In both pandemics, pregnant women were younger than non-pregnant women. Overall, pregnant women had lower frequencies of comorbidities and were less symptomatic. Nonetheless, notification due to hospitalization was more frequent in pregnant women in both pandemics. Among hospitalized women, pregnant women presented lower mortality rates than non-pregnant women (9.7% vs 12.6%,  $p=0.002$  in H1N1 pandemic and 9.7% vs. 17.4%,  $p<0.001$  in COVID-19 pandemic). Conclusion: In both pandemics, pregnant women had a higher rate of notification due to hospitalization than non-pregnant women. Nonetheless, among hospitalized subjects, pregnant women presented lower rates of death than non-pregnant women and this protection effect was more marked during the COVID-19 pandemic.

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