Covid-19: The time to shield all pregnant frontline workers is now

Recent outbreaks of influenza, Ebola, and Zika viruses have taught us that pregnant women are uniquely vulnerable to emerging infectious threats. Let’s not fail pregnant frontline workers during the covid-19 pandemic, say Elizabeth B Brickley and Enny S Paixão

Elizabeth B Brickley assistant professor of infectious disease epidemiology, Enny S Paixão

London School of Hygiene and Tropical Medicine, UK

Last month the Royal College of Obstetricians and Gynaecologists introduced new guidance on covid-19 and occupational health, asserting that for pregnant healthcare workers after 28 weeks’ gestation and those with underlying health conditions “a more precautionary approach is advised. Women in this category should be recommended to stay at home.” This precautionary approach should be extended to all pregnant workers on the frontline of the covid-19 response, including those in non-medical roles.

To accommodate and protect the developing fetus, pregnancy exerts new pressures on a woman’s respiratory and cardiovascular systems and induces profound changes to her immune system. Pregnant women are at increased risk during gestation of developing hypertension and diabetes, both newly recognised risk factors for severe covid-19. Compared with their non-pregnant peers, pregnant women may also have markedly altered immune responses when they encounter new infectious agents like the novel severe acute respiratory syndrome coronavirus (SARS-CoV-2) that causes covid-19.

Few pregnant women have had confirmed cases of covid-19 to date, and the evidence base on the consequences of SARS-CoV-2 infection in pregnancy is scant. Vital comparisons of the clinical course of covid-19 between pregnant and non-pregnant women of child bearing age are, unfortunately, lacking. Vertical transmission remains an open question. The relative risks of adverse pregnancy outcomes, including miscarriages, intrauterine growth restrictions, stillbirths, congenital anomalies, and preterm births, between SARS-CoV-2 infected and uninfected pregnant women are also unknown.

Looking back to recent emerging infectious disease outbreaks, we have good reasons to be concerned about pregnant frontline professionals.

Past outbreaks teach us that pregnant women may be at heightened risk of severe complications from respiratory infections. In 2009, a pandemic strain of influenza A (H1N1) emerged and rapidly spread across the globe. When researchers collated 120 studies investigating the risks of influenza A (H1N1)pdm09 in pregnancy, they concluded that infections were associated with higher risks of hospitalisation, intensive care admission, and death. Further evidence, from both the 20099 and 1918 pandemics, indicates that infection with influenza during the first trimester is associated with increased risks of fetal loss. Analogous reports of severe pregnancy complications and fetal demise can also be found in the more limited literature on the coronaviruses that caused epidemics of SARS and MERS.9

Past outbreaks also show us that, despite facing disproportionately high risks, pregnant women may be systematically excluded from trials of potentially lifesaving vaccines and therapeutics. Consider, for example, the 2013-16 Ebola outbreak in Guinea, Liberia, and Sierra Leone. Observational reports dating back to 197610 suggest that Ebola and pregnancy may be a deadly combination: over 80% of infected pregnant women die and virtually all lose their pregnancies. Nevertheless, when investigators examined the clinical trials of vaccines and drugs “proposed, initiated, or conducted” during the recent Ebola virus outbreak in west Africa, they found that all 14 trials failed to include pregnant women.11 Much hope is currently pinned on the development of a vaccine for SARS-CoV-2, but it remains uncertain to what extent such a vaccine would benefit pregnant women.

Finally, past outbreaks illustrate the devastating costs of delays in protecting pregnant women. The 2015-17 Zika virus outbreak and the ensuing epidemic of children born with microcephaly and other congenital birth defects provide perhaps the most striking example of the potential dangers of failing to shield pregnant women from emerging viral threats. After the cluster of microcephaly was first recognised in north east Brazil, epidemiologists swiftly made the causal connection to the seemingly benign Zika virus12 and recognised the elevated risks of infection during the first trimester.13 For many women, the evidence came too late. Although there are currently no reports of birth defects associated with SARS-CoV-2, case
reports by Dong et al\textsuperscript{11} and Zeng et al\textsuperscript{13} of three newborns born with elevated IgM antibodies to the virus have raised new concerns of the possibility of congenital infection. The covid-19 pandemic has only been unfolding for five months, and the full impact of SARS-CoV-2 infections during pregnancy is yet to be seen. Nevertheless, the lack of evidence is not a reason to wait before we act. Pregnancy is a unique, but fleeting, season of many women’s lives. In this unprecedented public health crisis, we can afford to offer pregnant workers in essential public service roles the opportunity to step back temporarily from their frontline professional duties. Failing to adopt protective measures now could place pregnant women and their offspring at unnecessary risk.

Government officials around the world should act today to shield all pregnant frontline workers from exposure to covid-19. We need to respect pregnant women’s autonomy to choose whether to continue working during the pandemic. We should provide pregnant workers in conventionally public facing roles with the opportunity to step back temporarily from their frontline professional duties, allowing them to continue working during the pandemic. We should provide pregnant workers in essential roles the opportunity to step back temporarily from their frontline professional duties, allowing them to continue working during the pandemic.

EBB receives support from the European Union’s Horizon 2020 research and innovation programme under ZikaPLAN grant agreement number 734584 and the Welcome Trust and the UK Department for International Development (205377/Z/16/Z). ESP is funded by the Welcome Trust (grant number 213589/Z/16/Z).

Competing interests: None declared.

12 de Araújo TVB, Ximenes RAA, Miranda-Filho DB, et al. Investigators from the Microcephaly Epidemic Research GroupBrazilian Ministry of HealthPan American Health OrganizationInstituto de Medicina Integral Professor Fernando FigueiraState Health Department of Pernambuco. Association between microcephaly, Zika virus infection, and other risk factors in Brazil: final report of a case-control study. Lancet Infect DIS 2018;18:328-36. 10.1016/S1473-3099(17)30727-2 29077366

Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to http://group.bmj.com/group/rights-licensing/permissions

Published online: 4 May 2020.