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the choice of delivery method for pregnant women with coronavirus disease 2019 (COVID-19). Although we did not mean that vaginal delivery should be overencouraged, we agree with the opinion that obstetricians should maintain their obstetrical indications. However, a high incidence of cesarean deliveries was mentioned by Dr Carosso. It might result from concerns that SARS-CoV-2 exists in the vagina. It was a reasonable suspicion because SARS-CoV-2 had been identified in anal swabs, urine, and tears in an earlier study.¹ We did test samples from the vagina; however, no samples were positive. Therefore, SARS-CoV-2 infection should not be considered as a direct indication for cesarean delivery at present. Our results may provide evidence for obstetricians to choose the delivery method on the basis of obstetrical indications for pregnant women with COVID-19.

In addition to choosing the appropriate delivery method, it is equally important to find out possible transmission routes and take targeted measures, as potential vertical transmission was reported after both vaginal delivery and cesarean delivery.^{2,3}

We agree with Dr Carosso's concerns about the anorectum as a potential transmission route during vaginal delivery. Based on the positive anal swab cases in our study, we think that we should pay full attention to the preventive measures during vaginal delivery. Because of the low positive rate of anal swabs in detecting SARS-CoV-2, results have been confusing. We are responsible for this result as all the samples were double tested and checked in 2 different labs with full qualification certification. As patients with COVID-19 were all in a separate special ward, the sample size of our research was a large one under the situation of the COVID-19 pandemic. The time between onset of symptoms and sample collection varied for the same reason. A small portion of patients did not have positive oropharyngeal swabs. The reasons had been listed in our original published article. In addition, all patients' symptoms, including intestinal, were collected but not mentioned because of the length of limitation of the research letter.

Vaginal delivery is a very complex physiological process, and vertical transmission of SARS-CoV-2 from the mother to the offspring via the placenta, birth canal, or intestinal tract is poorly understood at this moment. To obtain more evidence of transmission route of SARS-CoV-2, we need to involve as

many pregnant women with COVID-19 as we can and test all samples including anal swabs. ■

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This communication has been published in the middle of the coronavirus disease 2019 pandemic and is available via expedited publication to assist patients and healthcare providers.

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A call for precision in coronavirus disease case reporting: a crucial step more important now than ever



TO THE EDITORS: With great interest, I read the article of Lokken et al¹ who asserted in their Condensation and Conclusions sections that “severe COVID-19 occurred in 15% of pregnant patients,” a very novel finding. However, in

further reviewing their methodology, it is clear that severe coronavirus disease 2019 (COVID-19) cases (n=6) came from a pool of pregnant patients among hospitals which “have 34,000 deliveries annually,” abstracted over 87 days.

Thus, the expected denominator would be something in the order of 8104 deliveries in this pool during the study period. This denominator would yield a rate of severe COVID-19 of approximately 0.07% among pregnant patients, not 15%.

In these days of rapid learning and a near tsunami of COVID-19 updates to our clinical and epidemiologic knowledge base, I believe it is important that all authors strive to be precise and factual in these important communications. Lokken et al¹ detailed the specifics through their abstract and manuscript in both their Methods and Results sections. However, they have done a disservice to busy clinicians and readers of *American Journal of Obstetrics and Gynecology* when they summarized incorrectly in their conclusion that “Nearly 15% of pregnant patients developed severe COVID-19.” We must all strive to mitigate, not exacerbate, the many unintended consequences of this pandemic. ■

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1. Lokken EM, Walker CL, Delaney S, et al. Clinical characteristics of 46 pregnant women with a SARS-CoV-2 infection in Washington State. *Am J Obstet Gynecol* 2020. [Epub ahead of print].

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REPLY



We thank Dr Norman for the call for precision in reporting results, particularly during the coronavirus disease 2019 (COVID-19) pandemic¹; we could not agree more. Pregnant women and clinicians need such data to make informed and evidence-based decisions during this stressful time. The objective of our case series of 46 pregnant patients with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections was to report the clinical outcomes of COVID-19 among these patients.² Our aim was not to provide population-health estimates on the rate of infection or severe disease among all pregnant patients during this

time, as estimated by Dr Norman. Although a rigorous assessment of the population-based risk in pregnancy is important, a key estimate for obstetricians right now is the likelihood that a patient infected with SARS-CoV-2 will experience severe disease or adverse pregnancy outcomes. We believe that our report stating that 15% of pregnant patients with COVID-19 had severe disease is accurate (6 of 46 patients with COVID-19; 6 of 43 symptomatic patients). As obstetricians, we aimed to understand the effect of COVID-19 on our own patients to counsel them to the best of our ability.

Our case series reported all known cases from 6 large hospital systems contributing 40% of the annual deliveries in Washington State. This was a key strength of our manuscript because we captured confirmed infections in pregnancy across all trimesters, independent of severity. Our abstract and manuscript clearly reported outcomes on 46 pregnant women with SARS-CoV-2 infections with study results targeted to these patients. We did not attempt to make larger population-wide conclusions across Washington State. Although the rate of SARS-CoV-2 infections and severe COVID-19 disease among all pregnant women in Washington State is low, our case series indicates that we cannot discount the potential for severe disease among pregnant individuals who acquire SARS-CoV-2 infections. In particular, we highlight factors that may increase the risk of severe COVID-19 in pregnancy, such as obesity and asthma, which may affect counseling or medical management after SARS-CoV-2 diagnosis; these factors deserve further study.

There are many ways to leverage data to estimate the effects of a disease on individuals and on the population, each of which is appropriate for different purposes and audiences. For our manuscript, the goal was to provide obstetrical care providers with key clinical insights into disease outcomes among pregnancies affected by SARS-CoV-2 specifically to urgently inform clinical care. ■

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