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Partner testing of severe acute respiratory syndrome coronavirus 2—positive women presenting for delivery



OBJECTIVE: Many hospitals across the United States currently perform universal severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing on all women admitted for delivery. This maternal case identification has widespread implications ranging from the presence of support persons during delivery to optimizing care for the neonate after discharge. Household contacts, such as the partners of pregnant women with SARS-CoV-2, are considered at high risk for the acquisition of infection,¹ and understanding the SARS-CoV-2 status of the partners of pregnant women similarly has broad implications for the family unit. However, despite evidence supporting this practice,² limited efforts have been made to incorporate testing and counseling of the partners of women who test positive for SARS-CoV-2 into obstetrical care.

STUDY DESIGN: This is a retrospective cohort study of women who delivered at the Northwestern Memorial Hospital between April 8, 2020, and February 20, 2021. The standard protocol at our institution during the study period was to perform universal SARS-CoV-2 testing on all pregnant women admitted for delivery. During the period ranging from April 8, 2020, to December 7, 2020, women who tested positive upon admission or within 10 days before delivery were not permitted to have a support person present during their hospitalization for delivery, but were asked to identify a support person to undergo SARS-CoV-2 testing to aid in discharge planning for the neonate. From December 8, 2020, to February 20, 2021, women who tested positive were permitted to have a support person present and the support person was given the option to obtain an in-house SARS-CoV-2 test. Because most women reported their partner as the identified support person, we will use the terminology of partner herein. Partner testing was accomplished either via testing organized by the partner's primary care provider or via direct order placed by the obstetrical clinician. The latter initially was administered at an outpatient drive-through testing site and then was transitioned to rapid point-of-care testing performed by obstetrical nurses once testing capacity evolved. The prevalence of SARS-CoV-2 positivity among partners who underwent testing was calculated. Indeterminate results for partners was considered as presumptive positive and was grouped with the positive test results for analysis. Bivariable analyses were performed to identify whether individual patient sociodemographic characteristics were associated with

an increased prevalence of partner positivity. A sensitivity analysis was performed and excluded partners with indeterminate results. This study was approved by the Northwestern University Institutional Review Board before its initiation.

RESULTS: Of the 153 women who tested positive for SARS-CoV-2 within 10 days of delivery, 100 (65%) had a partner tested with the results accessible in the electronic health record. Of the 100 partners tested, 33 (33%, 95% confidence interval, 24.7%–44.3%) had a positive or presumptive positive result for SARS-CoV-2. No maternal sociodemographic characteristics were associated with the partner's test results (Table). A sensitivity analysis that excluded partners with an indeterminate test did not change the findings.

CONCLUSION: Our findings demonstrated that the rate of infection among partners of pregnant women who test positive for SARS-CoV-2 is higher than 16.3%, which is the reported rate for household contacts in the general population.³ Although social determinants of health have been identified as risk factors for SARS-CoV-2 acquisition in the community,⁴ sociodemographic characteristics did not seem to be associated with SARS-CoV-2 positivity among these tested partners. The majority of the families received public insurance, and racial and ethnic minority populations were disproportionately represented in these data. We hypothesize that, although social determinants of health are a risk factor for SARS-CoV-2 acquisition in the community, once the infection is in the household, social determinants of health no longer play a major role in affecting the risk for close contacts. Although no maternal sociodemographic characteristics were identified as being associated with partner positivity, we recognize that our sample size could lead to a type 2 error and that further research into this topic is warranted. Relying on symptom-based testing would miss the identification of more than half of all SARS-CoV-2 cases from household contacts.² Our data corroborate these findings and encourage obstetrical care providers to consider offering testing for the partners of women who test positive for SARS-CoV-2 at the time of delivery. Knowledge of a partner's test result can better guide shared decision making during hospitalization for delivery, including whether the partner chooses to stay for the delivery, what personal protective equipment should be worn by the partner during labor, and neonatal intensive care unit visitation guidelines. The results of empirical partner SARS-CoV-2 testing can also inform isolation vs quarantine recommendations. Because perceived community benefits significantly impact adherence to these public health measures,⁵ empirical testing may also

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TABLE

Maternal characteristics of partners tested for severe acute respiratory syndrome coronavirus 2

Characteristic	Partner test positive n=33	Partner test negative n=77	P value
Age (y)	28.3 (26.0–32.6)	30.9 (25.5–35.2)	.24
Public insurance	18 (54.6)	36 (56.3)	.87
Race			.99
White	9 (27.3)	16 (25.0)	
Black	9 (27.3)	16 (25.0)	
Asian	2 (6.1)	4 (6.3)	
Other	12 (36.4)	25 (39.1)	
Unknown or declined	1 (3.0)	3 (4.7)	
Hispanic ethnicity	16 (50.0)	25 (40.3)	.37
Married	16 (48.5)	35 (54.7)	.56
Any maternal medical comorbidities	12 (36.4)	30 (46.9)	.32
BMI at delivery (kg/m ²)	31.3 (29.1–36.1)	30.7 (27.1–34.3)	.52
Obese at delivery	19 (59.4)	36 (56.3)	.77
Nulliparous	12 (36.4)	27 (42.2)	.58

Data presented as median (interquartile range) or number (percentage).

BMI, body mass index.

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provide an opportunity to influence partner behavior and mitigate community spread. Findings from empirical testing can also inform discharge planning for the neonate, including targeted counseling and shared decision making on exposure mitigation to the neonate and strategizing about risk containment for caregiver accompaniment to the first pediatric appointments. Although it is ideal that all contacts of patients with coronavirus disease 2019 are tested, there are still many gaps in access to testing. By facilitating completion of testing and counseling on the results during the admission for delivery, we believe that this approach can improve reach and optimize safety for new families. Recommended testing and treatment of an infected partner is already a widely accepted standard for women with chlamydia or gonorrhea infections through expedited partner therapy.⁶ Offering universal partner testing of SARS-CoV-2-positive women should similarly be integrated into obstetrical care delivery to provide comprehensive, holistic care to optimize the health of the entire family unit. ■

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