

## Supplemental Information

### **MOMI-VAX STUDY GROUP (LISTED IN PUBMED AND ORDERED BY LEAD INSTITUTIONS AND ENROLLMENT)**

The following study group members were all closely involved with the design, implementation, and oversight of the MOMI-Vax Study.

#### **Baylor College of Medicine, Houston, Texas, Vaccine Training and Evaluation Unit (n = 53) (Protocol Chair)**

Flor M. Munoz, MD, florm@bcm.edu, Departments of Pediatrics and Molecular Virology & Microbiology, Baylor College of Medicine, and Texas Children's Hospital, Houston, TX 77030

Hana M. El Sahly, MD, hanae@bcm.edu, Departments of Medicine and Molecular Virology and Microbiology, Baylor College of Medicine, Houston, TX 77030

Nanette Bond, PA-C, nbond@bcm.edu, Department of Molecular Virology and Microbiology, Baylor College of Medicine, Houston, TX 77030

Patricia Santarcangelo, RN, santarca@bcm.edu, Department of Molecular Virology and Microbiology, Baylor College of Medicine, Houston, TX 77030

Miguel Cantu, MS, miguel.cantu@bcm.edu, Department of Molecular Virology and Microbiology, Baylor College of Medicine, Houston, TX 77030

#### **University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania (n = 115) (Protocol Chair)**

Richard H. Beigi, MD, beigrh@upmc.edu, Department of Obstetrics, Gynecology, and Reproductive Sciences, Magee-Women's Hospital, Pittsburgh, PA 15213

Katherine E. Bunge, MD, bungke@upmc.edu, Department of Obstetrics, Gynecology, and Reproductive Sciences, Magee-Women's Hospital, Pittsburgh, PA 15213

#### **Emory University (Emory Clinic, Emory University Campus; The Hope Clinic of Emory Vaccine Center; The Hope Clinic of Emory Vaccine Center, Satellite Site; Emory Children's Center; Emory Hospital Midtown; Emory Saint Joseph's Hospital; Grady Memorial Hospital) (n = 126 Total Across Emory Locations)**

Martina L. Badell, MD, mbadell@emory.edu, Department of Gynecology and Obstetrics, Emory University Hospital Midtown Perinatal Center, Atlanta, GA 30308

Nadine Roupheal, MD, nroupha@emory.edu, The Hope Clinic of the Emory Vaccine Center, Division of Infectious Diseases, Department of Medicine, School of Medicine, Decatur, GA

Anandi N. Sheth, MD, MSc, ansheth@emory.edu, Division of Infectious Diseases, Department of Medicine, Emory University School of Medicine, Grady Health System, Atlanta, GA

Carolynn Dude MD, PhD, carolynn.marie.dude@emory.edu, Division of Maternal Fetal Medicine, Department of Gynecology and Obstetrics, Grady Health System, Atlanta, GA

#### **New York University Langone Vaccine Center, New York, New York, Vaccine Training and Evaluation Unit (Manhattan and Brooklyn Research Sites) (n = 93 Total Across Locations)**

Mark J. Mulligan, MD, mark.mulligan@nyulangone.org, New York University Langone Vaccine Center, and Division of Infectious Diseases and Immunology, Department of Medicine, New York University Grossman School of Medicine, New York, NY 10016

Lalitha Parameswaran, MD, lalitha.parameswaran@nyulangone.org, New York University Langone Vaccine Center, and Division of Infectious Diseases and Immunology, Department of Medicine, New York University Grossman School of Medicine, New York, NY 10016

Ashley S. Roman, MD, MPH, ashley.roman@nyulangone.org, Department of Obstetrics and Gynecology, New York University Langone Health, New York, NY 10016

Stephanie Sterling, MD, stephanie.sterling@nyulangone.org, New York University Langone Vaccine Center, and Division of Infectious Diseases and Immunology, Department of Medicine, New York University Grossman School of Medicine, New York, NY 10016

#### **University of Rochester Medical Center, Rochester, New York, Vaccine Training and Evaluation Unit (n = 89)**

Courtney Olson-Chen, MD, courtney\_olson-chen@urmc.rochester.edu, Department of Obstetrics and Gynecology, University of Rochester, Rochester, NY 14642

Angela R. Branche, MD, angela\_branche@urmc.rochester.edu, Division of Infectious Diseases, Department of Medicine, University of Rochester, Rochester, NY 14642

Ann R. Falsey, MD, ann\_falsey@urmc.rochester.edu, Division of Infectious Diseases, Department of Medicine, University of Rochester, Rochester, NY 14642

Erin Nowicki, erin\_nowicki@urmc.rochester.edu, Division of Infectious Diseases, Department of Medicine, University of Rochester, Rochester, NY 14642

#### **University of Illinois at Chicago, Chicago, Illinois, Subsite to Saint Louis University Vaccine Training and Evaluation Unit (n = 54)**

Richard M. Novak, MD, rmnovak@uic.edu, Division of Infectious Diseases, University of Illinois, Chicago, IL 60612

De-Ann Pillers, MD, PhD, pillersd@uic.edu, Section of Pediatric Neonatology, University of Illinois, Chicago, IL 60612

Joann Romano-Keeler, MD, jromanok@uic.edu, Section of Pediatric Neonatology, University of Illinois, Chicago, IL 60612

Alexis Braverman, MD, [abraverm@uic.edu](mailto:abraverm@uic.edu), Department of Obstetrics and Gynecology, University of Illinois, Chicago, IL 60612

#### **Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, Vaccine Training and Evaluation Unit (n = 27)**

Rebecca C. Brady, MD, [rebecca.brady@cchmc.org](mailto:rebecca.brady@cchmc.org), Cincinnati Children's Hospital Medical Center, and Division of Infectious Diseases, University of Cincinnati College of Medicine, Cincinnati, OH 45229

Emily A. DeFranco, DO, [defranee@ucmail.uc.edu](mailto:defranee@ucmail.uc.edu), Department of Obstetrics and Gynecology, University of Cincinnati College of Medicine, Cincinnati, OH 45267

Robert W. Frenck, Jr., MD, [robert.frenck@cchmc.org](mailto:robert.frenck@cchmc.org), Cincinnati Children's Hospital Medical Center, and Division of Infectious Diseases, University of Cincinnati College of Medicine, Cincinnati, OH 45229

Donna Cunha, RN, [donna.cunha@cchmc.org](mailto:donna.cunha@cchmc.org), Cincinnati Children's Hospital Medical Center, and Division of Infectious Diseases, University of Cincinnati College of Medicine, Cincinnati, OH 45229

Madison Minette, [minettmn@ucmail.uc.edu](mailto:minettmn@ucmail.uc.edu), Department of Obstetrics and Gynecology, University of Cincinnati College of Medicine, Cincinnati, OH 45267

#### **Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, Subsite to Vanderbilt University Vaccine Training and Evaluation Unit (n = 18)**

Jeffrey S. Gerber, MD, PhD, [gerberj@chop.edu](mailto:gerberj@chop.edu), Division of Infectious Diseases, Children's Hospital of Philadelphia, and University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 19146

Karen Puopolo, MD, PhD, [puopolok@chop.edu](mailto:puopolok@chop.edu), Division of Neonatology, Children's Hospital of Philadelphia, and University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 19146

Dustin Flannery, DO, MSCE, [flanneryd@chop.edu](mailto:flanneryd@chop.edu), Division of Neonatology, Children's Hospital of Philadelphia, and University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 19146

Krishna Patel, MS, [patelk21@chop.edu](mailto:patelk21@chop.edu), Children's Hospital of Philadelphia, Philadelphia, PA 19146

#### **Infectious Diseases Clinical Research Consortium Laboratory Operations Unit**

Christine M. Posavad, PhD, [cposavad@fredhutch.org](mailto:cposavad@fredhutch.org), Division of Vaccine and Infectious Disease, Fred Hutchinson Cancer Center, and Department of Laboratory Medicine and Pathology, University of Washington, Seattle, WA

#### **University of Maryland Laboratory (Binding Antibody)**

Marcela F. Pasetti, PhD, [mpasetti@som.umaryland.edu](mailto:mpasetti@som.umaryland.edu), Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD

Mallory C. Shriver, MSc, [mallory.shriver@som.umaryland.edu](mailto:mallory.shriver@som.umaryland.edu), Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD

Cheilon Bolanos, BA, [cheilon.bolanos@som.umaryland.edu](mailto:cheilon.bolanos@som.umaryland.edu), Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD

Jennifer Oshinsky, BS, [joshinsky@som.umaryland.edu](mailto:joshinsky@som.umaryland.edu), Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD

#### **Emory Vaccine Center Laboratory (Live Virus Neutralization Assay, Focus Reduction Neutralization Titer)**

Mehul S. Suthar, PhD, [mehul.s.suthar@emory.edu](mailto:mehul.s.suthar@emory.edu), Emory Vaccine Center, Yerkes National Primate Research Center, and Departments of Pediatrics and Microbiology and Immunology, Emory School of Medicine, Emory University, Atlanta, GA

Kathryn M. Moore, PhD, [kathryn.moore2@emory.edu](mailto:kathryn.moore2@emory.edu), Emory Vaccine Center, Yerkes National Primate Research Center, and Departments of Pediatrics and Microbiology and Immunology, Emory School of Medicine, Emory University, Atlanta, GA

Kelly E. Manning, MS, MPH, [kellymanning@emory.edu](mailto:kellymanning@emory.edu), Emory Vaccine Center, Yerkes National Primate Research Center, and Departments of Pediatrics and Microbiology and Immunology, Emory School of Medicine, Emory University, Atlanta, GA

Alberto Moreno, MD, [camoren@emory.edu](mailto:camoren@emory.edu), Emory Vaccine Center, Emory National Primate Research Center, and Division of Infectious Diseases, Department of Medicine, Emory University School of Medicine, Atlanta, GA

Bushra Wali, PhD, [b.wali@emory.edu](mailto:b.wali@emory.edu), Emory Vaccine Center, Yerkes National Primate Research Center, and Departments of Pediatrics and Microbiology and Immunology, Emory School of Medicine, Emory University, Atlanta, GA

#### **Seattle Children's Research Institute (Pseudovirus Neutralizing Assay)**

Rhea Coler, PhD, [rhea.coler@seattlechildrens.org](mailto:rhea.coler@seattlechildrens.org), Seattle Children's Research Institute, Seattle, WA 98109

Bryan Berube, PhD, [bryan.berube@seattlechildrens.org](mailto:bryan.berube@seattlechildrens.org), Seattle Children's Research Institute, Seattle, WA 98109

Zhiyi Zhu, PhD, [zhiyi.zhu@seattlechildrens.org](mailto:zhiyi.zhu@seattlechildrens.org), Seattle Children's Research Institute, Seattle, WA 98109

Rakhi D. Harne, PhD, [rakhi.harne@seattlechildrens.org](mailto:rakhi.harne@seattlechildrens.org), Seattle Children's Research Institute, Seattle, WA 98109

Valérie A. Reese, MS, [valerie.reese@seattlechildrens.org](mailto:valerie.reese@seattlechildrens.org), Seattle Children's Research Institute, Seattle, WA 98109

#### **Infectious Diseases Clinical Research Consortium Leadership**

Kathleen M. Neuzil, MD, MPH, [kneuzil@som.umaryland.edu](mailto:kneuzil@som.umaryland.edu), Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD 21201

### **Infectious Diseases Clinical Research Consortium Statistical and Data Science Unit**

Barbra A. Richardson, PhD, [barbrar@uw.edu](mailto:barbrar@uw.edu), Departments of Biostatistics and Global Health, University of Washington, and Division of Vaccine and Infectious Disease, Fred Hutchinson Cancer Center, Seattle, WA

Elizabeth R. Brown, ScD, [erbrown@fredhutch.org](mailto:erbrown@fredhutch.org), Departments of Biostatistics and Global Health, University of Washington, and Divisions of Vaccine and Infectious Disease, and Public Health Sciences, Fred Hutchinson Cancer Center, Seattle, WA 98109

### **Statistical Center for HIV/AIDS Research and Prevention**

So Hee (Vicky) Kim, [skim234@scharp.org](mailto:skim234@scharp.org), Statistical Center for HIV/AIDS Research and Prevention, Fred Hutchinson Cancer Center, Seattle, WA

Lauren Young, MPH, [lyoung@scharp.org](mailto:lyoung@scharp.org), Statistical Center for HIV/AIDS Research and Prevention, Fred Hutchinson Cancer Center, Seattle, WA

Wen-Min (Wendy) Hou, MPH, BSN, CCRP, [whou2@scharp.org](mailto:whou2@scharp.org), Statistical Center for HIV/AIDS Research and Prevention, Fred Hutchinson Cancer Center, Seattle, WA

### **Division of Microbiology and Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland**

Cristina V. Cardemil, MD, MPH, [cristina.cardemil@nih.gov](mailto:cristina.cardemil@nih.gov)

### **National Institute of Allergy and Infectious Diseases, National Institutes of Health, Rockville, Maryland**

Jeanna M. Piper, MD, [piperj@niaid.nih.gov](mailto:piperj@niaid.nih.gov)

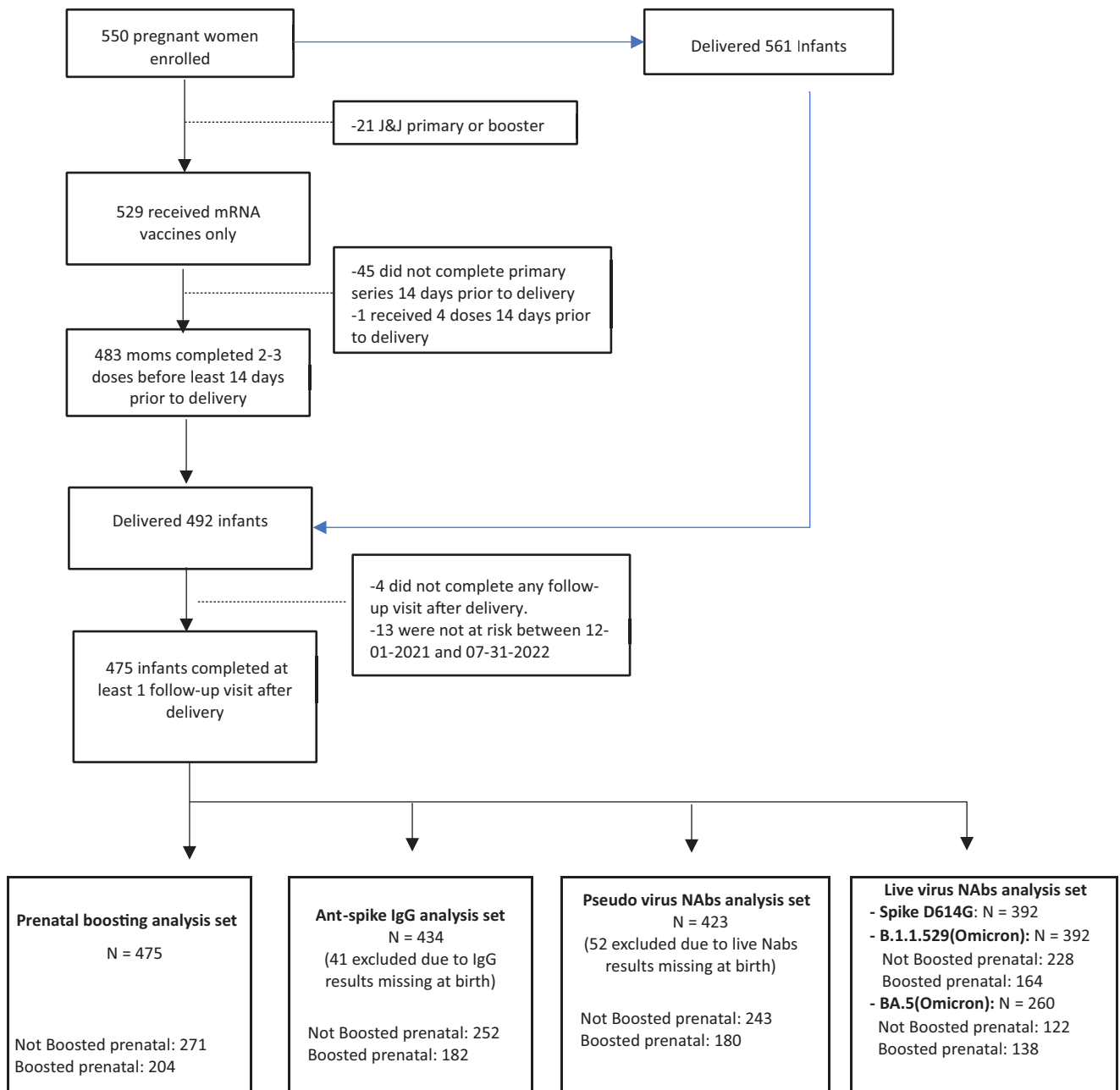
### **Fred Hutchinson Cancer Center**

Yi Cao, PhD, MS, [ycao3@fredhutch.org](mailto:ycao3@fredhutch.org), Fred Hutchinson Cancer Center, Seattle, WA 98109

Fei Gao, PhD, [fgao@fredhutch.org](mailto:fgao@fredhutch.org), Division of Vaccine and Infectious Disease, Fred Hutchinson Cancer Center, Seattle, WA 98109

### **FHI 360, Durham, North Carolina**

Joy Miedema, MPH, [jmiedema@fhi360.org](mailto:jmiedema@fhi360.org), FHI 360, Durham, NC



**SUPPLEMENTAL FIGURE 4**  
Participant flow diagram.

**SUPPLEMENTAL TABLE 3** Results of Cox model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Anti-Spike IgG Analysis Set With Maternal Boost

Anti-Spike IgG Analysis Set With Prenatal Boost	HR	95% CI	P
<b>Log10 anti-Spike IgG titer at delivery (infant, BAU per mL)</b>	0.47	0.15–1.44	.18
Primary series vaccine type (ref: Pfizer)	0.94	0.35–2.51	.90
Race (ref: white)	1.48	0.46–4.72	.51
Number of comorbidities	1.99	0.96–4.13	.06
Health care workers	1.65	0.53–5.15	.39
Maternal SARS-CoV-2 infection before second trimester	0.36	0.04–3.41	.37
Maternal SARS-CoV-2 infection during second–third trimester	0.59	0.12–3.03	.53
Mom's BMI	0.96	0.88–1.04	.30
Working from home (ref: No)			
Fully working from home	0.65	0.14–3.10	.59
Partly working from home	0.96	0.28–3.30	.95
Not applicable	0.83	0.07–9.21	.88
OSHA (ref: Low exposure risk)			
Medium exposure risk	0.46	0.12–1.71	.25
High exposure risk	0.37	0.09–1.53	.17
Not applicable	0.61	0.04–9.81	.73

Covariates of primary interest for interpretation are in bold. BAU, binding antibody units; HR, hazard ratio; OSHA, Occupational Safety and Health Administration; ref, reference.

**SUPPLEMENTAL TABLE 4** Results of Cox Model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Anti-Spike IgG Analysis Set Without Maternal Boost

Anti-Spike IgG Analysis Set Without Prenatal Boost	HR	95% CI	P
<b>Log10 anti-Spike IgG titer at delivery (infant, BAU per mL)</b>	0.77	0.34–1.75	.53
Primary series vaccine type (ref: Pfizer)	0.92	0.43–1.95	.83
Race (ref: white)	1.88	0.78–4.50	.16
Ethnicity (ref: Hispanic/Latino)	0.66	0.17–2.58	.55
Number of comorbidities	1.37	0.80–2.33	.25
Health care workers	1.55	0.61–3.93	.35
Maternal SARS-CoV-2 infection before delivery	0.39	0.08–1.98	.26
Maternal BMI	1.02	0.97–1.07	.51
Working from home (ref: No)			
Fully working from home	1.08	0.45–2.61	.86
Partly working from home	0.70	0.25–1.98	.50
Not applicable	0.79	0.24–2.53	.69

Covariates of primary interest for interpretation are in bold. BAU, binding antibody units; HR, hazard ratio; ref, reference.

**SUPPLEMENTAL TABLE 5** Results of Cox Model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Pseudovirus nAb Analysis Set With Maternal Boost

<b>Pseudovirus Analysis Set With Prenatal Boost</b>	<b>HR</b>	<b>95% CI</b>	<b>P</b>
<b>(Log10 pseudovirus nAbs – LLOQ)<sub>+</sub> at delivery</b>	0.49	0.20–1.20	.12
Primary series vaccine type (ref: Pfizer)	0.87	0.34–2.26	.78
Number of comorbidities	1.66	0.85–3.25	.14
Health care workers	1.93	0.64–5.80	.24
Working from home (ref: No)	0.39	0.04–3.77	.41
Fully working from home	0.59	0.11–3.11	.54
Partly working from home	—	—	—
Not applicable	0.75	0.16–3.53	.71
Maternal SARS-CoV-2 infection before second trimester	0.88	0.26–2.97	.84
Maternal SARS-CoV-2 infection during second–third trimester	0.57	0.05–6.44	.65
OSHA (ref: Low exposure risk)			
Medium exposure risk	0.43	0.12–1.60	.21
High exposure risk	0.35	0.09–1.40	.14
Not applicable	0.86	0.05–13.78	.91

Covariates of primary interest for interpretation are in bold. HR, hazard ratio; LLOQ, lower limit of quantification; OSHA, Occupational Safety and Health Administration; ref, reference. —, no participants were in this category in this model.

**SUPPLEMENTAL TABLE 6** Results of Cox Model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Pseudovirus nAb Analysis Set Without Maternal Boost

<b>Pseudovirus Analysis Set Without Prenatal Boost</b>	<b>HR</b>	<b>95% CI</b>	<b>P</b>
<b>(Log10 pseudovirus nAbs – LLOQ)<sub>+</sub> at delivery</b>	1.10	0.53–2.28	.80
Primary series vaccine type (Pfizer)	0.94	0.44–2.02	.88
Maternal age	1.01	0.93–1.09	.82
Ethnicity (ref: Hispanic/Latino)	0.72	0.18–2.81	.64
Number of comorbidities	1.39	0.82–2.34	.22
Health care workers	1.37	0.55–3.44	.50
Maternal SARS-CoV-2 infection before delivery	0.41	0.09–1.92	.26
Maternal BMI	1.01	0.96–1.06	.71
Working from home (ref: No)			
Fully working from home	1.06	0.44–2.57	.89
Partly working from home	0.72	0.26–2.02	.54
Not applicable	0.64	0.20–2.07	.45

Covariates of primary interest for interpretation are in bold. HR, hazard ratio; LLOQ, lower limit of quantification; ref, reference.

**SUPPLEMENTAL TABLE 7** Results of Cox Model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Live Virus nAb Analysis Set With Maternal Boost

<b>Live Virus Analysis Set With Prenatal Boosting</b>	<b>HR</b>	<b>95% CI</b>	<b>P</b>
<b>(Log10 live virus D614G nAbs – LLOQ)<sub>+</sub></b>	0.35	0.09–1.27	.11
Health care workers	1.07	0.29–3.94	.91
Maternal SARS-CoV-2 infection before second trimester	1.25	0.11–14.21	.86
Maternal SARS-CoV-2 infection during second–third trimester	0.96	0.17–5.37	.97
Maternal BMI	0.98	0.90–1.07	.71
Working from home (ref: No)			
Fully working from home	0.84	0.19–3.65	.81
Partly working from home	0.57	0.12–2.63	.47
Not applicable	2.06	0.27–15.96	.49

Covariates of primary interest for interpretation are in bold. HR, hazard ratio; LLOQ, lower limit of quantification; ref, reference.

**SUPPLEMENTAL TABLE 8** Results of Cox Model for Risk of Infant COVID-19 Infection (Self-Report and N Seroconversion) Including Participants in the Pseudovirus nAb Analysis Set Without Maternal Boost

Live Virus Analysis Set Without Prenatal Boost	HR	95% CI	P
<b>(Log<sub>10</sub> live virus D614G nAbs – LLOQ)<sub>+</sub></b>	0.65	0.24–1.73	.39
Ethnicity (ref: Hispanic/Latino)	1.78	0.39–8.26	.46
Health care workers	1.47	0.52–4.17	.46
Maternal SARS-CoV-2 infection before delivery	1.09	0.22–5.44	.92
Maternal BMI	1.00	0.94–1.07	.92
Working from home (ref: No)			
Fully working from home	1.38	0.49–3.94	.54
Partly working from home	0.84	0.26–2.70	.77
Not applicable	0.74	0.18–3.07	.68

Covariates of primary interest for interpretation are in bold. HR, hazard ratio; LLOQ, lower limit of quantification; ref, reference.