



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

## L39 SARS-CoV-2 surveillance in households with and without asthmatic/allergic children: The Human Epidemiology and Response to SARS-CoV-2 study (HEROS)



**Max Seibold, PhD<sup>1</sup>**, Camille Moore, PhD<sup>1</sup>, Jamie Everman<sup>1</sup>, Blake Williams<sup>1</sup>, James Nolin<sup>1</sup>, Ana Fairbanks-Mahnke<sup>1</sup>, Elizabeth Plender<sup>1</sup>, Bhavika Patel<sup>1</sup>, Samuel Arbes<sup>2</sup>, Leonard Bacharier, MD FAAAAI<sup>3</sup>, Casper Bendixsen<sup>4</sup>, Agustin Calatroni<sup>2</sup>, Carlos Camargo<sup>5</sup>, William Dupont<sup>3</sup>, Glenn Furuta, MD<sup>6</sup>, Tebeb Gebretsadik<sup>7</sup>, Rebecca Gruchalla, MD PhD FAAAAI<sup>8</sup>, Ruchi Gupta, MD MPH<sup>9</sup>, Gurjit Khurana Hershey, MD PhD FAAAAI<sup>10</sup>, Liza Murrison, PhD<sup>10</sup>, Daniel Jackson, MD FAAAAI<sup>11</sup>, Christine Johnson<sup>12</sup>, Meyer Kattan, MD<sup>13</sup>, Andrew Liu, MD FAAAAI<sup>6</sup>, Stephanie Lussier<sup>2</sup>, George O'Connor<sup>14</sup>, Katherine River-Spoljaric<sup>15</sup>, Wanda Phipatanakul, MD MS FAAAAI<sup>16</sup>, Marc Rothenberg, MD PhD FAAAAI<sup>17</sup>, Christine Serogy, MD FAAAAI<sup>18</sup>, Stephen Teach, MD<sup>19</sup>, Edward Zoratti, MD FAAAAI<sup>20</sup>, Alkis Togias, MD FAAAAI<sup>21</sup>, Patricia Fulkerson, MD PhD<sup>21</sup>, Tina Hartert, MD MPH<sup>3</sup>; <sup>1</sup>National Jewish Health, <sup>2</sup>Rho, Inc, <sup>3</sup>Vanderbilt University, <sup>4</sup>Marshfield Clinic, <sup>5</sup>Massachusetts General Hospital, <sup>6</sup>Children's Hospital Colorado, <sup>7</sup>Vanderbilt University Medical Center, <sup>8</sup>Univ. Texas Southwestern Medical Center, <sup>9</sup>Northwestern University Feinberg School of Medicine, <sup>10</sup>Cincinnati Children's Hospital Medical Center, <sup>11</sup>University of Wisconsin-Madison, <sup>12</sup>Henry Ford Health System, <sup>13</sup>Columbia University Medical Center, <sup>14</sup>Boston University School of Medicine, <sup>15</sup>Washington University School of Medicine, <sup>16</sup>Boston Children's Hospital, <sup>17</sup>Cincinnati Children's Hospital Medical Center, <sup>18</sup>University of Wisconsin, <sup>19</sup>Children's National Hospital, <sup>20</sup>Henry Ford Hospital, <sup>21</sup>NIAID/NIH.

**RATIONALE:** Whether children and people with asthma and allergic diseases are at increased risk for SARS-CoV-2 infection is not known. Neither is their role in household transmission.

**METHODS:** Biweekly nasal sample collections and weekly surveys were conducted to identify incident SARS-CoV-2 infections among children (<13 years) and teenagers (13-21 years) enrolled in asthma/allergic disease focused cohorts, and their household members, from May 2020-February 2021. Probability of subject/household infections and household transmissions were calculated using time-to-event analyses, and factors associated with infection and transmission risk using regression analyses.

**RESULTS:** Household (N=1,394) and subject (N=4,142) SARS-CoV-2 infection probability was 25.8% and 14.0%, respectively, and was similar for children (14.0%, CI:8.0-19.6%), teenagers (12.1%, CI:8.2-15.9%), and adults (14.0%, CI:9.5-18.4%). Infections were symptomatic in 24.5% of children, 41.2% of teenagers, and 62.5% of adults. Exposure to both symptomatic (aHR=87.39, CI:58.02-131.63) and asymptomatic (aHR=27.80, CI:17.16-45.03) infected household members was a risk factor for infection. Food allergy was associated with decreased infection risk (aHR=0.50, CI:0.32-0.81), but asthma was not (aHR=1.04, CI:0.73-1.46). Household infection risk was associated with attending in-person school (aHR=1.67, CI:1.09-2.57). Household secondary attack rate was 57.7%. Decreased risk of household transmission was associated with teen age, lower BMI, and lower viral load.

**CONCLUSIONS:** Asthma does not increase risk of SARS-CoV-2 infection, while food allergy is protective. SARS-CoV-2 infection risk in children is similar to that of teenagers and adults. SARS-CoV-2 transmission risk and secondary attack rate is much higher than previously estimated in households with children, likely driven by the high frequency of asymptomatic childhood infections.

## L40 Racial and Socioeconomic Differences in Perceived Quality of the Patient/Care Team Relationship Among Individuals with Asthma



**Sharmilee Nyenhuis, MD FAAAAI<sup>1</sup>**, Michael Foggs, MD FAAAAI<sup>2</sup>, Tonya Winders<sup>3</sup>, Donna Gardner, DrPH, RRT, RRT-NPS, FCCP, FAARC<sup>4</sup>, Marykate Nelson<sup>5</sup>, Jennifer Balmer<sup>5</sup>, Jeffrey Carter<sup>5</sup>, Laura Simone<sup>5</sup>; <sup>1</sup>University of Illinois at Chicago, <sup>2</sup>Advocate Medical Group, <sup>3</sup>Allergy & Asthma Network, <sup>4</sup>Asthma & Allergy Network, <sup>5</sup>PRIME Education.

**RATIONALE:** The patient/care team relationship can significantly influence health outcomes. This study explored whether racial/ethnic or socioeconomic factors are associated with the perceived quality of care team interactions in patients with asthma.

**METHODS:** Survey questions assessing patient perceptions of their asthma care teams on measures of trust, equality, empathy, and communication were developed by PRIME Education and reviewed by asthma experts prior to distribution. Between August-October 2021, surveys were emailed to 550 people nationwide by the Allergy & Asthma Network.

**RESULTS:** Surveys were completed by 212 individuals aged 6-74 years old. Half were female and the majority self-identified as Black (66%). Ninety-eight percent of respondents had health insurance coverage, with slight differences between races/ethnicities. Overall, non-White and publicly insured individuals perceived less-positive interactions with their care teams. Twenty-three percent of Blacks and 12% of Hispanics and American Indian/Alaskan Natives (vs. 6% of Whites), and 32% of publicly insured (vs. 10% of privately insured) individuals disagreed that their team provided fair medical advice. A similar trend was observed in perceptions of equal treatment/respect. Although patient-reported asthma symptoms and treatment satisfaction did not vary substantially between races/ethnicities or publicly/privately-insured groups, individuals perceiving equal treatment/respect from their care team were more likely to report well-controlled asthma symptoms (75%) and satisfaction with current therapy (86%) versus those not perceiving equal treatment/respect (29%).

**CONCLUSIONS:** Persons of color and publicly insured individuals generally perceive lower quality interactions with their care teams. Suboptimal patient/care team relationships appear to be associated with poor perceptions of asthma control and lower satisfaction with therapy.