

### [Declines in SARS-CoV-2 Transmission, Hospitalizations, and Mortality After Implementation of Mitigation Measures— Delaware, March–June 2020 \(MMWR\)](#)

**Bottom Line:** State-mandated stay-at-home orders and public mask mandates coupled with case investigations and contact tracing were associated with an 82% reduction in new COVID-19 cases, 88% reduction in hospitalizations, and 100% reduction in deaths in Delaware from late April–June 2020.

**Details:** This study examined the relationship between COVID-19 cases and public health interventions in Delaware between March–June 2020. During this time period, Delaware initiated case investigations of identified COVID-19 cases (starting March 11), a statewide stay-at-home order (March 24–June 1), a statewide public mask mandate (April 28), and contact tracing (May 12). In this period, from a peak in mid-April to June, new cases declined by 82%, hospitalizations by 88%, and mortality by 100%. This study also reported on case investigation and contact tracing during this same period. Of 9,762 newly identified COVID-19 cases, 6,527 (67%) were interviewed, and median time to interview from positive COVID-19 test was 8 days. Of those interviewed, 5,390 (83%) either refused to name contacts or could not recall contacts. Among 2,834 contacts reported, 882 were interviewed. Reasons for not interviewing contacts included no response to call attempts, no available phone number, and refusal to be interviewed.

#### **Key Takeaways:**

- A combination of state-mandated community mitigation efforts and routine public health interventions can reduce the occurrence of new COVID-19 cases, hospitalizations, and deaths.
- Barriers to contact tracing included delayed case interviews and refusal to disclose contacts, and may have limited opportunities for further mitigation.

### [Distinct Antibody Responses to SARS-CoV-2 in Children and Adults across the COVID-19 Clinical Spectrum \(Nature Immunology\)](#)

**Bottom Line:** In this study, adults and children had different antibody responses against SARS-CoV-2, regardless of disease severity.

**Details:** This study compared antibody responses against SARS-CoV-2 among 4 cohorts of patients (2 adult and 2 pediatric) with varying disease severity: adults recovered from mild COVID-19 and antibodies against SARS-CoV-2 (n=19); patients with severe COVID-19 and acute respiratory distress syndrome (ARDS) who had a lab-confirmed SARS-CoV-2 infection (n=13); pediatric patients with multi-system inflammatory syndrome (MIS-C) and antibodies against SARS-CoV-2 (n=16); and pediatric patients without MIS-C with current or previous SARS-CoV-2 infection (n=31). Antibodies against the virus' spike protein and nucleocapsid were evaluated using enrolled patients' blood samples. Adult patients in both adult cohorts had several types of antibodies against the spike protein (immunoglobulin G (IgG), immunoglobulin M (IgM), and immunoglobulin A (IgA) and nucleocapsid protein (IgG), though those in the severe disease/ARDS group had higher levels and variety of antibodies and neutralizing activity than the adult cohort with mild COVID-19. Children in both pediatric cohorts had similar antibody profiles: less types of antibodies against SARS-CoV-2 and predominantly IgG antibodies against the spike, and not the nucleocapsid, protein.

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Samples from children in both cohorts also indicated less activity to neutralize or block the virus compared to adults, suggesting a reduced protective response. While still unknown, it's possible that children's lower expression of angiotensin-converting enzyme 2 (ACE2), a viral receptor in airway cells, and/or a stronger innate immune response, may explain the study's findings.

### Key Takeaways:

- Findings suggest a distinct course of infection and immune response against SARS-CoV-2 in children versus adults, which may necessitate age-specific strategies for testing.

### [Impact of Non-Pharmaceutical Interventions on the Incidence of Respiratory Infections during the COVID-19 Outbreak in Korea: A Nationwide Surveillance Study \(CID\)](#)

**Bottom Line:** The implementation of non-pharmaceutical interventions in South Korea during the SARS-CoV-2 pandemic was associated with a significant reduction in the occurrence of chickenpox, mumps, and respiratory viral infections, as compared to previous years.

**Details:** This study sought to understand whether the implementation of non-pharmaceutical interventions (NPIs) in South Korea during the SARS-CoV-2 pandemic was associated with a decline in other viral infections compared to previous years; specifically, chickenpox, mumps, invasive pneumococcal disease (IPD), scarlet fever, and pertussis. Data came from a national notifiable disease database and respiratory virus sample surveillance confirmed by polymerase chain reaction (PCR). Infections during Feb-July 2020 were compared to predicted incidences based on an autoregressive model and the Jan 2016-Jan 2020 average total occurrence in the same months (also known as the mean cumulative incidence, or Culs). Actual Culs of chickenpox and mumps during Feb-July 2020 were 36.4% and 63.4%, respectively, of predicted incidences. While all included respiratory viral infections had a statistically significant reduction in Culs from Feb-July compared to mean Culs during the same months in previous years, reductions were highest for scarlet fever (15.8%), pertussis (34.2%) and chickenpox (38.4%). Further analysis showed an age-specific effect of NPIs on respiratory infection incidences during Feb-July 2020; specifically, incidence of chickenpox was substantially lower for all age groups, and incidence of mumps was lower in <18 year olds but not in adults. Lastly, looking at viral samples, the number that tested positive for parainfluenza virus, rhinovirus, bocavirus, and metapneumovirus were significantly lower from Feb-July 2020.

### Key Takeaways:

- Incidence of other respiratory viral infections declined significantly following implementation of NPIs for SARS-CoV-2, though trends varied by age.
- More research is needed to assess whether observed trends continue during winter months.