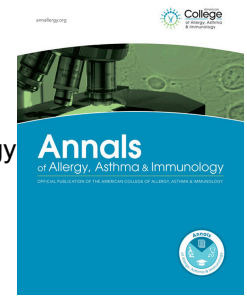
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.



U.S. Public Health Resources for COVID-19 That Are Relevant to Allergy/Immunology

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U.S. Public Health Resources for COVID-19 That Are Relevant to Allergy/Immunology

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U.S. public health responses to emerging infections have involved public health agencies, healthcare systems, community leaders, and others. This Perspective will focus on providing an overview of U.S. public health resources (as of August 2020) related to the coronavirus disease 2019 (COVID-19) pandemic that might be most relevant to allergists/immunologists.

A novel coronavirus was first reported in January 2020.[1] This virus, subsequently named SARS-CoV-2, is thought to spread mainly from person to person through respiratory droplets among people who are in close contact (within about 6 feet).[1,2] SARS-CoV-2 infection can result in mild to severe symptoms, which can include but are not limited to fever, chills, cough, difficulty breathing, fatigue, body aches, headache, new loss of taste or smell, sore throat, nasal congestion, rhinorrhea, nausea, vomiting, or diarrhea. Among >1.3 million laboratory-confirmed, adult and pediatric COVID-19 cases reported in the United States during January 22–May 30, 2020, 14% of cases were hospitalized, 2% were admitted to an intensive care unit, and 5% died.[3] Limited available data suggest that among adults with severe COVID-19, dysregulated innate and adaptive immune responses contribute to host tissue damage.[4] Clinical guidance is available for managing COVID-19 (e.g., https://www.covid19treatmentguidelines.nih.gov/ and Resource 1 in Table 1).

The overall goal of U.S. public health actions in response to the COVID-19 pandemic has been to reduce community spread of SARS-CoV-2 in this country. The federal government has worked closely with state, local, tribal, and territorial partners, other public health partners, and others to respond to this public health threat.[1-3] As one of the federal agencies involved in this work, the Centers for Disease Control and Prevention (CDC, with over 70 years of experience

responding to public health threats) has taken multiple actions to respond to this pandemic, including: advising communities and businesses about how to lower the risk of COVID-19 exposure and spread (e.g., Resource 8 in Table 1); providing technical assistance to state and local jurisdictions on surveillance data collection, contact tracing, and outbreak investigation[1–3]; and publishing guidance documents for healthcare providers and others on subjects like infection prevention and control (IPC), clinic preparedness for COVID-19 (e.g., Resource 2 in Table 1), and personal protective equipment supply planning (e.g., Resource 3 in Table 1).[1]

CDC actions to support healthcare providers, health systems, and first responders have included: developing guidance for and conducting outreach to clinical and hospital professional organizations to prepare health systems to treat patients (e.g., Resources 1–5 in Table 1); staffing CDC's Clinician On-Call Center, which supported healthcare personnel working to prevent, detect, and respond to COVID-19 early in this pandemic; and closely working with healthcare facilities and providers to reinforce IPC principles. Other CDC-recommended practices implemented by healthcare facilities and providers to reduce the spread of COVID-19 include but are not limited to actively screening everyone for fever and symptoms of COVID-19 before they enter a healthcare facility, and encouraging patients and visitors to be wearing their own cloth face coverings upon arrival to the healthcare facility (Resources 4–5 in Table 1).

A CDC resource potentially relevant to allergists/immunologists is COVIDView (Resource 6 in Table 1), a weekly summary and analysis of testing and mortality for COVID-19-like illness and influenza-like illness nationwide. Prior hospitalization data in COVIDView have included information on asthma and immune suppression, medical conditions often managed by

allergists/immunologists. CDC has produced information for healthcare providers about management of patients with asthma during the COVID-19 pandemic (Resource 7 in Table 1). CDC resources for the public (available in multiple languages) include information for patients and communities served by allergists/immunologists (e.g., patients with immune suppression or moderate to severe asthma) on how to reduce the risk of COVID-19 exposure and spread, as well as how people with moderate to severe asthma can reduce their risk of asthma symptoms triggered by exposure to cleaning and disinfecting products (Resources 8–10 in Table 1).

A feature of the COVID-19 pandemic that may interest allergists/immunologists is a multisystem inflammatory syndrome in children (MIS-C) temporally associated with COVID-19.[5] Many pediatric patients with this hyperinflammatory syndrome have demonstrated signs and symptoms of Kawasaki disease, including fever and mucocutaneous involvement. Not all children have had similar symptoms; other clinical presentations of MIS-C have more closely resembled macrophage activation syndrome, secondary hemophagocytic lymphohistiocytosis, or toxic shock syndrome.[5] MIS-C can be life-threatening and may begin weeks after a child is infected with the virus that causes COVID-19.[5] In some cases, children with MIS-C may not have been diagnosed with or shown symptoms of COVID-19.[5] On May 14, 2020, CDC released a Health Alert Network Advisory on MIS-C, which included a case definition for this new syndrome (Resource 12 in Table 1). Other clinician-oriented activities to address MIS-C include a CDC-led, informational call that was recorded and is now publicly available (Resource 13 in Table 1). CDC investigators are assessing reported cases and children's health outcomes to try to learn more about specific risk factors for MIS-C, how the illness progresses in children, and how to better identify MIS-C and distinguish it from similar illnesses (Resource 14 in Table 1).

Everyone can do their part to help prepare for, prevent, and respond to an emerging public health threat like COVID-19. For example, allergists/immunologists can implement IPC practices in their healthcare facilities to reduce the spread of SARS-CoV-2 (see Resource 4–5 in Table 1). Also, allergists/immunologists can continue to provide high-quality patient care to maintain optimal control of medical conditions such as asthma; CDC's set of strategies for asthma (known as "EXHALE"; see Resource 11 in Table 1) can help allergists/immunologists work with their communities to control this disease. Moreover, all healthcare providers, including allergists/immunologists, who have cared for or are caring for patients younger than 21 years old meeting MIS-C criteria should report suspected cases to their local, state, or territorial health department (see Resource 12 in Table 1).

Like public health responses to prior emerging infections, public health actions to respond to the COVID-19 pandemic have been continuously refined as this pandemic has evolved. Sustained and coordinated efforts can reduce the spread of SARS-CoV-2 within the United States.[2]

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Table 1. Selected CDC Resources about Coronavirus Disease 2019 (COVID-19), Asthma, or Multisystem Inflammatory Syndrome in Children (MIS-C), Relevant to Allergists/Immunologists and Their Patients*

Selected resources about COVID-19, for allergists/immunologists
1) **Interim Clinical Guidance for Management of Patients with Confirmed COVID-19**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html This interim guidance is for clinicians caring for patients with confirmed infection with SARS-CoV-2, the virus that causes COVID-19.
2) **Get Your Clinic Ready for COVID-19**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinic-preparedness.html This webpage has steps healthcare providers can take to prepare their clinics for COVID-19.
3) **Personal Protective Equipment (PPE) Burn Rate Calculator**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html The PPE Burn Rate Calculator can help healthcare providers and facilities plan and optimize the use of PPE for response to COVID-19. It is available as a spreadsheet and as a mobile app.
4) **Guidance for U.S. Healthcare Facilities about COVID-19**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/us-healthcare-facilities.html This webpage contains infection control guidance for ambulatory care settings, hospitals, and other types of healthcare facilities.
5) **Interim Infection Prevention and Control (IPC) Recommendations for Healthcare Personnel During the COVID-19 Pandemic**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html This guidance is applicable to all U.S. healthcare settings and includes recommended IPC practices for routine healthcare delivery during the COVID-19 pandemic, as well as recommended IPC practices when caring for a patient with suspected or confirmed SARS-CoV-2 infection.
6) **COVIDView: A Weekly Surveillance Summary of U.S. COVID-19 Activity**, https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview This webpage includes information on previous laboratory-confirmed, COVID-19-associated hospitalizations in select U.S. counties, as well as the presence of asthma and immune suppression among these hospitalizations.
7) **Clinical Questions about COVID-19: Questions and Answers, Patients with Asthma**, https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Patients-with-Asthma This webpage has answers to some frequently asked questions received from clinicians about medical management of patients with asthma during the COVID-19 pandemic.

Selected resources about COVID-19 or asthma, for patients and communities served by allergists/immunologists

The following webpages include options to read the information in multiple languages.

8) **COVID-19: K-12 Schools and Child Care Programs, FAQs for Administrators**, **Teachers, and Parents**,
https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/schools-faq.html
This webpage includes answers to some frequently asked questions about use of asthma medication and peak flow meters at school, during the COVID-19 pandemic.

9) **COVID-19: People with Certain Medical Conditions**,
https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fgroups-at-higher-risk.html
This webpage includes information for people who have moderate to severe asthma or are immunocompromised (e.g., because of immune deficiency or use of corticosteroids) on how to reduce their risk for severe illness from COVID-19. Also, this resource discusses how people with moderate to severe asthma can reduce their risk of asthma attacks triggered by exposure to cleaning and disinfecting products.

10) **COVID-19: What to Do if You Are Sick**,
https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html
This webpage includes information for people who are sick with COVID-19 or think they might have COVID-19 on when to seek emergency medical attention, steps to help prevent spread of COVID-19 when they are sick, and when it's safe to be around others after being sick with COVID-19.

11) **EXHALE: A Technical Package to Control Asthma**,
https://www.cdc.gov/asthma/pdfs/EXHALE_technical_package-508.pdf
This document describes a group of strategies, which, based on the best available evidence, can improve asthma control and reduce health care costs. It is intended as a resource to inform decision-making in communities, organizations, and states.

Selected resources about MIS-C, for allergists/immunologists

12) **Health Alert Network Advisory on Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19**,
https://emergency.cdc.gov/han/2020/han00432.asp
This official CDC Health Advisory includes a case definition for MIS-C and recommendations for healthcare providers who have cared for or are caring for patients who meet MIS-C criteria.

13) **Clinician Outreach and Communication Activity (COCA) Call "Multisystem Inflammatory Syndrome in Children (MIS-C) Associated with COVID-19"**,
https://emergency.cdc.gov/coca/calls/2020/callinfo_051920.asp
COCA prepares clinicians to respond to emerging health threats and public health emergencies by communicating relevant, timely information. During this recorded COCA call, clinicians can learn about the clinical characteristics of MIS-C, how cases have been

diagnosed and treated, and how clinicians are responding to cases associated with COVID-19.

14) **Health Department-Reported Cases of MIS-C in the United States**, https://www.cdc.gov/mis-c/cases/index.html
This webpage includes regularly updated data about cases of MIS-C reported by health departments.

CDC, Centers for Disease Control and Prevention; COCA, Clinician Outreach and Communication Activity; COVID-19, Coronavirus Disease 2019; IPC, infection prevention and control; MIS-C, multisystem inflammatory syndrome in children; PPE, personal protective equipment.

* As more information about COVID-19 and MIS-C becomes available, CDC will update its website pages accordingly.