
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.

Ann Allergy Asthma Immunol 126 (2021) 316–318

Contents lists available at ScienceDirect

Perspective

# US public health resources for coronavirus disease 2019 that are relevant to allergy-immunology

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ARTICLE INFO

*Article history:*
Received for publication August 12, 2020.
Accepted for publication August 20, 2020.

US public health responses to emerging infections have involved public health agencies, health care systems, community leaders, and others. This Perspective focuses on providing an overview of the US 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 severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is thought to spread mainly from person to person through respiratory droplets among people who are in close contact (within approximately 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 greater than 1.3 million laboratory-confirmed adult and pediatric COVID-19 cases reported in the United States during January 22, 2020 to May 30, 2020, 14% of the 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 (eg, https://www.covid19treatmentguidelines.nih.gov/ and resource 1 in Table 1).

The overall goal of the US 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, 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 more than 70 years of experience responding to public health threats) has taken multiple actions to respond to this pandemic, including advising communities and businesses regarding how to lower the risk of COVID-19 exposure and spread (eg, 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 health care providers and others on subjects such as infection prevention and control (IPC), clinic preparedness for COVID-19 (eg, resource 2 in Table 1), and personal protective equipment supply planning (eg, resource 3 in Table 1).[1]

The CDC's actions to support health care providers, health systems, and first responders have included the following: (1) developing guidance for and conducting outreach to clinical and hospital professional organizations to prepare health systems to treat patients (eg, resources 1-5 in Table 1); (2) staffing CDC's Clinician On-Call Center, which supported health care personnel working to prevent, detect, and respond to COVID-19 early in this pandemic; and (3) closely working with health care facilities and providers to reinforce IPC principles. Other CDC-recommended practices implemented by health care 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 health care facility and encouraging patients and visitors to wear their own cloth face coverings on arrival to the health care facility (resources 4-5 in Table 1).

A CDC resource potentially relevant to allergists-immunologists is COVIDView (resource 6 in Table 1), which is a weekly summary and analysis of testing and mortality for COVID-19–like illness and influenza-like illness nationwide. Previous hospitalization data in COVIDView have included information on asthma, immune suppression, and other medical conditions often managed by allergists-immunologists. In addition, CDC has produced information for health care providers regarding the management of patients with asthma during the COVID-19 pandemic (resource 7 in Table 1).

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**Disclosures:** The author has no conflicts of interest to report.
**Funding:** The author has no funding sources to report.

https://doi.org/10.1016/j.anai.2020.08.023
1081-1206/Published by Elsevier Inc. on behalf of the American College of Allergy, Asthma & Immunology.

**Table 1**
Selected CDC Resources About Coronavirus Disease 2019, Asthma, or Multisystem Inflammatory Syndrome in Children that are 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 health care providers can take to prepare their clinics for COVID-19.
3. PPE burn rate calculator, https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html. The PPE burn rate calculator can help health care providers and facilities plan and optimize the use of PPE for the response to COVID-19. It is available as a spreadsheet and as a mobile app.
4. Guidance for US health care 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 health care facilities.
5. Interim IPC recommendations for health care personnel during the COVID-19 pandemic, https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html. This guidance is applicable to all US health care settings and includes recommended IPC practices for routine health care 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 US 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 US counties, and 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 the 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 webpages in this section 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 the use of asthma medication and peak expiratory flow rate 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 (eg, because of immune deficiency or use of corticosteroids) on how to reduce their risk for severe illness from COVID-19. In addition, 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 the spread of COVID-19 when they are sick, and when it is 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 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 health care providers who have cared for or are caring for patients who meet the MIS-C criteria.
13. COCA call on "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.

Abbreviations: CDC, Centers for Disease Control and Prevention; COCA, Clinician Outreach and Communication Activity; COVID-19, coronavirus disease 2019; FAQ, frequently asked questions; IPC, infection prevention and control; K-12, from kindergarten to 12th grade; MIS-C, multisystem inflammatory syndrome in children; PPE, personal protective equipment.
NOTE. As more information about COVID-19 and MIS-C becomes available, CDC will update its website pages accordingly.

CDC resources for the public (available in multiple languages) include information for patients and communities served by allergists-immunologists (eg, patients with immune suppression or moderate to severe asthma) on how to reduce the risk of COVID-19 exposure and spread and 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 the multisystem inflammatory syndrome in children (MIS-C) temporally associated with COVID-19.[5] Many pediatric patients with this hyperinflammatory syndrome have presented 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 as having or presented symptoms for 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 on the 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 health care facilities to reduce the spread of SARS-CoV-2 (resources 4-5 in Table 1). Moreover, 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; resource 11 in Table 1) can help allergists-immunologists work with their communities to control this disease. In addition, all health care providers, including allergists-immunologists who have cared for or are caring for patients younger than 21 years old who meet the MIS-C criteria

should report suspected cases to their local, state, or territorial health departments (resource 12 in Table 1).

Like public health responses to previous 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]

## Acknowledgment

The author thanks Dr Elizabeth Swedo at the Centers for Disease Control and Prevention for her contribution to this article.

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