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# Introduction



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Coronavirus disease 2019 (COVID-19), the disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was declared a pandemic by the World Health Organization on March 11, 2020. As of May 28, 2020, there were nearly 1.7 million confirmed COVID-19 cases in the United States and more than 100,000 deaths.<sup>1</sup> This unprecedented worldwide crisis has created numerous challenges for existing health care systems, but it has also spurred innovation. Before the COVID-19 pandemic, Mayo Clinic had embarked on its strategic vision leading to 2030, named *Bold Forward*, which encompasses strategies to *cure*, *connect*, and *transform* health care. Early alignment with these 3 strategies has allowed Mayo Clinic to be more effective in responding to the COVID-19 pandemic.

In January 2020, Mayo Clinic activated its Hospital Incident Command System across all locations in anticipation of a substantial surge in COVID-19 cases. Between February and May of 2020, task forces and initiatives were created and implemented to guide, prepare, and support the institution during this unprecedented crisis.

In this special series of articles, we describe 21 of the various Mayo Clinic initiatives and responses to COVID-19 (Table). One article describes the necessary elements of an effective hospital command center and the system-wide response to the pandemic. Another describes changes in local and federal regulations that served as catalysts for Mayo Clinic to provide home monitoring of patients with COVID-19 and to substantially increase telemedicine options for virtual visits. The use of enhanced prediction analytics and artificial intelligence has helped define our response

and guide resource utilization and prioritization. Those tactics are described along with other prevention strategies, including requirements for personal protective equipment. It also became increasingly apparent in the preparedness phase that we needed proper diagnostic stewardship for testing utilization as well as testing strategies to improve prevention and treatment of COVID-19. Our practice now uses artificial intelligence and smart tools for contact tracing of exposed health care workers. Mayo Clinic has also established a virtual medical team and other services to support patients with COVID-19. New workflows and safety pathways have been created in many clinical areas, especially in the emergency department, intensive care units, outpatient practices, and surgical and procedural practices. These new teams and workflows are described in the articles.

Task forces were formed and programs organized to engage divisions and department chairs as needs became evident. Research studies were designed to address gaps in our knowledge of and therapies for COVID-19, ranging from studies in the basic sciences to several large clinical trials. During the crisis, Mayo Clinic halted all elective and semielective procedures, which resulted in a backlog of patients without COVID-19 who need care. In these articles, strategies are shared that allowed Mayo Clinic to safely reactivate its large, integrated multispecialty practice (both the inpatient and outpatient services) during this “new normal” state. Novel educational interventions, including various types of virtual interactions, were quickly implemented to ensure that we continued to deliver high-quality educational experiences for our graduate students,



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**TABLE. Mayo Clinic Strategies for COVID-19**

1. Elements of an Effective Incident Command Center
2. Analytics and Prediction Modeling
3. Precautions, Utilization of Personal Protective Equipment, and Conservation Strategies
4. Revisiting the Safety of Health Care Workers
5. Diagnostic Stewardship
6. Community-Based Drive-Through and Walk-Through Testing Centers
7. Clinical Guidance and the Delivery of Care
8. Rapid Appraisal System of COVID-19 Medical Information
9. Leveraging Existing Strategies of Medication Stewardship to Preserve and Appropriately Utilize Critical Supplies
10. Telemedicine Consultations and Follow-up of Patients With COVID-19
11. Creating Successful Emergency Department and Intensive Care Unit Team Dynamics
12. Role of the Administrative Partner and the Physician-Administrator Partnership
13. Revamping of Inpatient Care for Patients Without COVID-19 During the Pandemic
14. Revamping of Outpatient Care for Patients Without COVID-19 During the Pandemic
15. Engaging and Empowering the Front Lines During the COVID-19 Outpatient Practice Reactivation
16. Research Response to SARS-CoV-2/COVID-19
17. Strategic Approaches for Promoting Resiliency of Health Care Workers
18. Community Engagement With Vulnerable Populations
19. Avoiding a Medical Education Quarantine During the Pandemic
20. Health Care After the COVID-19 Pandemic and the Influence of Telemedicine
21. The Silver Lining for Health Care During and After the Pandemic

COVID-19 = coronavirus disease 2019; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

residents, and fellows when their in-person clinical rotations were temporarily suspended. The articles also highlight how Mayo Clinic is reaching out to our neighboring communities during this pandemic. Importantly, we will discuss major lessons learned thus far around rapid change management strategies, effective communication, acceleration of research protocols, and innovation during the COVID-19 crisis.

We hope that this series of articles will be useful to you and to your organizations during this and any future pandemic or other extremely challenging health care situations.

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