COMMENTARY

Chronic Disease Management in the COVID-19 Era

Jacob B. Mirsky, MD; and Daniel M. Horn, MD

The coronavirus disease 2019 (COVID-19) pandemic is leading to a rapid transition away from in-person ambulatory care. Almost immediately, virtual and asynchronous care delivery by outpatient providers has become the new normal. Health systems around the country are reimagining how they will effectively manage chronic diseases in a COVID-19 era when the status quo of serial in-person visits to brick-and-mortar health care facilities will no longer be feasible. New approaches to virtual and asynchronous chronic disease management are thus urgently needed to prevent large-scale sequelae of poorly controlled chronic diseases. We envision a new and promising chronic disease care delivery model. Real-time clinical registries will enable sophisticated identification and monitoring of high-risk and rising-risk patients. Care will be delivered to those patients via a range of synchronous and asynchronous virtual platforms that overcome social and economic barriers to access. Finally, health systems will leverage the power of social networks to facilitate healthy behavior change.

We outline a potential application of this model using hypertension management as a paradigm. At our institution, we struggled to control blood pressure in 30% of our patients with hypertension before COVID-19,[1] and we expect that post–COVID-19 hypertension control will be substantially worse. Many of the patients with poor hypertension control belong to vulnerable populations in which limited access to outpatient care, adverse social determinants of health, and unhealthy behaviors drive chronic disease development and progression. The COVID-19 pandemic will exacerbate all of these factors, further threatening the health of our country in the process. Given the ways in which COVID-19 is rapidly changing our health care system, now is the time for innovation.

The initial step for tackling chronic disease in the COVID-19 era is the development of a real-time clinical registry to identify and monitor high-risk and rising-risk patients. Health systems can easily build or buy a clinical hypertension registry that performs constant surveillance of blood pressure control, tracks current medication prescriptions and comorbidities, and analyzes appointment data across an entire patient population. Registries can also integrate additional data points that are crucial for effective hypertension management, such as social determinants of health (including unstable housing and food insecurity), unhealthy behaviors, and other secondary contributors. We have built such a registry at our health system that is managed by a dedicated team of population health coordinators who serve as the "air traffic controllers" for the hundreds of thousands of data elements contained within the registry. The registry offers communication tools to bulk-assign tasks to care team members, perform direct patient outreach, place referrals, and order relevant laboratory tests and diagnostic tests for thousands of patients simultaneously. Registries can thus combine biometric and socioeconomic data to allow for a highly sophisticated level of targeting of services and resources to patients in need, such as those with poorly controlled hypertension.

The second step in effective COVID-19–era chronic disease management is the development of synchronous and asynchronous virtual platforms that overcome social and economic barriers to access. For hypertension management, health systems can readily distribute Bluetooth-enabled blood pressure cuffs that synchronize with the electronic health record.[2] The ability to monitor home blood pressure readings can then be combined with asynchronous questionnaire-based electronic visits that are delivered to patients directly on their smartphones to enable highly efficient ambulatory medication titration.[3] Nonlicensed care navigators can work with pharmacist-driven algorithms to rapidly bring patients' blood

TAKEAWAY POINTS

Coronavirus disease 2019 (COVID-19) mandates that health care systems develop effective digital tools for chronic disease management.

- Real-time clinical registries can be built or purchased and are the key component of effective population-wide surveillance for chronic disease management.
- Myriad synchronous and asynchronous virtual care delivery tools can readily reduce the need for in-person visits for routine chronic disease management.
- Telehealth interventions that focus on lifestyle change and leverage the power of social networks, such as virtual group visits, will allow for effective chronic disease management in the COVID-19 era.

pressures to goal.[4] Additional interactions relying on video visits and text message–based coaching and other telemedicine platforms can greatly expand the health care system's reach in this digital age. Most important, because these tools are all virtual and can be available in multiple languages on smartphones, tablets, and computers, none require in-person office visits. They are just as available to a line cook cared for by a community health center as they are to a corporate executive participating in concierge medicine.

The final area of focus for COVID-19–era big data tools for chronic disease management involves harnessing the power of virtual social networks to support critical healthy lifestyle changes that form the bedrock of chronic care.[5] Although many companies and platforms are succeeding in bringing people together to promote health, now more than ever, health systems are missing out on the opportunity to build healthy lifestyle–oriented social networking applications that prevent disease and save lives. Health systems are uniquely positioned to do this effectively, given their expertise in managing chronic diseases, developing longitudinal patient relationships, and analyzing robust health data. Health systems could offer patients with hypertension the opportunity to join virtual group visits that focus on lifestyle change and healthy habits with like-minded peers who also have hypertension. These virtual groups could be facilitated by physicians or allied health professionals and allow patients to engage in serial discussions about their progress via ongoing virtual meetings, group chats, and asynchronous message boards. Patient groups could work with their virtual group leaders to set both individual and collective achievement goals, and group leaders could remain available to patients to ensure patient comprehension of their individualized management plans. The virtual group visit platform could also facilitate connections with local organizations and commercial platforms that offer resources on fitness, mindfulness, self-care, and mental health, as well as social services when needed.

Implementing these concepts will not be easy, especially with the dynamic shifts taking place in our economy and health care system. Each of these solutions faces myriad regulatory and compliance hurdles around payment, patient confidentiality, and human factors. They will also require substantial capital investment. These ideas require a fundamental reimagining of what a health system is obliged to deliver to patients with chronic diseases. At the same time, these ideas are aligned with the digitally connected lives our patients are already collectively living, as well as the ongoing transition of the health care system toward value-based care. Most important, these ideas may allow health care systems to offer excellent chronic disease care to any individual with a smartphone. If health systems build these technological solutions with an eye toward equity in care delivery, they could serve to mitigate deeply engrained disparities in care. In short, this is what patients want and what society asks of the health care system, and it is potentially a means to overcoming inequity. This vision is achievable, and when we commit to achieving it, we will move closer to successfully caring for noncommunicable, lifestyle-dependent chronic diseases in the COVID-19 era. ■

Author Affiliations: Division of General Internal Medicine, Massachusetts General Hospital (JBM, DMH), Boston, MA; Harvard Medical School (JBM, DMH), Boston, MA.

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Address Correspondence to: Jacob B. Mirsky, MD, Division of General Internal Medicine, Massachusetts General Hospital, 300 Ocean Ave, Revere, MA 02151. Email: jmirsky@mgh.harvard.edu.

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