



Robots, Chatbots, AI: Accelerating Virtual Health Capabilities for COVID-19

Authors: Mackenzie Horne, Steve Levin, Ryan Bertram, Bret Anderson and Roger Ray, MD

Published March 11, 2020

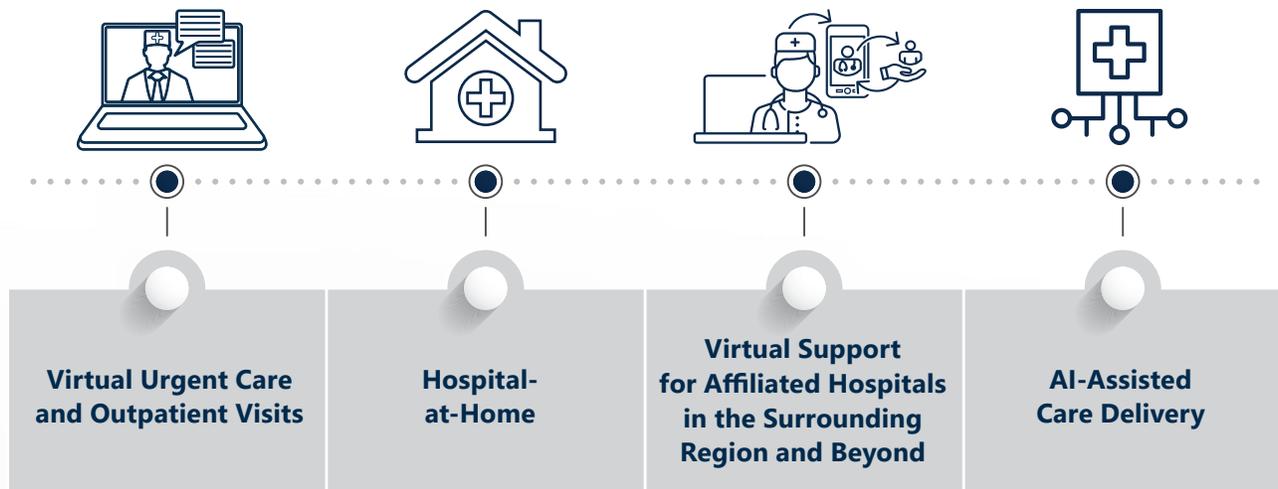
COVID-19 may exacerbate both access and economic challenges for academic and community health systems by potentially crowding out non-COVID-19 patients and discouraging them from utilizing necessary services and capabilities. While health systems seek to accommodate and respond to new demands directly related to COVID-19, they may also experience declines in volume of care for non-COVID-19 issues. This situation should provide the impetus for all health systems to significantly expand virtual health capabilities so that patients can be monitored and treated at affiliated hospitals, at nursing homes and at home, where possible, to avoid core tertiary hospitals being deluged with COVID-19 patients. COVID-19 has shifted health systems' expansion of virtual health from an "optional" or longer-term play to an immediate and crucial priority. By taking this vital step, health system leaders will help contain COVID-19 exposure in healthcare settings and expand capacity for non-COVID-19 patients to ensure they do not get crowded out.



Most health systems have used virtual health in targeted areas, such as tele-stroke and some focused virtual visit initiatives; however, due to reimbursement constraints and inconsistent physician support and adoption, few have fully embraced or invested in these new care models and the supporting infrastructure in a manner which harnesses their true potential. Now, health systems must determine how to ramp up these capabilities quickly for the possibility that COVID-19 patients may overwhelm their urgent care centers, EDs and inpatient beds, resulting in other patients being unable or unwilling to use health system facilities for lack of capacity or fear of infection. Virtual health platforms help providers manage the risk of infection for their own staff, clinicians and non-clinicians alike, at acute care sites, while also managing the use of personal protective equipment, which has quickly become in short supply at many provider sites.

Recognizing the importance of expanding access to virtual health, the House bill signed into law on March 4, 2020 provides emergency funding for COVID-19 and includes a provision called Telehealth Services During Certain Emergency Periods Act of 2020. It allocates \$500 million of new funding for Medicare patients seeking telehealth services. State governments and private insurers are also exploring options to ensure coverage for affected patients, and the extent to which these initiatives will include or expand reimbursement for virtual modalities is beginning to emerge. Aetna recently announced it will waive copays for all virtual health visits through CVS' Minute Clinic virtual portal for the next three months — whether or not the virtual visit is for COVID-19 symptoms.¹

An era of healthcare delivery disruption has begun as providers are forced to re-think their access, triage and care strategies given the limitations of their traditional delivery models, which have centered on brick-and-mortar settings for care. Now is the time to act and make significant moves toward virtual health. The minimum first step for most health systems is rapid provision of teleconsultation with system experts in diagnostics, infectious disease, epidemiology, pulmonology and critical care. Additional capabilities that academic and community health systems need to rapidly develop, deploy and scale include:



- 1. Virtual Urgent Care and Outpatient Visits:** A few health systems have developed virtual urgent care initiatives over the past several years to provide an alternative to the ED for low-acuity patients and to earn margins on patients willing to pay for these extended hours and convenient services. These programs also help to better manage patient flows to acute care facilities by, in essence, setting up a virtual triage. Some health systems also provide video visits for post-op patients to reduce travel to physician offices. AI-driven chatbots are lower-cost alternatives than video visits and can be valuable digital tools to assist with patient triage as well. These capabilities will need to be dramatically expanded to serve potentially infected patients as well as keep non-infected patients from risk of community transmission.

AmericanWell has already seen an 11 percent increase in its urgent care visits in the last few weeks due to COVID-19 patients (both confirmed and symptomatic patients).²

Health system leaders looking to ramp up their virtual urgent care programs should immediately begin revising their protocols and trainings to start up a COVID-19 offering. Clinicians also need to collaborate with their I&T and marketing colleagues to ensure education materials are accessible on the health system's digital front door and that it is simple and easy for patients to access virtual health options, which could include a chatbot to assess risk for COVID-19, synchronous video visits with providers and virtual triage so that patients do not show up at urgent care/ED without first determining if they should. Advanced practice providers (APPs) should also be leveraged in staffing models as they can be quickly trained to screen for COVID-19 risks as more and more patients seek screening and testing.

- 2. Hospital-at-Home:** A limited number of health systems have developed hospital-at-home capabilities to avoid inpatient admissions for some patients and enable earlier discharge for those requiring a hospital inpatient stay. Health systems will need to build the capabilities to monitor "self-isolating" patients from a central location and identify those patients who may need higher levels of care or other interventions. A 2019 Harvard Business Review article describing Mt. Sinai's experience with hospital-at-home, identified the challenges and potential of this approach to care: a limited number of AMCs (academic medical centers) have developed hospital-at-home capabilities to avoid inpatient admissions for some patients and to enable earlier discharge for those requiring a hospital inpatient stay.³

While creating hospital-at-home capabilities takes ample planning time and capital, there are simpler alternatives that could be put in place, such as active symptom monitoring through daily telephone, text, video or in-person inquiries about fever or other symptoms for 14 days after exposure. At-risk patients who have been recently discharged for an unrelated/non-COVID-19 inpatient admission can also be sent home with health monitoring equipment, so providers can pick up on early symptoms of COVID-19 and ensure early intervention when necessary.

Modality Must Match Severity

It is critical that patient severity and system capabilities are matched to keep patients in the best site of care. The use of virtual health can enable this flow and enhance access management. However, the failure to sync correctly can result in harm to patients, systems and communities. Hospital-at-home should only be used when clinical experts agree it is the right setting for the patient.

- 3. Virtual Support for Affiliated Hospitals in the Surrounding Region and Beyond:** One university health system in the upper Midwest provides a suite of virtual health services to support its numerous small hospitals and patients spread across a large rural service area, including making emergency physicians available virtually to hospitals that cannot hire their own physicians. Model programs like these provide tele-critical care services, eConsults with physicians at their hub facility and ePharmacy services. Almost every academic health system, and many non-academic health systems, has affiliated hospitals in their surrounding region that need these services either 24/7 or during nights and weekends when they have difficulty staffing certain services. Health systems providing these kinds of services for affiliates have the potential to help them better triage and serve COVID-19 patients to reduce the number of patients needing transfer to the core tertiary hospital.

Leading health systems can pursue a “command center” model to support not only the physical but also the virtual response to COVID-19 on a 24/7 basis. Around the clock accessibility of virtual health platforms in both urban and rural settings is necessary to appropriately respond to this public health situation and also demonstrates the seriousness in a provider’s handling of the outbreak and prevention efforts. By pushing a “virtual first” care model, health system leaders can help prevent further transmission of the disease in their community and in affiliates’ communities as well. Lastly, the use of multichannel accessibility prevents one channel from being overwhelmed, making AI-driven chatbots, telephone hotlines, video visits and continuously updated website/patient education all important and interdependent virtual health tools for providers to employ.

4. AI-Assisted Care Delivery (e.g., Robotic Medical Care and Chatbots):

Advanced programs, like Providence and Israel’s Sheba Medical Center, are using virtual health for patients both outside and inside the exam room. Providence Hospital in Everett, Washington, has piloted use of a robot that enables physicians to communicate with patients in isolation without entering the room. The robot allows physicians to listen to the patient’s heart and lungs with a digital stethoscope and staff to communicate with the patient without having to don isolation garb multiple times.

Providence has also enabled televisions in quarantined patient rooms to do video conferencing with staff outside the room. These capabilities could be extended by most health systems to patients in affiliated hospitals, nursing homes and other settings, reducing the risk of COVID-19 spreading both within and outside the hospital. Sheba Medical Center has partnered with a vendor that provides the devices and essential user experience necessary to allow patients to conduct exams themselves, without even having medical staff present.⁶

COVID-19...A Virtual Health Catalyst for Combatting Influenza

While the full extent of COVID-19 remains to be seen, the CDC estimates that influenza has resulted in between 9 million and 45 million illnesses, between 140,000 and 810,000 hospitalizations and between 12,000 and 61,000 deaths annually since 2010.

Ramping up virtual health solutions will undeniably help address this prevalent and enduring public health issue. By adopting and expanding virtual health, health systems will more effectively triage and care for flu patients while minimizing its spread.⁵

In addition to the use of robots, AI-assisted care delivery also includes chatbots that are trained to triage patients based on their reported symptoms and travel history. In order to get this innovative solution up and running, health system leaders need to assemble an interdisciplinary oversight body that pulls experts in from across the enterprise, develop specific COVID-19 workflows, build a data-driven triage capability on the hospital website and patient portal, and ensure effective coordination between both marketing and call center operations. While various virtual triage or symptom tracker vendors exist in the market, it will take time for health systems not only to launch the chatbot, but also ensure integration with patient records and online scheduling tools that are currently available.

Use of virtual health approaches has been growing rapidly independent of the current health crisis, particularly in health systems that have health plans, such as Kaiser Permanente and Intermountain, where the reimbursement issues are less of a constraint and providing care in a lower-cost setting is inherently rewarded. However, most health systems do not own significant health plans and have been more targeted in their use of virtual health, typically focusing on a few pilot initiatives, such as virtual critical care, tele-stroke and virtual urgent care. These areas were often developed based on the interests of individual physicians or to support affiliated hospitals and health systems.

Establishing a virtual health model is not a turnkey solution — rather, it requires thoughtful planning, design and implementation.

Sufficiently resourced, an organization can potentially stand up a **fully outsourced model in one to two months, whereas insourcing such programs can take three to six months or longer.**

Example Requirements for
OUTSOURCING

- ✓ Coordinate vendor contracting
- ✓ Address policy/legal/compliance issues
- ✓ Coordinate with marketing and I&T to integrate with digital platform
- ✓ Develop consumer education/support approaches
- ✓ Link virtual health platform with the EMR so patient records are integrated

Example Requirements for
INSOURCING*

- ✓ Build the business case, including IT investments or program development
- ✓ Establish policies
- ✓ Define workflows
- ✓ Train physicians and staff
- ✓ Modify scheduling templates
- ✓ Negotiate with payors

* In addition to those listed in the outsourcing bucket

Now is the time to take a strategic view of virtual health to better serve patients with — and without — COVID-19 and to position leading health systems to be at the center of their regional delivery network, both physically and virtually. COVID-19 has raised the stakes for health systems to make significant strides in adopting virtual health; the potential impact virtual capabilities can have on their patients, caregivers and community has never been greater. Dabbling at virtual health is no longer an option.

Sources

1. CVS Health, "CVS Health announces COVID-19 resources for Aetna members," March 6, 2020, <https://cvshealth.com/newsroom/press-releases/cvs-health-announces-covid-19-resources-aetna-members> (accessed March 10, 2020).
2. Eric Wicklund, "Coronavirus Scare Gives Telehealth an Opening to Redefine Healthcare," mHealth Intelligence, March 5, 2020, <https://mhealthintelligence.com/news/coronavirus-scare-gives-telehealth-an-opening-to-redefine-healthcare> (accessed March 10, 2020).
3. Albert Siu, Linda DeCherrie, "Inside Mount Sinai's Hospital-at-Home Program." Harvard Business Review, May 10, 2019, <https://hbr.org/2019/05/inside-mount-sinai-hospital-at-home-program> (accessed March 10, 2020).
4. Chartis experience.
5. Center for Disease Control and Prevention, "Disease Burden of Influenza," January 10, 2020, <https://www.cdc.gov/flu/about/burden/index.html> (accessed March 10, 2020).
6. Jonah Comstock, "Israel's Sheba Hospital turns to telehealth to treat incoming coronavirus-exposed patients," Mobi Health News, February 19, 2020, <https://www.mobihealthnews.com/news/europe/israels-sheba-hospital-turns-telehealth-treat-incoming-coronavirus-exposed-patients> (accessed March 10, 2020).

About the Authors



Mackenzie K. Horne
Academic Medical Centers
and Pediatrics Practice
Manager
774.313.9675
mhorne@chartis.com

Mackenzie Horne is the manager of the Academic Medical Centers and Pediatrics practices with The Chartis Group. Ms. Horne has more than 10 years of experience in healthcare including advising leading academic medical centers and children's hospitals on the development and successful execution of operational strategy to support economic and mission sustainability. Her areas of expertise include enterprise strategy, research strategy, education strategy, health care reform, academic medicine and physician shortages.



Steve Levin
Director, Academic
Medical Centers
Practice Leader
917.868.3698
slevin@chartis.com

Steve Levin is a Director with The Chartis Group. He has over 35 years of experience as a management consultant to the healthcare industry. He is a nationally recognized expert in a number of areas pertaining to academic medicine organization, governance, funds flow and strategy. He also has significant expertise with clinical program development, merger and affiliation evaluation and implementation, and academic strategy. He has worked closely with the leadership of numerous academic medical centers to help define their strategic direction and to help the leadership team to implement that strategic direction over several years.



Ryan Bertram
Principal
847.909.7416
rbertram@chartis.com

Ryan Bertram is a Principal at The Chartis Group and a member of Chartis Digital. In his 10+ years as a management consultant, Mr. Bertram has served leading organizations across the country as they navigate the changing healthcare environment. He has significant experience in strategic planning, organizational alignment, M&A, go-to-market and commercialization strategy and value-based care, along with leading projects in digital transformation.



Bret Anderson
Associate Principal
440.463.4194
banderson@chartis.com

Bret Anderson is an Associate Principal with The Chartis Group. With nearly 15 years of experience supporting both commercial and government-based health organizations to strategically integrate technology into the delivery of care, he brings a diverse background of client engagements to the Chartis digital health practice. Mr. Anderson's recent work has focused on designing and implementing comprehensive programs in precision medicine and health information exchange, spanning domestic and international client bases.



Roger Ray, MD
Consulting Director
704.280.9821
rroy@chartis.com

Dr. Roger Ray is a Physician Consulting Director with The Chartis Group. He has over 30 years of experience in healthcare, having served in a variety of leadership positions at major medical centers and health systems throughout the eastern United States. Dr. Ray most recently served as Executive Vice President/Chief Physician Executive at Atrium Health (formerly Carolinas Healthcare System), where he was responsible for operational oversight of all system physicians including a 3000+ provider medical group.



THE
CHARTIS
GROUP

About The Chartis Group

The Chartis Group® (Chartis) provides comprehensive advisory services and analytics to the healthcare industry. With an unparalleled depth of expertise in strategic planning, performance excellence, informatics and technology, digital, and health analytics, Chartis helps leading academic medical centers, integrated delivery networks, children's hospitals and healthcare service organizations achieve transformative results. Chartis has offices in Atlanta, Boston, Chicago, New York, Minneapolis and San Francisco. For more information, visit www.chartis.com.

Atlanta | Boston | Chicago | Minneapolis | New York | San Francisco

© 2020 The Chartis Group, LLC. All rights reserved. This content draws on the research and experience of Chartis consultants and other sources. It is for general information purposes only and should not be used as a substitute for consultation with professional advisors.