The U.S. Centers for Medicare & Medicaid Services expanded coverage for telehealth services in early March 2020 in response to the coronavirus pandemic, prompting many health systems to rapidly transition to virtual care. While telehealth has distinct advantages, widespread adoption also raises concerns regarding clinical appropriateness: When should a patient schedule a telehealth visit versus an in-person visit? How can a health system best support this decision? When UCLA Health asked its frontline primary care physicians these questions, they emphasized that the ability to deliver high-quality care via telehealth is driven by unique patient factors and clinical concerns. Guided by these findings and the health care organization’s experiences over 9 months (March to November 2020), the authors propose that health care systems should develop telehealth-specific triage protocols to ensure that providers continue to deliver, and patients continue to receive, the right care, at the right time, via the right medium.

**Delivery Challenges During the Pandemic**

At the start of the coronavirus pandemic, patients avoided doctors’ offices because of concerns about safety, and many skipped out on vital care.\(^1\) To combat this crisis, the U.S. Centers for Medicare & Medicaid Services (CMS) expanded coverage for telehealth,\(^2\) prompting many health systems to rapidly transition to virtual care (i.e., telehealth [specifically, video and phone visits]).\(^3,4\) At UCLA Health, telehealth visits in the Department of Medicine increased from <1% to 55% in fewer than 50 days (from March 9 to April 18, 2020) — a dramatic but necessary shift, given that almost 10,000 patients canceled or simply did not show up for their outpatient appointments during late March to early April 2020 (Figure 1). Nine months into the pandemic, telehealth usage has leveled off at around 25% of all visits. Telehealth is likely here to stay.
In April and July 2020, we asked primary care physicians (PCPs) at UCLA Health how the transition to telehealth had affected their ability to deliver appropriate care. In general, we found there was broad agreement among our PCPs that the decision to deliver care through telehealth as opposed to an in-person visit should be based on careful assessment of the risks and benefits associated with each approach. Especially outside of the pandemic, when the risk of coming into a doctor’s office is very low, they felt there were circumstances in which telehealth should not be used (e.g., a patient with chest pain or abdominal pain). In fact, we estimate that approximately 7% of all telehealth visits from March to September 2020 could have been considered inappropriate during non-pandemic times (that is, the presenting symptoms may have been more effectively and safely addressed through an in-person visit). Most notably, there was strong agreement among our PCPs that addressing chest pain via telehealth is “extremely inappropriate.” Yet, 1,931 (1.6%) of the 123,421 telehealth visits that were conducted between March and September 2020 included a diagnosis of “chest pain” or “angina.”

The initial shift to telehealth was necessary because of concerns related to Covid-19: Our highest priority at that time was to rapidly expand telehealth services in order to ensure that patients had
access to care. However, as the pandemic lingers, health systems must reevaluate the best way to provide care to patients given that telehealth is likely here to stay. We believe that a telehealth-specific triage protocol can help to ensure that patients continue to receive appropriate care during the ongoing pandemic and beyond.

Rapid Transition to Telehealth

Telehealth is not a new concept. The U.S. Department of Veterans Affairs started piloting telehealth in the 1990s, and, by 2021, the telemedicine market is projected to be worth approximately $66 billion. Notably, Teladoc, the largest virtual care provider, reported record results in terms of revenue and total visits for 2019, and these services have been very effective in certain patient populations. For example, telehealth technologies (e.g., video visits, phone visits, messaging, and wearable devices) have significantly improved outcomes for patients with chronic diseases such as diabetes and heart failure, and virtual care services have been associated with high rates of patient satisfaction (approximately 77%).

These results emphasize that the ability to deliver high-quality care via telehealth is driven by both the presenting clinical concern and patient-specific factors (i.e., “red flags”).

Before the pandemic, limited reimbursement for many telehealth services discouraged nationwide adoption. Now, many experts believe that the liberalization of virtual-care reimbursement during the pandemic has been a catalyst for a new era of health care delivery. We agree with this assessment and believe that health care providers should push to maintain these advances after the pandemic subsides. In late April 2020, our survey of PCPs at UCLA Health (228 total responses, representing a 92% response rate) revealed that 52% of the care that PCPs routinely provide could be conducted via telehealth without compromising quality. Additionally, 75% of PCPs reported that they “Agree” or “Strongly Agree” that the option to meet with patients virtually enhances their ability to provide the best care possible. As with the implementation of many disruptive technologies in medicine, rigorously designed studies will be needed to confirm whether providers’ and industry stakeholders’ opinions about the value of telehealth are correct.

Concerns Regarding Telehealth Appropriateness

The rapid transition to telehealth poses a few challenges. UCLA PCPs have expressed concern about training and technology support, patient access to technology, data privacy and security, and clinical appropriateness — with the latter being at the top of the list. Currently, patients at UCLA Health can directly schedule virtual care visits through the patient portal or our call center for most complaints with minimal guidance (Figure 2). However, if health systems fail to incorporate clinical appropriateness into triage decisions around the modality of care, patients may be seen via a virtual care visit for concerns that would have been more effectively and safely addressed in person.
When asked about this issue, our PCP colleagues provided several clinical scenarios in which a detailed triage protocol that included telehealth visit guidance would improve care delivery: a 45-year-old man with abdominal pain who is subsequently found to have appendicitis, a 67-year-old woman with leg swelling who is subsequently found to have a pulmonary embolism, and a 23-year-old man with knee pain who is subsequently found to have an infected joint.
In July 2020, we sent our PCPs an additional survey to more rigorously investigate the appropriateness of telehealth in common patient scenarios. We received 232 total responses, representing a 94% response rate. Our goal was to identify red-flag symptoms that would help to direct patients to the appropriate visit type (i.e., in-person or telehealth) (Figure 2). With use of the 9-point appropriateness scale from the RAND/UCLA Appropriateness Method (with 1 indicating “extremely inappropriate” and 9 indicating “extremely appropriate”), our colleagues rated the following complaints as being the least appropriate to address via a video visit: chest pain (2.5), shortness of breath (3.5), ear pain or hearing changes (3.5), abdominal pain (3.9), and leg swelling (4.0) (Figure 3).14
Moreover, on a similar 9-point scale (with 1 indicating “very easy” and 9 indicating “very difficult”), UCLA PCPs reported that the following patient factors made it more difficult to provide effective care through telehealth: poor cognitive function (7.5), a language other than English being the preferred language (6.9), an age of >70 years (6.3), a first-time visit (6.0), and a strong history of drug or alcohol abuse (5.8) (Figure 4). These results emphasize that the ability to deliver high-
quality care via telehealth is driven by both the presenting clinical concern and patient-specific factors (i.e., “red flags”).

FIGURE 4

Impact of Patient Factors on Telehealth Care

In July 2020, PCPs within the UCLA Health Department of Medicine were asked, “To what extent do the following patient factors make it easier or more difficult to successfully conduct a telehealth video visit?”

| Patient Factors                                      | Mean ± 95% CI |
|-------------------------------------------------------|---------------|
| Increasing education level                            | 3.1 ± 0.23    |
| Follow up visit (i.e. established patient)            | 3.4 ± 0.23    |
| Chronic patient complaint                             | 4.2 ± 0.25    |
| Acute patient complaint                               | 4.6 ± 0.23    |
| More chronic conditions                               | 5.3 ± 0.26    |
| Recent hospitalization or Emergency department visit (i.e. within last 6 months) | 5.5 ± 0.2    |
| More medications                                      | 5.5 ± 0.23    |
| Poor physical function (ADLs)                         | 5.6 ± 0.26    |
| Last visit with you over 12 months ago                | 5.7 ± 0.24    |
| Strong history of drug or alcohol abuse               | 5.8 ± 0.21    |
| First time visit (i.e. new patient)                   | 6 ± 0.24      |
| Advanced age (i.e. > 70 years of age)                 | 6.3 ± 0.24    |
| English is not preferred language                     | 6.9 ± 0.25    |
| Poor cognitive function                               | 7.5 ± 0.24    |

Source: The authors

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Development of Telehealth-Specific Triage Protocols

The UCLA Department of Medicine Quality program believes that a telehealth-specific update to current triage protocols can address these limitations by facilitating calculated determinations about which medium of care will most effectively and safely address a patient’s concerns. Many
health systems already use extensive triage protocols to direct patient flow in ambulatory, inpatient, and emergency settings. Expanding current triage protocols to provide clear guidance on when to deliver care via telehealth is one approach to ensure that health care providers continue to deliver, and patients continue to receive, appropriate, high-quality clinical care.

On the basis of UCLA’s early experience with a high volume of telehealth visits, we suggest the following pearls for health systems that are considering a triage-style approach for scheduling telehealth visits:

1. **Make virtual care a priority.** Create a multidisciplinary team, including clinical, operational, and financial stakeholders, to evaluate and implement changes that enhance a health system’s ability to provide high-quality virtual care.

2. **Incorporate telehealth into your triage protocols.** Consider the risks associated with both virtual care and in-person care, particularly during active pandemic surges, when developing triage protocols. Collect input from providers, operators, and patients to identify red flags indicating whether virtual care is appropriate.

3. **Check and refine.** Develop performance metrics and gather regular feedback from physicians, staff, and patients. Use this information in a continuous improvement framework to refine your triage protocols.

Figure 5 illustrates a pilot telehealth triage protocol for patients scheduling an outpatient visit within the Department of Medicine. Our proposed pilot protocol includes both a Covid-19 symptom screener and a telehealth appropriateness screener, which were developed on the basis of U.S. Centers for Disease Control and Prevention (CDC) guidelines and feedback from our PCPs, respectively. Patients must first answer a series of binary (yes-or-no) questions to determine the appropriateness of a telehealth visit. Early challenges include achieving a consensus on the proper screener questions and modifying call-center workflows to support seamless integration of triage questions. These challenges emphasize that health systems will need to adjust the development and implementation of their triage protocols to their unique circumstances, patient populations, and technology. An independent hospital or safety-net clinic may not have the same resources (e.g., personnel, technology, education, etc.) as a large, integrated health system such as UCLA Health.
The Way Forward

Best practices around virtual care will continue to evolve. For example, our team is currently testing whether three virtual tools (automated text messaging, wearable devices, and virtual health coaching) can be used effectively by PCPs to support care management and behavior change in patients with obesity and early risk factors for lifestyle-related chronic diseases. We hope that
these tools will help to improve virtual care. Additionally, branching-logic questions and artificial intelligence–driven chatbot technologies are in development and could soon be integrated into existing triage workflows to streamline patient scheduling.\textsuperscript{16,17} We urge health systems to seek the perspective of frontline staff and patients to inform the design of a telehealth-specific triage protocol because these individuals are in the best position to communicate the unique needs of the population being served and the current capabilities of health technology.

\begin{quote}
The way in which we practice medicine is changing — and changing fast — in response to the coronavirus pandemic, strong market pressures, and patient preferences. However, the best care is that which is provided at the right time, by the right person, using the right medium."
\end{quote}

The way in which we practice medicine is changing — and changing fast — in response to the coronavirus pandemic, strong market pressures, and patient preferences. However, the best care is that which is provided at the right time, by the right person, using the right medium. Despite its benefits, telehealth also has limitations. Therefore, we must refine our current triage processes to complement the rapid expansion of telehealth services and thoughtfully reflect the risks and benefits of virtual and in-person care. With clear and continuously refined triage protocols, we can ensure that our patients receive the best possible care, both bedside and computerside.

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