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COMMENTARY

Protecting Vulnerable Older Patients During the Pandemic

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Older people (≥70 years of age) with multiple chronic conditions have the highest risk of being hospitalized and dying from COVID-19. The current pandemic has highlighted how a strong primary-care system can play an important role in protecting this group of people. The ways in which innovative primary-care organizations have adapted their approach to the pandemic may offer important lessons, not only for future health crises but also for redesigning post-pandemic health care. We studied four primary care organizations that specialize in the care of vulnerable older patients (Iora Health, Oak Street Health, ChenMed, and Landmark Health) and assessed their responses to the COVID-19 crisis. Based on our analysis, we identified three key lessons for health-care systems: (1) the importance of fostering trusted relationships with vulnerable older patients to identify and address their clinical and non-clinical needs in a timely fashion, (2) the rapid implementation of a comprehensive virtual care approach to facilitate frequent touchpoints between the patient and the care team, and (3) the delivery of home-based health-care services to ensure health-care access during the pandemic.

The current pandemic is profoundly affecting the health of vulnerable older people (i.e., individuals ≥70 years of age). The evidence to date clearly indicates that the novel coronavirus disease 2019 (COVID-19) is particularly dangerous for older adults with multiple chronic conditions, who have very high rates of hospitalization and mortality if they contract the disease.[1,2] In addition, the pandemic has substantially disrupted the health-care system, with non-urgent care being postponed[3] and many physician offices being closed across the country.[4] This reduced access to care is especially worrisome for older patients, who are highly dependent on health-care services for the management of their chronic conditions.

Table 1.

Organization	Year Founded	Headquarters Location	Geographical Presence	Number of Patients Served*	% of Patients ≥70 Years of Age*†	% of Patients with ≥2 Chronic Conditions*†
Iora Health	2010	Boston, MA	49 practices in 10 states	~40,000	60%	65%
Oak Street Health	2012	Chicago, IL	55 practices in 8 states	~85,000	45%	82%
ChenMed	1985	Miami, FL	80 practices in 10 states	NA	NA	NA
Landmark Health	2014	Huntington Beach, CA	14 states and 46 metro markets	~105,000	73%	100%‡

*NA = not available. †Risk factor for Covid-19 related hospitalization and death. ‡Landmark Health serves highly complex patients, with almost all patients having ≥5 chronic conditions. Source: The Authors.

A strong primary-care system can help to mitigate these negative effects for vulnerable older people during this pandemic, and, importantly, potential future health crises.[5,6] Primary-care providers are in a unique position to help overcome the challenges posed by the COVID-19 pandemic in that they hold the trust of the patients and their families, have a comprehensive understanding of their patients' medical needs, and are well positioned to ascertain their patients' social needs.[5] The role of primary-care providers has become particularly important during this pandemic as older patients are dealing with a new reality that includes social and physical isolation, limited access to health care, and potential disruption of home and social services.[7]

As part of a broader research effort focusing on how innovative primary-care organizations deliver high-value care to older patients with complex needs, we studied four organizations specializing in the care of vulnerable older patients (Iora Health, Oak Street Health, ChenMed, and Landmark Health) to analyze their responses to the COVID-19 pandemic. We interviewed both the leaders of these organizations as well as investors. Our goal was to extract some generalizable lessons that could enable primary health-care providers to better serve this particular patient population both during and beyond the pandemic. The selected organizations serve a high proportion of patients who are at high risk of developing serious complications related to COVID-19. The majority of their patients are ≥70 years of age and have at least two chronic conditions (Table 1). Some of these organizations have published articles describing their individual COVID-19 responses,[8,9] and the present study built on those publications to identify common threads. We found that these organizations distinguished themselves in three key areas: (1) fostering trust in the relationship with patients, (2) transitioning rapidly to a broad virtual-care approach, and (3) developing comprehensive home-based health-care solutions.

Fostering Trust in the Relationship with Patients

Historically, trust and an awareness of patients' medical conditions and social circumstances were distinctive characteristics of the relationship between primary-care providers and their patients.[10] In recent years, however, for a variety of reasons (e.g., the emergence of volume-driven retail clinics), provider-patient interactions in primary care arguably have become less personal and more transactional.[11] Organizations that care for older people with multiple chronic conditions could benefit by fostering trust in their relationships with patients. Trust in one's health-care provider increases the likelihood that patients may share personal information not only about their health but also about their personal and social circumstances.[10] This information allows providers to

better account for their patients' clinical and non-clinical needs in order to address current ailments and prevent further health deterioration. From the onset of their existence, the four organizations that we examined have been making significant and deliberate investments in fostering trust between primary-care providers and their patients.

In response to the heightened levels of anxiety and higher risk of health complications during this pandemic, these organizations have endeavored to strengthen these relationships by proactively reaching out to their vulnerable older patients in order to ascertain and monitor their clinical and non-clinical needs. Across all four organizations, care teams now call and check in with their patients significantly more often than had been the case before the pandemic. For example, Oak Street Health has reported an increase of about 60% in daily patient encounters, Landmark Health has increased them by about 40%, and ChenMed has more than doubled them. Geoff Price, COO and cofounder of Oak Street Health, stressed the importance of reassuring its patients, noting that "[We tell our patients:] wash your hands, stay at home. If you need anything healthcare-related or otherwise, call us—we are here for them 24/7." Oak Street Health also uses these calls to assess its patients' security across six domains: health, food, medication, shelter, utilities, and social needs. Similarly, Nick Loporcaro, CEO of Landmark Health, has focused his organization on getting its "arms around the 100,000+ patients they serve", reassuring them that they have access to 24/7 urgent care where and when they need it. By constantly ascertaining patients' needs and seeking to understand factors that may put them at risk during these concerning times, these organizations have been able to quickly address the needs of their patients and, if necessary, provide additional non-clinical services, such as home delivery of medications, food, and essential home supplies.

Organizing and prioritizing patient outreach required improved risk-stratification algorithms. Iora Health developed a COVID-19 version of its risk-stratification algorithm to inform its outreach strategy. Combined with clinical judgement from the care team with specific patient knowledge, this algorithm uses data on COVID-19-related risk factors such as age, number of underlying conditions, recent hospitalizations, and recent travel history to categorize patients into emergent, high, medium, and low-risk categories. Patients in the emergent-risk category, which comprises those with COVID-19 or other acute serious conditions, receive a daily call from their clinician and are managed in their homes to the extent possible (e.g., with oxygen therapy). Patients in the high-risk category, who do not to have COVID-19 but are highly likely to need hospitalization if infected, are contacted every 2 to 3 days. In a similar effort, Oak Street Health launched its COVID Care Disease Management Program for screening, risk-stratifying, and managing patients with confirmed or suspected COVID-19. Patients who have severe symptoms are referred to emergency departments and are monitored closely by transition nurses, those who have moderate symptoms or who are considered to be at high risk are called daily by their primary care provider, and those who have mild symptoms or who are considered to be low or medium risk are called every other day by a registered nurse. Between mid-March and July 2020, Oak Street completed 60,500 check-ins through this program. In addition, it developed an algorithm, based on the clinical literature, to calculate a COVID Morbidity and Mortality Score to quantify patients' risk of contracting COVID-19 and to prioritize their outreach activities accordingly. Oak Street's care teams allocate dedicated times at multiple intervals each week to review patients with increasing risk and to develop personalized care plans.

The development and implementation of these delivery innovations posed important challenges. For example, the operational impact of these changes was significant as the organizations had to repurpose some of their existing staff and recruit and train new staff in a matter of weeks. Another considerable challenge that Oak Street Health experienced was food insecurity among its patients. Although local food pantries had sufficient food supplies, they were unable to deliver the food to people in need. To close this logistical gap and reduce the risk of infection among its patients, Oak Street Health repurposed its own fleet of pickup vans (which traditionally had been used to transport patients to and from appointments) into a delivery service. The rationale was clear: most older people leave their house to purchase groceries, an activity that increases their risk. Now, when a patient faces food insecurity, Oak Street Health works with local community organizations to deliver groceries to the patient's home. That encounter also offers an opportunity for the delivery team to observe the patient's condition and report back to the care team. Between mid-March and July 2020, Oak Street Health completed close to 9,000 food deliveries to >2,500 patients. Providing these types of non-clinical services also makes sense from a business perspective. The cost that Oak Street Health incurs to deliver groceries to its patients is lower than the cost of hospitalizations that could arise from at-risk patients becoming infected while purchasing their groceries.

A concern associated with the stay-at-home orders and delayed or suspended care was that acute conditions such as myocardial infarction and stroke could go unnoticed more often than before.[12] These organizations, like others, observed a significant decline in the use of emergency care among their patients. However, while each organization is currently in the process of performing more detailed assessments of the impact of the pandemic on care quality and access, early signals at the time of our interviews suggested that their proactive outreach efforts may have helped to counterbalance the enhanced risks stemming from the stay-at-home orders. Many of our interviewees argued that these activities, along with the improved availability of a 24/7 phone-line service, allowed them to identify and intervene at the early signs of health deterioration or to refer patients to emergency care if needed.

> *"Creating a stronger and more resilient primary-care model may necessitate a shift from a service-oriented model to one that focuses on building trusted relationships by supporting vulnerable patients in a more comprehensive way than simply responding to their clinical needs."*

Taken together, creating a stronger and more resilient primary-care model may necessitate a shift from a service-oriented model to one that focuses on building trusted relationships by supporting vulnerable patients in a more comprehensive way than simply responding to their clinical needs. We acknowledge that building and sustaining trusted relationships with patients can be challenging and time-consuming. However, we encourage providers to think more broadly about how they can help their patients, particularly in these unsettling times, and to consider whether some of their resources could be temporarily or permanently repurposed to serve different needs. These actions may then lead to lower risks of hospitalization and higher patient satisfaction. Robbert Vorhoff, the global head of General Atlantic's Healthcare sector and an investor in Landmark Health and Oak

Street Health, is confident that this approach will result in fewer infections. Vorhoff argues that, as a result of the active support from a trusted care team, patients are better educated about how to prevent infections and how to navigate the system if they do become infected. The development of trusted relationships between patients and care teams can greatly benefit from the implementation of virtual-care approaches to increase the channels through which they can connect.

Rapidly Developing and Implementing a Comprehensive Virtual-Care Approach

"We are not a telemedicine company", Landmark Health's Loporcaro clarified. "We are first and foremost a provider of in-home medical care and leverage virtual solutions to improve the quality of care we deliver to our patients." Edward Bergmark, founder of Optum (now part of UnitedHealth Group) and an investor in Oak Street Health, made a similar point: "It's not the virtual piece of it that matters; it's the continuity-of-care piece that matters." Introducing virtual tools to connect with patients more often than normal is a critical element of the approach developed by the four organizations that we studied. The use of virtual tools allowed the care teams to monitor the health status of their most vulnerable patients and to build on their relationships by promptly responding to their needs.

Importantly, all four organizations implemented virtual care for nearly all patient encounters in a matter of days, which is likely much faster than has been the case for many traditional health-care providers. Four characteristics that were common to all four organizations facilitated this rapid response. First, these organizations already had had adequate technology infrastructure in place prior to the pandemic. Iora Health, for example, had been using Google Meet to facilitate virtual connections between provider and patient. Second, well before the pandemic, these organizations had invested in training on how to use virtual care and had developed related support resources for their care teams, allowing them to adapt quickly. For example, some protocols outlined the practical steps that clinicians could take during a virtual visit to help a patient with limited digital literacy. Third, these organizations had instituted a culture of change and continuous improvement as core principles, which in turn shaped their recruitment and selection processes. Consequently, the clinicians whom they hire are agile, flexible, and expected to rapidly adapt to new delivery approaches. Fourth, as the Centers for Medicare & Medicaid Services relaxed the guidelines, these organizations quickly adopted popular communication platforms such as WhatsApp, Messenger, and FaceTime, thereby avoiding the need to familiarize patients with new virtual interfaces. This solid foundation of familiar technology, processes, and culture limited the need to acquire new skills and technology or to outsource their services to a third-party telehealth provider.

Although virtual care is regarded as a major step forward for the health-care industry,[13] these organizations contend that simply using virtual-care tools may not be sufficient, especially for patients who have poorer health and lower digital literacy. Surprisingly, all organizations indicated that older patients seemed to be more ready for virtual care than they had anticipated. However, during the implementation of virtual visits, they encountered several challenges specific to this patient population. Specifically, around 10%-15% of patients had medical conditions that impeded their utilization of virtual visits (e.g., hearing and visual impairment, dementia). More often, since many of the patients who are served by these organizations are socioeconomically disadvantaged,

they often lack the appropriate technology or internet access. Some patients, even if they did have the right technology, did not have the ability to independently conduct a video visit. To overcome these challenges, care teams at Iora Health used creative approaches. For example, its health coaches, who serve as the first point of contact, provided patients with tablets that were already set up with the appropriate functionalities and applications and supported them in learning how to use the devices.

These experiences provide evidence that working with tools that patients already know in conjunction with care teams whom they already trust can be effective and that virtual solutions can be developed even without massive investments in sophisticated technology or programming. Furthermore, virtual care also allows for more efficient interactions both within the care team, including specialists, and with the patient. For example, the Oak Street Health teams now have more targeted, shorter patient encounters (e.g., simply calling a patient to remind him about his blood-pressure medication or checking in on a heart patient who is experiencing heightened levels of stress). If needed, e-consultations allow the care team to quickly involve the specialist to discuss and update the care plan in real time. Some of the organizations use remote monitoring as a complement to virtual visits in order to better assess the patient's health and to intervene when needed. Oak Street Health, for example, uses its delivery service to drop off blood-pressure cuffs, pulse oximeters, and thermometers at patients' homes. During a virtual encounter, patients can instantly share their vital signs with their care team. As Price noted, "This is a much lower-cost and higher-efficacy version of remote monitoring that will help the telemedicine visits to be richer".

The strategic choices of these organizations offer important lessons for other traditional primary-care providers. By building on the virtual-care experiences that they may have gained so far as a result of the pandemic and investing in the available technology, providers can develop a broader virtual-care approach to facilitate sustained trusted relationships with patients. Some larger health systems have used similar virtual-care approaches to achieve their strategic goals. For example, the primary-care practices at University College San Francisco and Zuckerberg San Francisco General Hospital implemented comprehensive virtual-care approach to address disparities in access to care for vulnerable populations.[14] Of course, virtual care is not suited to address all needs. So, during this pandemic, these organizations have increased their commitment to providing home-based health-care services in order to ensure that their patients can be treated in a safe environment.

Providing More Health-Care Services at Home

The case for providing more health-care services to vulnerable older patients at home was never as clear as it is now.[15] Vulnerable older patients often experience exacerbations of heart failure, renal failure, and chronic obstructive pulmonary disease (COPD), among other chronic conditions. In normal times, these acute cases would cause patients to visit the emergency department. During the COVID-19 pandemic, however, such visits are associated with greater risk of contracting the virus.[15] Rushika Fernandopulle, CEO and founder of Iora Health, summarized this clearly: "Telling the patients to go to the ER is the worst thing that we can do, because if you didn't have COVID-19 before, you might get it if you go to the ER these days."

Landmark Health, Iora Health, and Oak Street Health strive to manage high-risk patients at home as much as possible—for example, by providing their lower-acuity COVID-19 patients with oxygen and pulse oximeters to use at home and checking in virtually with their patients on daily basis. Landmark Health, whose core business is centered around in-home medical care, maintained a significant volume of urgent home visits to stabilize non-COVID-19 patients during the first peak and continues to deliver 60% of its care in the home. As Loporcaro noted, "This is how we manage to deliver high-quality care to our most vulnerable patients, especially at a time when they need it the most". To make this model work, Landmark faced important challenges in acquiring large amounts of personal protective equipment at a time when the demand for those items was abnormally high. At the same time, it had to quickly update its infection protocols and train its frontline providers to conduct safe home visits. Similarly, Oak Street Health deploys nurse practitioner teams to visit and provide care to high-risk patients at home.

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An opportunity exists for local hospitals to collaborate with these organizations to develop comprehensive home-based health-care solutions. For example, while these organizations monitor vulnerable older patients virtually and at home, hospitals could complement these services by providing expertise and supplies to collaboratively deliver high-quality care in patients' homes. The Geisinger at Home model is a case-in-point: its multidisciplinary teams provide longitudinal care to its vulnerable older patients in close collaboration with the patients' primary-care physicians.[16]

Understanding the Organizations' Responses to the Pandemic

To better understand how the organizations that we studied responded to the COVID-19 pandemic, it is important to examine some of their distinctive features that existed before the pandemic. First, the modus operandi of these organizations has always involved "high-touch" primary care.[17] The amount of time that care providers in these organizations spend with their patients is four to five times greater than that spent by providers in regular primary-care practices. This is, in part, because these providers have much smaller panel sizes compared with more traditional primary-care practices (approximately 250-500 patients per provider vs. approximately 2,000 patients per provider).[18] Second, by design, their accountability spans across the whole cycle of care, including managing and coordinating care outside of their centers. As such, these organizations closely collaborate with local hospitals and specialist practices to ensure smooth transitions of patient care. Third, these organizations systematically use process and outcomes data to continuously evaluate the quality of care and provider performance. For example, care teams at Oak Street Health, Iora Health, and Landmark Health discuss their "most expensive" patients in weekly huddles in order to learn from them and, if necessary, to coordinate and update care plans. They also rigorously apply risk stratification for their patients and invest their clinical resources accordingly. Fourth, these organizations have strong leadership and organizational cultures that promote empowerment and

support continuous improvement. For example, ChenMed encourages care teams to experiment with local initiatives, which, if successful, are then extended to the rest of the organization.

Another important feature relates to their sources of revenue. These organizations work with risk-adjusted capitation through Medicare Advantage plans.[19] Whereas providers that operate with traditional fee-for-service (FFS) reimbursement models generate revenues for each service they provide, these organizations receive a fixed, risk-adjusted dollar amount per patient to cover all inpatient hospital and outpatient services. Therefore, they bear the financial risk associated with each patient's care,[19] which incentivizes them to minimize the need for expensive health-care services. A culture of patient-centric care and trust-based relationships, coupled with the right financial incentives to contain cost, lead these organizations to experiment and innovate with a view toward keeping their patients healthy and reducing unnecessary care, thus delivering greater value to their patients. By providing greater quality of care while maintaining a healthy bottom line, this delivery model is aligned with the financial sustainability goals of these organizations.

Especially during this pandemic, some of the benefits associated with the capitated payment model have become apparent. This reimbursement system generates a predictable revenue stream, thus providing these innovative organizations with resources to invest in technology and initiatives to protect their vulnerable older patients. At the same time, this model increases the salience of the financial risk to which these organizations are exposed, as some of their patients may contract the virus and need expensive treatments. Yet the heightened financial risk strengthens the incentive to use available resources in ways that improve patients' health and limit the need for unnecessary care. As such, while FFS providers saw a significant decline in the number of patients served (and hence substantial revenue loss), organizations that operate under value-based payment models such as capitation, especially the organizations we studied, not only survived but thrived as they attracted new patients and employees and opened new clinics during the pandemic. The capitated payment allowed them to adopt unconventional tactics to continue deliver value-based primary care to their patients while maintaining stable revenues. It is possible that the lessons learned from these innovative organizations may push other providers to move from FFS to such payment models in the post-pandemic world.

> *"The capitated payment allowed them to adopt unconventional tactics to continue deliver value-based primary care to their patients while maintaining stable revenues."*

Will the Pandemic Transform Primary Care for Vulnerable Older Patients?

The COVID-19 pandemic has disrupted the health-care system, providing opportunities to redesign and transform the ways in which we deliver primary care, especially to the most vulnerable patients. Innovative primary-care organizations such as Iora Health, Oak Street Health, ChenMed, and Landmark Health are paving the way. Our analysis of their COVID-19 responses has identified three important lessons that could be useful to other providers. First, it is important to foster

trusted relationships with patients, so that providers can assess and address both the clinical and non-clinical needs of their patients in a timely fashion. Second, organizations can compound the benefits gained from the development of these relationships by adopting a comprehensive virtual-care approach so that patients can easily interact with their care teams and receive high-quality care in a way that is more convenient and efficient than traditional in-person visits. Third, organizations need to invest in innovative ways to provide home-based health-care services when needed so that acute care can be provided in a relatively safe, patient-friendly environment. These lessons are intimately connected and build on each other.

While we do not yet know if these approaches will prove to be effective in the long run, early signals are encouraging. At the peak of the pandemic, these organizations were actually growing in the number of patients served and were hiring new employees, confirming their patients' demand for and appreciation of the type of services they offer.

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