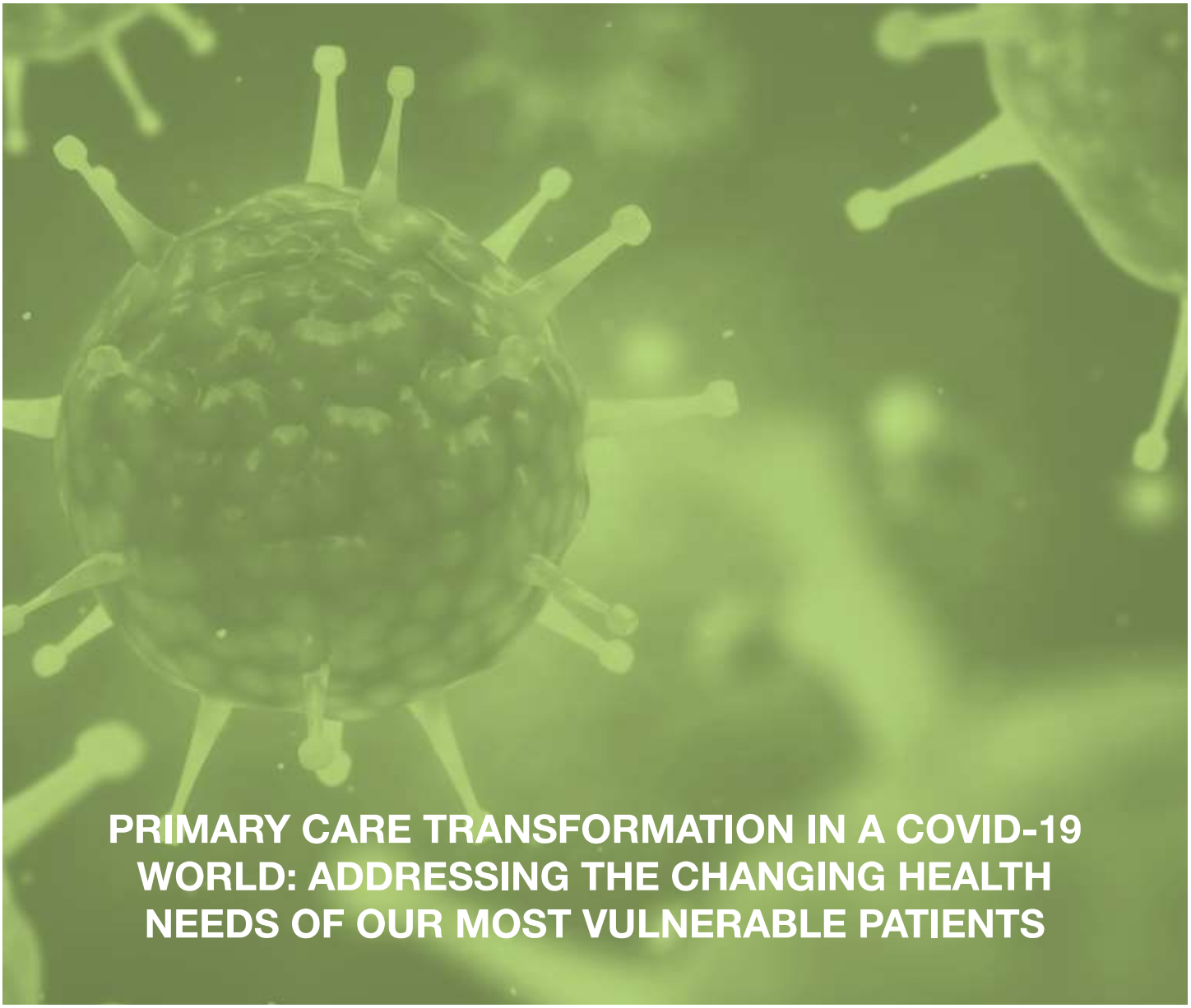

PRIMARY CARE TRANSFORMATION IN A COVID-19 WORLD: ADDRESSING THE CHANGING HEALTH NEEDS OF OUR MOST VULNERABLE PATIENTS

Authors:
Maria Fernanda Levis, MPH, MPA, CFRE, PCMH-CCE
Lara Shadwick, MBA
Julie H. Levison, MD
Sarah Bliss Matousek, PhD, MPH

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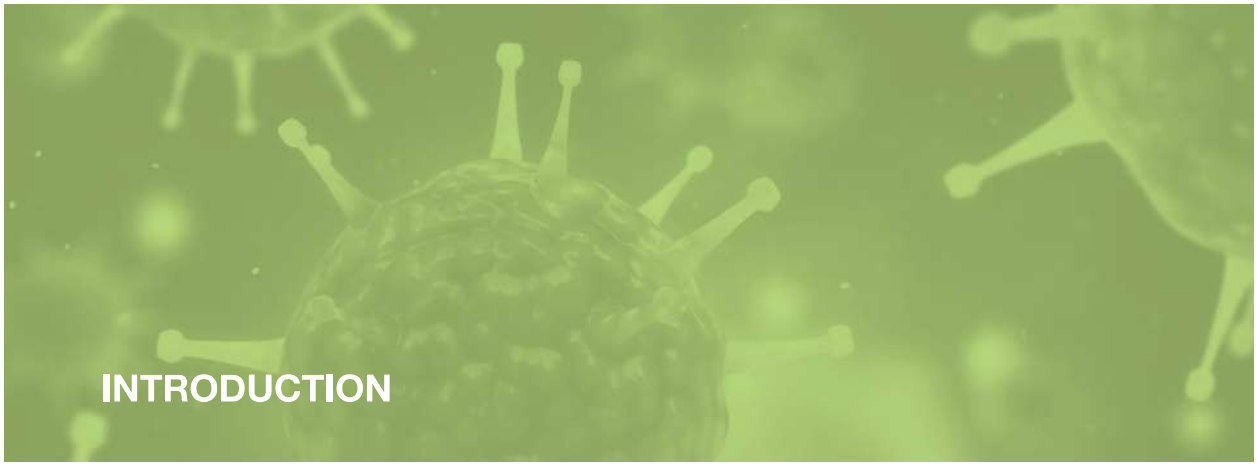

INTRODUCTION

The economic and social impacts of the COVID-19 pandemic will have far reaching implications on our health system, particularly for primary care. Social distancing and infectious disease control measures have created significant challenges for primary care providers, however, the impact of COVID-19 on primary care can and should be leveraged to accelerate patient-centered care and the effective use of virtual care in the long-term.

In the United States and its territories, access to comprehensive primary care for those patients that are at highest risk of complications from COVID-19 has always been challenging. These patients have complex needs which require significant coordination, additional time and/or more resources than those provided with traditional models of care. There are 46.2 million people aged 65 or older who live in the United States and six out of ten Americans have at least one chronic condition. Chronic diseases and poverty are often interconnected, making access to proper care even more difficult. Pre-existing conditions, such as diabetes, obesity, cardiovascular disease, and asthma are major causes of morbidity and mortality in US-based Black and Latino populations, placing them at further risk for complications of COVID-19.

The infectious nature of COVID-19 requires that providers completely rethink care models in order to maintain people healthy at home, which is a significant paradigm shift from the current office visit based system. Social distancing policies and the conversion to telehealth and other virtual health platforms, while important for reducing SARS-CoV-2 transmission, threaten the familiar dynamics of routine care if telehealth does not adapt to meet the capacity, needs and abilities of diverse patient populations. Disruptions in care for patients with complex medical and psychiatric co-morbidities can result in adverse events, particularly when patients experience added emotional stress during this public health crisis. Primary care providers are under significant pressure to quickly transform how they provide access of care for these vulnerable patients in order to avoid emergency care. Canceled or delayed primary and preventive health services have also caused massive financial losses for federally qualified health centers which serve the medically indigent, making it more difficult for primary care providers to address the needs of patients. Federal resources are necessary to

support health centers in adapting their current care models to seamlessly incorporate virtual communication and telehealth visits which facilitate the management of chronic conditions and routine care during stay-at-home orders, thus preventing emergency room visits.

The federal government is making significant investments in telehealth to support a patient's capacity to stay at home, instituting regulations and payment policies that enable its implementation during the emergency period. However, many patients remain displaced and unable to access care with this technology. Although current CMS guidelines on management of existing medical conditions recommend evaluations via telehealth, triage to appropriate sites of care and consideration of follow-up through virtual check-ins, many patients and providers are not ready. This crisis presents a great opportunity to galvanize operational improvements in primary care for all patients, however, it can also create greater obstacles in patients' access to medical resources. Attention must be paid to the process of understanding both patient and clinic readiness to engage in this type of delivery of care in order to invest appropriately to support its effective implementation.

This article highlights how Population Health principles and the patient-centered access and continuity of care standards developed by the National Coalition for Quality Assurance's (NCQA) for their Patient Centered Medical Home (PCMH) Model can be used as a framework for establishing the policies and processes necessary to support primary care providers in taking quick action to keep vulnerable patients healthy, address the underlying health conditions which make these patients high-risk, and protect them from COVID-19. Specifically, the standards set forth by NCQA for patient-centered access and continuity of care focus on a primary care practice's competency to "enhance patient access by providing appointments and clinical advice based on patient's needs" and "support continuity of care through empanelment and systematic access to patient's medical records". By building on lessons learned from the successful implementation of PCMH and telehealth efforts in rural and medically underserved areas, we propose practical measures on how the US primary care system can rapidly transform operations to create safe access for patients.

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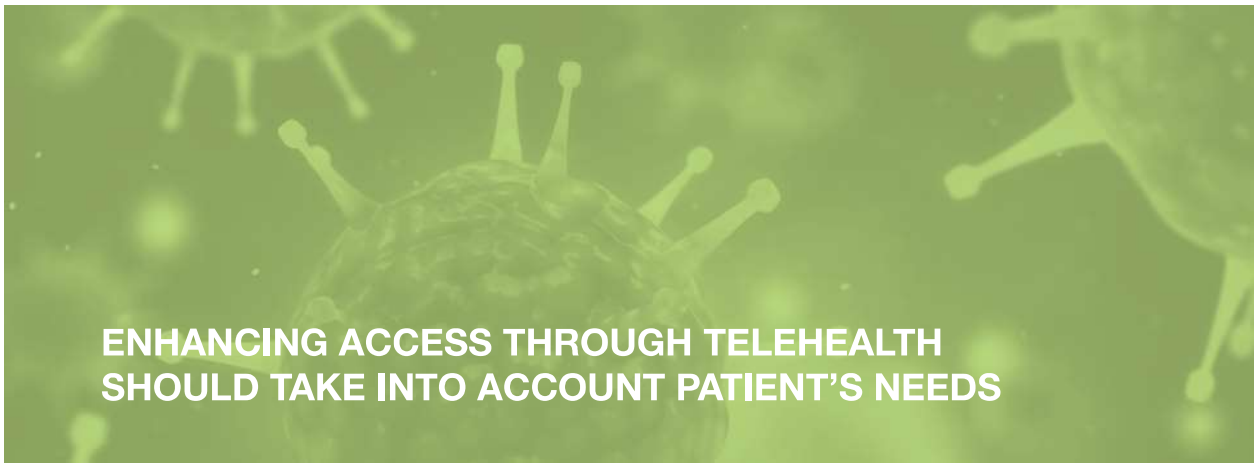

ENHANCING ACCESS THROUGH TELEHEALTH SHOULD TAKE INTO ACCOUNT PATIENT'S NEEDS

The COVID-19 pandemic has created conditions capable of accelerating and amplifying positive patient behavior patterns. It has also created regulations and payment reforms for the system to provide stronger population health-level care focused on keeping patients healthy at home. However, more investment is needed to assess patient's readiness for virtual communication and telehealth and to strengthen safety-net providers to completely manage their patient populations remotely. Vulnerable patients can greatly benefit from programs designed to provide them with the necessary skills in order to access remote care. If strategically implemented, population health concepts and telehealth deployed during the COVID-19 response can serve to increase access for these at-risk populations beyond the crisis. This requires a solution beyond stand-alone telehealth, that considers a comprehensive transformation of primary care models including:

- virtual communication with the entire health team
- innovative operational design (physical space and system structure)
- creative staffing models/solutions
- outreach and protection for vulnerable and disadvantaged populations
- telehealth/telemedicine visits

The pandemic response requires that health care systems strengthen their ability to "triage" and manage medical needs through remote systems and specialized facilities. Disease prevention and education services that may have been handled in-office now need to be transitioned to virtual communication. This transition responds to an urgent need to protect providers and patients with chronic diseases or other conditions which may render them at higher risk for COVID-19 complications. Together, these systemic changes can push for safer, more convenient access to care, and become a catalyst for permanent alterations to operations and communication.

The urgency of the current situation also requires that we evaluate patient and provider readiness for these changes in order to make virtual communication successful, particularly for those most at risk. Understanding patients' readiness for telehealth

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by assessing their skills, knowledge and resources to best take advantage of population health resources is critical for its successful implementation. The following consequences of the COVID-19 pandemic represent opportunities for remote primary care to improve capacity and carry out population health management:

1. Vulnerable patients requiring the most care and at highest risk of COVID-19 complications are afraid to leave their homes and, as such, are open to other care alternatives
2. Increased training and use of telehealth by providers, partly as a result of CMS easing Medicare telehealth policies and reimbursement
3. Increased federal investment in telehealth
4. Need to triage patients not only on clinical factors (medical and psychiatric co-morbidities), but on communication readiness and technological capacity
5. New platforms and modalities for patient communication resulting from an immediate need for crisis communications
6. Use of social media, virtual communication and health information dissemination via remote modalities
7. Temporary/partial waiving of HIPAA rules
8. Changes to the "distance site" rule for FQHCs so that providers can provide remote care to patients without having to physically travel to the FQHC
9. Easing of CMS reporting guidelines for Quality Payment Programs
10. Creation of "non-COVID-19" or "COVID-19 only" facilities where stricter infectious disease control measures are taken to provide a safer environment for high-risk patients
11. Delineation of target patient populations for telehealth and guidance for care outside the clinic walls
12. Integration of data from virtual encounters on smartphones to EHRs to support care coordination and billing.
13. Scaling 'telehealth only' licenses for physicians to expand access in physician shortage areas.
14. Incorporation of healthcare community health workers, pharmacists, and patient navigators, to assist physicians and nurses in engaging in and maintaining chronic disease management and preventative health behaviors.

Going forward, patient centered care will need to take into consideration patients' comfort level with various technologies. Crisis communications in health systems are generally coordinated and pushed out from marketing and public relations departments to reach the masses through mediums like the media, email, websites and social media sites. Significant opportunities exist for tailoring the patient's experience to their needs and capacities.

During a landscape level crisis like the one we are experiencing; patients switch from receiving communications to seeking information and rapidly adapting to new communication methods. The economic and social challenges caused by the pandemic are poised to have long lasting and permanent effects on the way primary care is provided. Telehealth, virtual communications and other patient/provider interaction will likely become a permanent part of our future. Health related websites are quickly updating crisis information, adding items like new links, apps, patient portal access, patient access points, and interactive chatbots. However, given the poor technologic literacy of some vulnerable populations, health website and other efforts would appear to be insufficient if tools, aids or direct assistance for patients to decode and understand the information are not provided

In response to the need for social distancing, primary care providers need to deploy telehealth, crisis lines, nurse help lines, email, text communications and a variety of online teaching tools to remotely meet patient needs. It is imperative to consider how to hardwire many of these appropriate, strategic changes in order to ensure long-lasting primary care transformations. Consider the use of the following communication tools at the provider's disposal:

Pull Communications: Where information is organized for patients when they need it	Push Communication: Where information is sent to patients when the provider understands they need it	Interactive Communications: Two-way communication between providers and patients as necessary
Websites	Telephone follow-up (robot calls)	Telehealth/Telemedicine
Apps	Email	Remote monitoring devised and app based diagnostic tools
Patient Portals	Text reminders	Hotlines/Call centers
Social Media	Letter (snail mail)	On-line chat functions
Dropbox	Chatbots	Follow-up phone calls
		Educational platforms for interactive patient education (e.g. video tutorials, apps, etc.)

Table 1: Modes of virtual communication available for primary care

"Primary care includes health promotion, disease prevention, health maintenance, counseling, patient education, diagnosis and treatment of acute and chronic illnesses in a variety of health care settings." This definition underscores the challenge primary care physicians face in order to promote health among patient populations. Providers have long been concerned with the ever-increasing expectations for outcomes and documentation. These issues are even more apparent during a pandemic, when providers are required to maintain social distance from patients, protect their workforce, and triage and support suspected and confirmed COVID-19 cases.

The table below also outlines how virtual communication and telehealth can be used to maximize access to primary care:

	Available through telehealth and/or virtual communication	Onsite-support and/or equipment required (fully or partially)
Population management through panels	✓	
Health Promotion	✓	
Disease prevention	✓	
Counseling	✓	
Patient education	✓	
Health maintenance	✓	✓
Diagnosis of acute illness	✓	✓
Treatment of acute illness		✓
Diagnosis of chronic disease	✓	✓
Management of chronic disease	✓	✓
Complex patient care management	✓	✓

Table 2: Primary care uses of virtual care

Primary care providers have acted quickly to enable these capabilities. However, significant investments need to be made. These investments should focus on:

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understanding patient access needs; enabling virtual communication and telehealth capacity for organizations; re-establishing workflows and workforce capacity within this framework; re-defining roles and responsibilities within a care team and keeping patients enduringly engaged.

The shift that is required takes us from one-size-fits all to tailored communication. It is important to note that these efforts need to emphasize not only language and literacy but technology tailoring (SMS vs. real time videos vs. phone vs. email). Practices need to be deliberate about sustaining the use of these virtual communication tools after COVID-19 because people who do not have access to broadband during the pandemic are not likely to have it after. Virtual triage via chatbots (with AI or staffed by a clinician) is also an effective tool to support this work. It is particularly important to record patient preferences and deploy virtual communication strategies according to the patient's preferences and health needs.

Due to the nature of clinical medicine, not all aspects of care can be provided remotely. For patients who require on-site care during the pandemic, **creating "swimlanes" through triage and distancing of care** is a critical component of a safe practice.

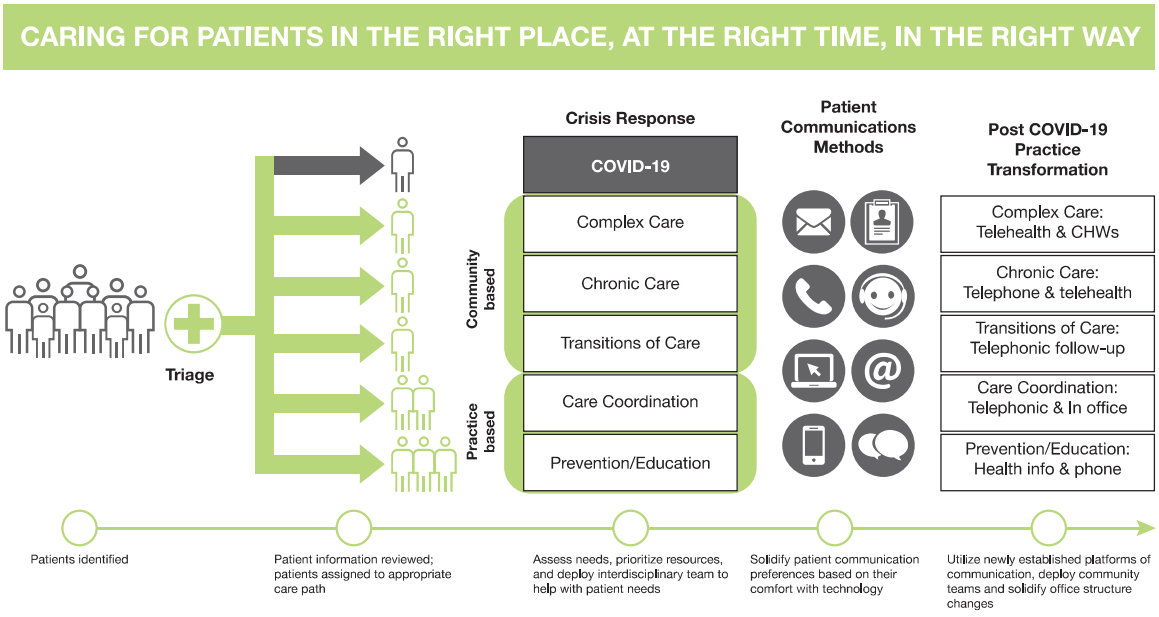

Figure 1 - COVID-19 Primary Care Triage Model

CARE CONTINUITY CAN BE ENABLED THROUGH PATIENT PANELS AND ASSIGNING RESPONSIBILITY TO PROVIDERS FOR THE HEALTH OF POPULATIONS

Fifteen percent (15%) of Americans report not having an established source of care. This number jumps to around twenty-five percent (25%) for all non-elderly adults, and an doubles to fifty percent (50%) among the 30 million uninsured Americans who do not have a primary care provider. This means that millions of Americans who suspect they may have encountered COVID-19 will not know where to go for care or testing. More than likely, they will utilize emergency departments, fee-based urgent care clinics or visit federally qualified health centers, without first calling in to coordinate care potentially risk transmitting the virus to non-infected patients. This behavior pattern contributes to viral transmission and hinders public health objectives of infection control. A rapidly expanding "floating population" of Americans without a usual source of care due to changes in insurance coverage (e.g., due to furloughs/lost jobs) must also be taken into account when considering expansion of access to care.

Empanelment is a series of processes that assign each active patient to a practitioner and/or care team, so that the practice can build effective and responsive care teams to optimize patient care, as well as address the preventive, chronic, and acute care needs of all patients. Empanelment is considered the basis for population health and continuity of care because it makes a healthcare team led by a physician responsible

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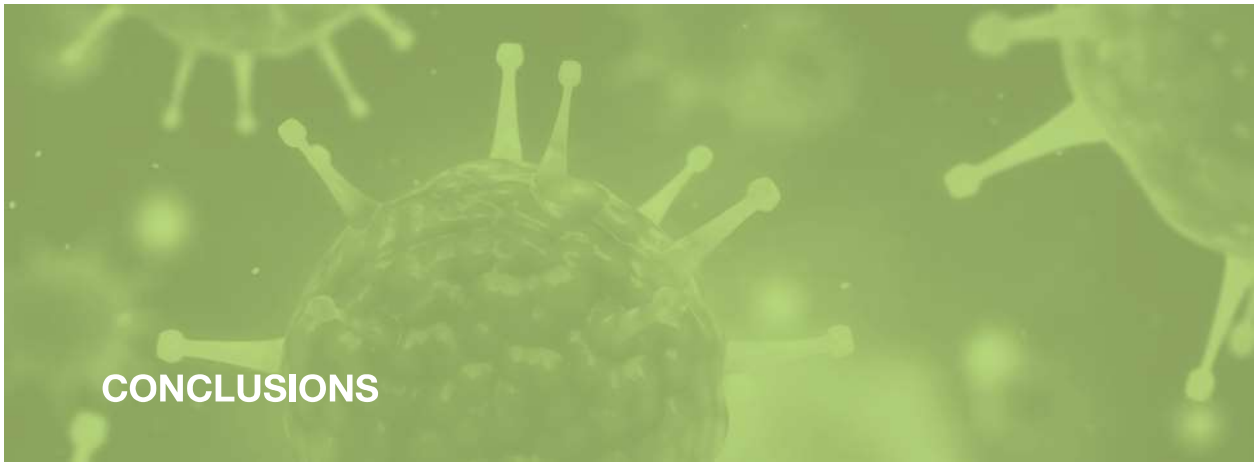
for the health of a group of patients for which they need to monitor recommended care and health outcomes. Empanelment becomes even more important during a pandemic when providers need to send push-communication to manage the populations that can no longer visit the clinic. To prevent spread of SARS-CoV-2, public health guidance puts the onus on patients to seek instructions on testing, making them dependent on their public health system or hospital/community health center for triage. This is a further barrier for patients who lack a reliable source of care, such as a primary care doctor.

The number of patients that are not assigned to a panel may increase because of the economic impact of COVID-19. In March 2020 alone, unemployment increased by 15-20 million people in the United States, signaling the movement of once viable workers and wage earners towards public subsidies and health care support. This will inevitably result in many of these newly displaced workers going from an established primary care relationship in a health system where they are probably organized into panels to seeking health services on an as needed basis. Assigning these patients to provider panels and enabling and strengthening remote access alternatives of care will become an important aspect for proper care of this new population dependent on public funds.



CONCLUSIONS

The COVID-19 pandemic and its far-reaching consequences have provided the opportunity to accelerate a complete transformation in our primary care system. By building on what we already know from PCMH and population health, we have the opportunity to shift care in ways that have previously been impossible. Additional investments in our primary care safety-net are necessary to adequately address the needs of our most vulnerable patients. These changes are not going to happen on their own and federal support will be needed to:

1. Help keep practices afloat during the COVID-19 pandemic.
2. Provide technical assistance and (virtual) support on the ground help for practice transformation.
3. Sustain reimbursement and payment that provides incentives for high quality, patient-centered primary care, both in person and virtual.
4. Identify and fund practices and patients that lack the broadband and other infrastructure to participate in telehealth.

When tens of thousands of lives could be lost in the coming months of this pandemic, we have the responsibility to make the system work better. There is a need to strategically hardwire the transformation taking place during the COVID-19 pandemic to build a resilient primary care infrastructure capable of meeting the manifold needs of diverse patient populations.

We are experiencing a complete paradigm shift from providing healthcare services through office visits to a new system focused on virtually supporting patients to stay healthy at home. Practices can use the changes forced by COVID-19 to learn about themselves and their patients and use these insights to be more patient centered and to more effectively (and widely) use technology. The system needs to move away from providing healthcare services and encounters, to providing care through virtual models decreasing transmission risks among patients and healthcare workers in addition to, exploring opportunities for primary care capacity and population health management improvements. Appropriate allocation of investments should focus on patient needs and enable support for the adoption of patient-centric policies essential to promote safe and healthy communities for both the present and the future.

ACKNOWLEDGEMENT

Together stronger. Those are the words that keep us going. The COVID-19 pandemic is the toughest public health challenge of our lifetimes. The novel nature of the virus, the changes in public policies, the reactions of the public, the access to personal protective equipment for our providers, inequalities in telecommunications infrastructure, treatment options, the vaccine R&D pipeline and many other factors make this situation too complex for any one person or group to manage. We have relied on each other and a group of very special people to provide us with guidance and support in getting this article out in record time and a tuned to the real needs of patients and providers. Thank you in particular to Dr. Antonia Novello, Prof. David Rosenbloom, Gloria Amador, DrPH-HSAM., Matthew Quinn, MBA, Brenda Rivera-Garcia, Dr. Michelle Carlo, Dr. Heileen Torres, Lilliam Rodriguez, Karen Neoh, Alvin Quinones, Josette Pagan, Ricardo Tonos, Dr. Rosario González, Amílcar Colón Pascual, Thomas Novak, Rosemarie Day, Stephen Barlets, the team at HRSA Region 2 Public Health Training Center (particularly Marita Murman and Mayela Arana), Juan Marical, Esq., Dr. Axel Arroyo and Ileana Costas, Esq. for providing us with your perspectives, your feedback and/or taking time to review the article. And of course, thank you to all our children and families for putting up with us while we tried to juggle the demands of work, social commitment and family in the face of this public health emergency.

ABOUT THE AUTHORS

MARIA FERNANDA LEVIS
CEO, Impactivo Consulting

Ms. Levis consults with primary care centers, physician groups, hospitals, pharmaceuticals, payers and governments on health systems, quality, policy, and financing. She specializes in health systems research, strategy development, policy analysis, implementation sciences, patient-centered medical home transformation, quality improvement, public health emergencies, and value-based health care projects in New York, Washington DC, and Puerto Rico. She has worked with Atrius Health (a Pioneer ACO) to document its practice transformation process; a Blue Cross Blue Shield affiliate to design its clinical, financial, and operational quality and performance improvement data systems; and multiple primary care organizations and federally qualified health centers to transform their practices to improve quality, compliance, and net income. Ms. Levis has been instrumental in securing millions of dollars in federal grants, with a perfect track record of submitting successful proposals funded by HRSA's Bureau of Primary Health Care. As an expert in health reform, she has designed and implemented methodologies for the effective implementation of evidence-based practices, community health needs assessment. leadership development in times of crisis and strategic planning integrating quality, value-based payment, and compliance to strengthen provider capacity and health outcomes. Ms. Levis has a Master's in Public Administration with a concentration in Health Policy and Negotiations from the Harvard Kennedy School and a Master's in Public Health from the Harvard School of Public Health, a Certification as a Data Science Manager from John Hopkins University and recognition as Patient-Centered Medical Home Content Expert from the National Coalition for quality assurance. She has been principal investigator and/or project lead under awards from the National Science Foundation, the Health Resources and Services Administration, the CDC Foundation and the Patient-Centered Outcomes Research Institute. She has also been a fellow of the Robert Wood Johnson Foundation, the Harvard Center for Public Leadership and the National Leadership Academy for the Public's Health. Ms. Levis has also published on the Health Affairs Blog and Huffington Post Blog.

LARA SHADWICK
Senior Consultant, Day Health Strategies

Lara Shadwick joined is an affiliate consultant at Day Health Strategies. Prior to joining the firm, Lara was the Program Director at Mountain-Pacific Quality Health, a CMS contracted Quality Improvement Network (QIN), where she envisioned and developed a successful Complex Care program to address high needs, high-cost patients in a rural setting by utilizing a community outreach team made up of a nurse, Community Health Worker (CHW), and iPad telehealth delivery. As a Senior Consultant, she expands Day Health Strategies' expertise in community engagement and development, rural health, telehealth, Community Health Worker (CHW) programming, and population health. Lara has multiple successes in building community coalitions and moving varied stakeholders to a shared healthcare transformation vision and beyond to execute novel health programs. She also has experience working and developing programming in conjunction with Alternative Payment Models (APMs) to maximize business revenues. Lara has a passion to improve healthcare for vulnerable populations and those impacted by social determinants of health. In addition, Lara has served as a health system marketing and PR director and as a community behavioral health executive. Lara's educational background includes an undergraduate degree and MBA from University of Colorado-Colorado Springs. Lara is currently acting as an advisor on a PCORI grant for one of the program sites she helped develop in Montana. Lara lives in Colorado Springs, CO with her two children. She finds her life balance in the mountains running, hiking, skiing and mountain biking. She is a huge fan of her school-age children and their pursuits.

JULIE LEVISON, MD, MPHIL, MPH, FACP
Assistant Professor of Medicine at Harvard Medical School and co-Director of the Community Research Program at Massachusetts General Hospital Chelsea HealthCare Center

Dr. Levison is a practicing infectious diseases physician specialist and runs an NIH-funded research program focused on understanding and addressing disparities in outcomes for infectious diseases with attention to HIV/AIDS and Zika infection. She has spent her career studying the impact of disease — in particular, infectious disease — on society's most vulnerable, and working to narrow the gap between the scientific potential of medicine and the reality experienced by her patients, many of whom are racial/ethnic and linguistic minorities. While much about COVID-19 is still unknown, Dr. Levison's research sheds light on the potential societal impact of this novel disease. She is an invited speaker at national and international fora to improve culturally-responsive HIV services for Latinx populations. Dr. Levison was a recipient of the El Planeta "Powermeter Award" (Top 100 individuals for Latinos in Massachusetts) and the Arnold P. Gold Foundation Humanism in Medicine Award.

SARAH BLISS MATOUSEK, PHD, MPH
Principal, Day Health Strategies

Dr. Matousek contributes to strategic planning/implementation, change management, health reform, quantitative and qualitative research, operations, and program development. After spending eight years in academia researching Alzheimer's disease in Rochester, NY and then at the Brigham and Women's Hospital in Boston, Sarah studied health policy and management at the Boston University School of Public Health. While there, she collaborated with a team at Harvard Medical School to develop and implement a mobile phone solutions program for surgical patients in rural Haiti. She also bolstered her skills and knowledge in quantitative and qualitative research, operations, strategic management, data analytics, and human resources. Since joining Day Health Strategies, Sarah helped developed the MOSAIC Maturity Model™ to evaluate both general and industry-specific organizational capabilities, across public agencies, value-based healthcare systems, and insurance exchanges. Sarah recently aided the submission of a State Innovation Model grant, implemented weekly dashboard reporting for the executive team at a state health insurance exchange, and conducted a detailed analysis and recommendations for an incoming secretary of EOHHS. Sarah has recently led the planning and implementation effort for a large Model A MassHealth ACO, redesigned care management for a major provider network, and evaluated primary care/behavioral health integration efforts for a public agency in Massachusetts. Other client work includes supporting strategic planning and using a change management framework to help implement a large-scale transformation at a provider organization.

Sarah holds an adjunct faculty position at Boston University's Metropolitan College teaching Introduction to the US Healthcare System for Health Communicators. She also recently accepted an affiliate faculty position with Atul Gawande's Ariadne Labs. She holds a PhD in Neurobiology & Anatomy from the University of Rochester and a MPH in Health Policy & Management from Boston University. Sarah lives in Spokane, WA with her husband and three children. She loves to travel, read about mythology, and run on trails in the foothills of the Rockies.

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Phone: 787-565-1227
Email: maria.levis@impactivo.com
Web: www.impactivo.com

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