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Reflections from Physician Scientists on the Front Lines of COVID-19

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As the largest health system in Delaware, ChristianaCare has been at the forefront of the COVID-19 pandemic. The following is a collection of reflections from physician scientists at the Value Institute at ChristianaCare, all of whom are involved in clinical care as well as research, quality improvement and process improvement. Each reflection describes a different dimension of the complexities, challenges and rewards of delivering care to patients, families, the community, as well as themselves during these unprecedented times. The thoughts and opinions expressed are their own and do not reflect those of ChristianaCare or the Value Institute.

Caring for the COVID Patient

David Chen, MD, MPH

As a hospitalist, I routinely care for patients who are too ill to remain outside of the hospital. I work in coordination with a team of caregivers, and we are accustomed to treating a wide range of unnerving clinical scenarios, including both acute physiological disease as well as subtle layers of pathologies within the social determinants of health. Even so, I found my hands trembling as I walked out of the patient room, unsure of what to make of my first clinical encounter with a patient with confirmed COVID-19. I was concerned for the patient and the uncertain trajectory of the disease itself. I was anxious about the treatment that I was providing, which was based on the best and most current evidence, which in of itself was rapidly evolving. And I was concerned for myself and my co-workers, for our risk of exposure. Were we doing enough to protect ourselves and each other?

Over the following weeks as the patient load continued to grow, so did cases among health care providers and staff. In working through my own anxiety and that which was clearly visible on the faces of the nurses, technicians, clerks, housekeepers, and staff whom I saw as colleagues and friends, I struggled to think of a comparable framework that could replicate the web of COVID transmission. Surprisingly, the first thing that came to mind was violence prevention, a topic that is close to my heart as a citizen, activist, and researcher. In fact, the last time I recalled feeling my hands tremble similarly was when holding pressure on a gunshot wound outside my home several years ago, when I lived in the North Side of Wilmington. As a physician scientist at the Value Institute and in partnership with the University of Delaware, my research has

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focused on the chronic effects of community violence exposure on communities and individuals. I started to find connections and similarities between community-based strategies to prevent violence and those that could potentially prevent the spread of COVID-19.

Emerging strategies that address violence as a public health issue borrow epidemiologic principles to model it as a contagion. In this context violence is considered as a disease unto itself, fundamentally propagated from one person to another. Evolving approaches have explored varying intrapersonal and interpersonal dimensions. Transmission through social interactions has been repeatedly demonstrated, particularly within households, across social networks, and with various predisposing and mitigating factors. Some of the most innovative and effective approaches use methods such as Group Violence Intervention to not only create real-time social network models of those at highest risk of firearm violence victimization and perpetration, but to then intervene to mitigate transmission by altering network structure and function. This inspired a project within the Value Institute to model networks of patient and healthcare worker interactions through Electronic Medical Record data to identify cohorts of staff at increased risk of infection and transmission of COVID-19.

As I continue my daily work as the medical director for a dedicated COVID unit, I find myself drawing on the lessons of vigilance, resilience, and compassion that neighbors and communities within Wilmington have taught me. I continue to think about trauma-informed ways to establish both psychological and physical safety for all our communities and remain committed to ensuring we all emerge from these days safe and together.

COVID and Primary Care

Vishal Patel, MD, MBA

The COVID-19 pandemic has presented opportunities and challenges in the delivery of primary care. Virtual visits and telehealth were emerging as sources of care delivery prior to the pandemic, but have rapidly become the mainstay of treatment in the outpatient setting for patients with COVID-19 and those with chronic health conditions that require monitoring. The rapid acceleration of the need for this type of care has spurred tremendous innovation at ChristianaCare, and has demonstrated the importance of thoughtful leadership, teamwork and strategic implementation. As a primary care physician, Medical Director, and physician scientist at the Value Institute with a keen interest in process improvement, this historic transition in technology has presented many opportunities for reflection as we continuously work to improve our ability to deliver care.

Telemedicine (video visits and phone visits) has been central in supporting caregivers to respond to the needs of our community members who have contracted COVID-19. ChristianaCare has used this technology for three main roles in primary care: first, to screen and triage patients remotely with cold and flu-like symptoms to determine if COVID-19 testing or a higher level of care is needed; second to provide ongoing and coordinated care for patients with chronic disease who are at high risk for poor outcomes if exposed to COVID-19; third, to provide screening and ongoing to care to healthcare workers that were exposed to or contracted the coronavirus infection.

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Although the types of services provided at ChristianaCare through virtual care have expanded, the virtual primary care practice was established over a year ago. From March 2019 – Feb 2020, there was only one practice that conducted video visits. Currently, there are over 20 primary care practices and over ten specialty practices that conduct telehealth and video visits. The number of visits performed continues to increase on a weekly basis, and over 9,000 visits have been completed to date. The majority of the visits at the beginning of the telehealth expansion were focused on care of COVID-19 patients. However, as the telehealth initiative has matured, care teams have become more facile in the management of other acute and chronic disease processes. This required tremendous efforts and partnerships from clinical, IT, operational, financial, education, and marketing teams.

As a clinical leader, I am cognizant of some limitations and blind spots to this technology that we must address before it can effectively be scaled to its full capacity. Many of the standard medical practice operations are designed based on an in-person care models. As a result, workflows from many domains – from training patients and providers on how to utilize technology, effectively working with a remote team, modifying scheduling tools/processes, reviewing payer telehealth policies and establishing billing practices – must be modified or re-tooled. It will also be important to monitor the quality of the telemedicine services provided and continue to work to enhance the technology and provision of care to enhance patient experience. Lastly, it is important to recognize that access to telehealth services, particularly video visits, is largely dependent on access to broadband internet services. To this end, ChristianaCare has been a national leader, one of 83 health systems in the country, to receive a grant from the Federal Communications Commission (FCC) under the CARES ACT which will specifically be used to increase access to broadband internet access in communities where it is needed.

Personally, I have tremendously enjoyed connecting with my patients virtually and modifying my clinical workflow on a daily basis to enhance the patient and provider experience. Reflecting on my experience, I feel that I have spent more time directly communicating with patients and less time focusing on the Electronic Medical Record and other distractions. I feel that patients have been more forthcoming from the comforts of their home. Many primary care visits such as follow up visits for chronic disease management do not require physical exams. Visits to review and adjust medications, review lab results, Medicare annual visits, and diabetes/hypertension management visits translate well to a virtual care option. The question is, will virtual visits continue to be the norm for these types of appointments as we move out of the COVID crisis? These types of visits can effectively be done without patients taking off a few hours from work. Personally, I believe this ‘new’ modality of care delivery will transform the health care industry and that the rapid acceleration, innovation, and adoption of virtual care represents a one of the few silver linings of the COVID pandemic.

Caring for the non-COVID patient

Jennifer Goldstein, MD, MSc

As a hospitalist, I care for patients with acute medical illnesses that require hospitalization. During the COVID-19 pandemic, I have been working on non-COVID units, and none of my patients have tested positive for COVID-19 on admission. My primary obligation and goal is to treat the acute medical illnesses for which these patients present. However, a secondary goal is to

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protect them from unwitting exposure to COVID from care providers, staff and other hospital employees, and to protect others, including myself, from exposure to them, in case they are early in the course of COVID, and tested falsely negative on their arrival to the hospital. To do so, employees practice social distancing, don face-masks and eye protection, and wear scrubs that can be laundered or disposed of. The medicine is the same, but the context has shifted. We are treating patients and protecting patients from us at the same time. The reverse is also true – as we care for them, we consider our own safety in a completely different context.

As physicians, before we take the Hippocratic Oath to do no harm, we are taught first to protect ourselves. We learn about using universal precautions, by donning gloves and other protective equipment to prevent the transmission of blood and fluid borne illnesses for all patients, regardless of the true or perceived risk of disease of the patient. These measures were put in place by the Centers for Disease Control in 1987 to remove complex decision-making related to self-protection. Providers have been taught since that time to assume every patient is positive for a blood borne illness, and to wear gloves at every encounter. In this new era, we are, to a certain degree, asked to assume the same about COVID-19: that everyone is infected. However, with stores of personal protective equipment (PPE) at risk and evolving recommendations regarding the "correct PPE" to use for each patient and circumstance, decisions about appropriate PPE to use for each patient may require complex decision-making. This takes away from the engrained simplicity of the concept of universal precautions and leads undeniably, to heterogeneity of protective practices that could place providers, hospital staff and patients at risk.

In addition to considering exposure risk between patients and providers, hospitalists also must consider exposure to the community once the patient leaves the hospital. Particularly for patients who are being discharged to nursing homes, congregate living facilities, and skilled nursing facilities, providers and health systems must consider the exposure to vulnerable community members. The Centers for Disease Control have provided guidance regarding the need for testing patients (both those admitted for COVID-19 and not) for COVID-19 prior to discharge. However, there are no formal guidelines regarding many nuances of discharge planning. This has led most health care institutions to implement their own practices related to discharge planning. To help understand and delineate best-practices for hospital discharge in the COVID era, national collaborative efforts have been initiated such as HOMERun, a national consortium of 22 hospital systems across the country. As the ChristianaCare site Principle Investigator (PI) for this effort, in collaboration with my co-PI and fellow hospitalist, Surekah Bhamidipati, MD, we have been working to collect and synthesize best practices for discharge of COVID and non-COVID patients to protect them as well as the community. The goal is to define and distribute best practices for hospital discharge so that, in addition to protecting patients, we protect the communities into which they are released. This work has demonstrated the importance of local and national collaboration to help inform and implement best practices for COVID care in Delaware.

The Consequences of COVID: Pediatric Oncology

Stephanie Guarino, MD, MSHP

Telling a family their child has cancer is gut wrenching and deeply unsettling at any time. Under the best of circumstances, the conversation is choreographed to include social workers, nurses,

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child life specialists, and supportive family members. Yet on a Saturday morning in the midst of the SARS-CoV-2 pandemic, I found myself having to break this news to a family in full personal protective equipment. Instead of sitting down in a private space, we stood outside the patient's room in the middle of the hall, only able to see each other's eyes. My heart dropped as I said, "your son has leukemia," not mentioning that he would likely face some complications after a delayed presentation fueled by fear of the virus. I watched his mother's face fall and I knew this was wrong; it shouldn't be done this way. Her family should be hearing the news with her, holding her hand; instead, she was alone, because hospital visitor policy only allowed one parent at the bedside. COVID-19 is relentless, stripping physicians of their most precious weapons: timely and accurate diagnosis, an empathetic touch, the art of healing, and the feeling of safety while serving others.

There have been some positives that have emerged, particularly related to the advancement of telemedicine. As clinical lead of the Sickle Cell Program at the Center for Special Health Care Needs, I take care of a particularly vulnerable group of patients. Because of housing, employment, transportation, or insurance issues, many patients find it difficult to come to clinic appointments. After implementing telemedicine visits, we've been able to see a record number of new patients with sickle cell disease, many of whom have been trying to establish care for months. We've continued to utilize the Ambulatory Infusion Center for acute care visits to offload the Emergency Department and, in conjunction with the ChristianaCare COVID remote management resources, have kept all our COVID-19 positive patients at home. The worry about each and every one continues to creep in, however. What about my patients who are homeless? Can they call for help if they need it? What about my patients who continue to work in essential jobs? More than 19% of patients with sickle cell disease who also had COVID-19 presented with pain alone, no fever or cough or the other symptoms typically used to screen. Will I be able to recognize those patients who are getting sicker over the phone? How can I best advocate for these patients who might otherwise be overlooked?

Meanwhile, the virus has laid bare some of the grim realities of our society and a broken health care system. A recent CDC MMWR report found an overrepresentation of blacks among hospitalized patients (33% vs. 18% in the community), although data is still being collected and analyzed. Based on data from the COVID Racial Tracker, the proportion of both cases of COVID-19 (30%) and deaths (26%) among black patients in Delaware is greater than expected based on their share of the population. The causes of these disparities are multi-factorial and include factors like inadequate access to health care, a lack of paid sick leave in minimum wage essential jobs, and higher rates of underlying chronic conditions, but do not adequately account for the disparities. Make no mistake, health care is not immune to systemic racism and often is one of the places of the most deep-seated biases. Although I will never experience this fear and prejudice firsthand, there is no longer any excuse to continue to ignore it as physicians, as a health care system, or as a country.

The World Medical Association's Declaration of Geneva, a code for doctors across the world, states, "As a member of the medical profession: I solemnly pledge to dedicate my life to the service of humanity; the health and well-being of my patient will be my first consideration…" But what happens when the service of humanity and the practice of medicine require so great a personal sacrifice?

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"Give me a second," I told my patient's mother, and found the family room around the corner. Although yellow caution tape blocked off the entrance, I motioned to her to duck under with me. We sat down, appropriately 6 feet apart, and started the conversation again. We tried to find connection where we could, joking about bad coffee and working from home with kids. When I went back to disinfect the chairs where we broke the rules, I couldn't shake the deep sense of loss. This moral injury, this feeling of powerlessness to fully heal, the worry that I wasn't truly connecting with my patients, will leave scars that won't be fully realized for years.

COVID and Health Policy

Navin Vij, MD, MSHP

Over the last few months, in my role taking care of hospitalized patients and continuing research focused on vulnerable populations, I have been thinking a great deal about the concept of "what is normal." The concept has been refined through the reality that in the midst of the COVID pandemic, change is an eternal constant. On a personal level, this has meant a new normal – not just with social distancing from friends or co-workers, but what it has meant for how I interact with my own family. Arriving home from work no longer means simply coming inside the house and embracing my family. The new routine of "cleansing for possible COVID" contains careful removal of all physical articles of clothing and shoes in the garage with a shower and change into clean clothes before I'm truly "back home." However, despite the new routine for me upon returning home, these moments to have been a reminder to me of how grateful I am to have a place to call home, let alone so many social supports that many of my patients lack. Professionally, I have begun to think about how policy changes have focused greater attention to these realities of vulnerable populations during COVID. Over the last several years, much of my research has focused on patients experiencing homelessness and substance use disorders. COVID, in of itself as a novel infectious virus, has posed a unique threat to those experiencing homelessness, both sheltered and unsheltered. Concurrently, this understanding has led to rapid efforts – both locally in Delaware and nationally – to use alternative forms of shelter (hotels, motels, alternative congregant housing) as well as policy changes around suspending evictions temporarily to help address the continuum of housing insecurity and homelessness.

As the country moves to reopen, I am hoping to continue research and community-based work to address the question of "is normal what we really want to return to?" for such vulnerable populations. Prior to COVID, these populations faced enormous difficulty staying healthy, let alone alive. They faced significant challenges to structural social and medical supports that could help address gaps in accessing and utilizing healthcare for better clinical outcomes. As job losses have mounted during the pandemic, the percentage of the US population considered vulnerable may increase, and with it, challenges around these very questions:

- What happens to those temporarily housed in motels/hotels?
- Where should they go?
- What should happen to policy changes and supports for rental assistance or evictions?

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I hope that the physical pause to “what is normal” in healthcare and its many systems may give us an opportunity to positively reimagine a new normal – one that is better and safer for everyone’s health moving forward.

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