Expert Opinion

Impact of COVID-19 Pandemic on Cancer Care Delivery

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On December 31, 2019, a strange new pneumonia of uncertain cause was first reported to the World Health Organization Country Office in China. A cluster of these cases originally appeared in Wuhan, a city in the Hubei Province of China. These infections were caused by a new coronavirus and was given the name ‘severe acute respiratory syndrome coronavirus 2,’ or SARS-CoV2 by the International Committee on Taxonomy of Viruses six weeks later. It was named SARS-CoV2 because the virus shares significant genetic similarity to the coronavirus which caused the SARS outbreak in 2002 (SARS-CoV). Subsequently, confirmed cases of the disease caused by SARS-CoV-2 were recognized by the acronym COVID-19 (coronavirus disease of 2019). As of August 29, 2021, there have been 216 million reported cases worldwide, with 4.5 million deaths.¹

COVID-19 has deeply influenced nearly every aspect of our day-to-day lives, more so among people living with certain pre-existing medical conditions. People who have a chronological age of 75 years or older are at heightened risk of COVID-19-associated morbidity and mortality. This is also true of people of any age who have serious health problems such as heart and lung conditions, weakened immune systems, severe obesity, sickle cell anemia, and diabetes.^{2,3} Those of color and those who, because of race, politics, or economic status, have challenges accessing medical care or who live in overcrowded housing have also been among the most vulnerable to the devastating effect of SARS-CoV-2.⁴ Cancer is also one of the underlying diseases that increases the risk for severe illness from COVID-19. Those undergoing active chemotherapy or radiotherapy and those with hematologic cancers are particularly vulnerable to serious illness if they become infected with COVID-19.^{5,6} In this commentary, we briefly highlight several of the travails that people living with Cancer (PLWC) are facing, how the oncology community has adapted to the changing needs during the current pandemic, and speculate as to what the pandemic’s continuing consequences will mean for the practice of cancer medicine.

Surviving cancer is not just a physical battle but also a mental and emotional challenge for both patients and their extended families. In this process, the interaction between the physician and the patient is crucial. Achieving compassionate interchanges is essential in building a therapeutic relationship. Whether it’s a warm smile, a comforting hug, or a conversation, these simple, humane ges-

tures can help cheer and console those with Cancer.⁷ In the current pandemic era, these in-person interactions are often replaced by technology and the use of remote meetings with the benign intent to minimize contagion. Yet, interpersonal conversations through technology tend to be dispassionate, which makes the yearning for authentic human interaction stronger than ever. Complicating matters further, these technologies may not be readily available to PLWC and health care personnel in many parts of the world.

During the first pandemic wave, patients were understandably reluctant to go to medical centers for fear of contracting COVID-19. For several months, urban medical centers, which typically would be bustling with activity, were eerily quiet. The ‘quiet’ was deceiving, and it soon became apparent that people were suffering heart attacks, strokes, and other medical catastrophes but were avoiding medical attention. This likely led to preventable complications and obscured the true impact of deaths either directly or indirectly attributable to COVID-19.⁸ In a retrospective study from England and Wales, investigators identified an 8% excess of acute cardiovascular disease (CVD) deaths among adults between March and June 2020 during the COVID-19 pandemic compared with the previous six years.⁹ Most of these deaths were not related to a known COVID-19 infection, suggesting they were most likely due to delays in seeking medical care or undiagnosed COVID-19 infection. This reluctance to seek medical care resulted in a significant drop in visits to hospitals and emergency rooms in the United States and several other countries around the world.

The decline in patient visits to clinics was also very evident during the first wave of the pandemic. The United States Department of Veterans Affairs (VA) is the largest health care provider in the United States. In a retrospective study of adults using VA care, there were 10,490,388 fewer face-to-face visits to VA outpatient facilities during the first 10 weeks of the COVID-19 pandemic than in the preceding 10 weeks. The 56% decrease in face-to-face visits was partly offset by a greater than 2-fold increase in the number of video and telephone visits, but overall, there was still a 30% decrease in the number of outpatient visits.¹⁰ Telehealth visits declined as the number of new COVID-19 cases decreased but plateaued as the number of cases increased.¹¹

Until now, processes that have been engineered to curtail the spread of COVID-19 have been largely empiric. Some of these make good sense, such as physical distanc-

ing, frequently cleaning hands, wearing masks, and implementing robust COVID-19 vaccine policies for health care workers (HCWs); but other measures such as wearing gloves, using plexiglass dividers in common meeting areas, or taking prophylactic hydroxychloroquine or ivermectin may not.^{12,13} Given the danger of COVID-19 spreading to vulnerable groups, basic tasks such as riding in an elevator or navigating through corridors are viewed as possibly hazardous. Widespread masking, sanitizers, 6-foot distance markings, and implementation of screening protocols to assess for SARS-CoV-2 exposure before entry to medical centers is granted are all approaches to bring attention to the significance of good hand and face hygiene and the importance of physical distancing, and these practices assist with guarding clinics against the spread of COVID-19 infection. Despite measures to limit the spread of SARS-CoV-2, the recent variant, Delta, has renewed fear of contagion just as mask mandates were being relaxed and large-scale public meetings and sporting events were starting back up. In many countries, the Delta variant is the dominant coronavirus strain. It is more than twice as contagious as previous variants, and there is data that it causes more severe illness.¹⁴ Although vaccinated people may still transmit the virus, these new waves of infection and death have highlighted the imperative of getting vaccines to all people and not just those who live in financially well-endowed countries.

COVID-19 imparts fear and anxiety not only for PLWC but also for the oncology teams entrusted with their care. Early in the pandemic, there was a shortage of personal protective equipment for HCWs, and the World Health Organization (WHO) noted this was made worse by rising demand, panic buying, hoarding, and misuse. There was also inadequate contact tracing, isolating, and quarantines. Furthermore, experts such as the United States Centers for Disease Control and Prevention (CDC), long considered the world's premier health agency, made early testing mistakes that contributed to a cascade of problems that persist today. The CDC failed to provide timely counts of infections and deaths, hindered by aging technology and a fractured public health reporting system. The agency struggled to calibrate its imperative to be cautious and the need to move nimbly as COVID-19 spread rapidly. In communicating to the public, CDC leadership was barely visible, its stream of guidance was often slow, and its messages were sometimes confusing, sowing mistrust. And it hesitated in absorbing the lessons of other countries, including the perils of silent carriers spreading the infection or the importance of curtailing the pandemic through the practice of mask-wearing. There was a fundamental misunderstanding that SARS-CoV-2 was transmitted primarily through the expectation of large droplets rather than aerosolization of smaller particles. Both the CDC and the WHO declared that face masks were not necessary for the public unless a person was experiencing symptoms or caring for someone who was suspected of having an infection.¹⁵

The effects of these missteps on health care delivery have been profound. A recent *New York Times* article highlighted the crisis of nursing staff shortages across the

United States.¹⁶ This stems from early retirements or career shifts among nurses as they have been pushed to physical and emotional exhaustion by a pandemic that has raged on for more than 18 months. This inability to safely accommodate all the sick while health care teams struggle without basic supplies like oxygen canisters, intensive care unit beds and ventilators has led many workers across the globe to look for safer and less emotionally charged jobs. This exodus of essential HCWs has had a spillover effect for clinics and units that care for PLWC. The net result is an expanding array of problems that leads to delays in care as well as rushed or inadequate care. It also leads to caregiver fatigue and burnout. The "Coping with COVID" survey assessed US HCW stress.¹⁷ Sixty-one percent of the nearly 21,000 HCWs who responded to this survey reported fear of exposure or transmission, 38% reported anxiety and depression, 43% suffered work overload, and 49% had burnout. Stress was higher among nursing assistants, medical assistants, social workers, inpatient workers, women, and persons of color and was related to workload and mental health.

The cancer journey is often alienating and lonely for those who must navigate it. Not having family and friends to act as advocates and provide companionship and moral support is yet another cruel irony of a pandemic that continues to impact people of all colors and races profoundly. For most patients, it is essential to have a beloved family member or a trusted friend present during clinic visits, and lacking this support only heightens their anxiety. As a new and worldwide surge of infections is occurring due to the emergence of the Delta variant, the visitor restriction policies in clinics and hospitals have once again become more restrictive, and PLWC is receiving care without the benefit of friends and families at their bedside at a time when they most need support.¹⁸

Even though technology does not entirely replicate the emotions and gestures of in-person interactions, there are various applications, such as FaceTime, Skype, Zoom, and WhatsApp, through which we communicate with our loved ones. These online platforms are increasingly used by PLWC and their families to maintain communications amongst themselves as well as the health care team. The versatile technology of telemedicine, which was previously used as a tool to deliver care to patients in areas with limited access to health care, has assisted clinical groups with checking in on patients from a safe location and is increasingly being used by various medical disciplines during the COVID-19 pandemic.¹⁹ This has been a boon for PLWC. Telemedicine may occur synchronously, asynchronously, or blended with in-person care. The consultant and patient may take part virtually via fully interactive video technology in real-time or asynchronously by storing and forwarding clinical information such as laboratory results, radiology reports, and video recordings to be interpreted later.²⁰ Telemedicine has generally been demonstrated to be at least equivalent to in-person care, improve access, and decrease costs with high levels of patient and health professional satisfaction. Telemedicine may also have potential applicability for remote chemotherapy supervision,

symptom management, survivorship care, palliative care, and approaches to increase access to cancer clinical trials.²¹

However, telemedicine can still be limited in its usability where access to broadband is lacking; people do not have up to date computers and phones with video capabilities, and where the infirm and the elderly do not know how to use newer forms of communication that so many of us take for granted.²² Improving communications through technology as our elderly and non-tech savvy patients struggle to utilize these new technologies, and those with lesser financial means have trouble procuring a stable web connection remains a priority.

Telemedicine may not be able to entirely replace in-person visits for PLWC as they need to receive chemotherapy in the clinic or hospitals and often have acute care needs. Side effects of chemotherapy such as neutropenic fever, intractable nausea and vomiting, and dehydration make immediate care obligatory. Treating specific medical conditions promptly, such as myocardial infarction, thromboembolic complications, and electrolyte abnormalities, is also critical as these conditions influence long-term health results and survival. As testing supplies become more easily available, screening all patients with Cancer for COVID-19 would aid physicians with re-booking chemotherapy whenever necessary. However, we recognize the lower sensitivities of current tests and acknowledge that most regions do not have the resources to make this possible. Furthermore, the initiation of numerous new clinical trials for experimental cancer therapies has been postponed during the COVID-19 pandemic.²³ Cancer treatment in its varied forms is the foundation of progress, and experimental treatments accessible through participation in clinical trials are frequently the last source of hope in cancer care as well as a path toward better care. Consequently, creating procedures to proceed with clinical trials in oncology securely and having treatments accessible to patients for their use is fundamental in cancer care.

The COVID-19 vaccines (e.g., Pfizer-BioNTech, Moderna, and Johnson & Johnson's Janssen authorized in the United States and those available elsewhere, including from Russia, China, and India) continue to be highly effective in reducing the risk of severe disease, hospitalization, and death, even against the widely circulating Delta variant. However, COVID-19 constantly evolves, and people who are moderate to severely immunocompromised may not be well protected after they have received their initial COVID-19 vaccines. This is particularly true for those who receive B-cell depleting therapies and who have hematologic malignancies.²⁴ For these individuals, receiving another dose of the vaccine can sometimes improve protection against the disease. The CDC recommends moderately to severely immunocompromised people consider receiving an additional (third) dose of an mRNA COVID-19 vaccine (Pfizer-BioNTech or Moderna) at least 28 days after the completion of the initial 2-dose mRNA COVID-19 vaccine series.²⁵ However, the WHO has called for a moratorium on COVID-19 boosters until the end of September 2021 to ensure that at least 10% of people in all countries are vaccinated before extra doses are handed out.²⁶ This moratorium should not

apply to those PLWC who have had an inadequate response to initial vaccination and other people who are severely immunocompromised.

Cohesive leadership at the local, state, and national levels is vital for assuring PLWC receives safe medical care, as well as correctly informing the public of the risks of COVID-19 so that any strategy to prevent infection is evidence-based. Enforcing more efficient tactics for timely COVID-19 screenings and giving medical staff access to effective personal protective equipment can increase security while providing safer interactions for both HCWs and PLWC. Providing everyone full access to COVID-19 vaccines must remain an overarching goal to staunch infection and death from this ever-mutating virus.

The novel coronavirus of 2019 has given stakeholders an opportunity to rethink and foster groundbreaking ideas for access to cancer care. As we continue to adjust to life in the era of the COVID-19 pandemic and with some permanent changes to daily practice patterns, sharing knowledge with responsibility and unanimity will assist in our advancements in cancer care, whether in this pandemic or in the years to come.

TAKE HOME MESSAGE FOR READERS

- Health care innovations made in response to COVID-19 have benefitted cancer patients.
- COVID-19 Vaccines remain a critical strategy for reducing contagion and ensuring equitable care, including for people living with Cancer (PLWC).
- PLWC who have had an inadequate response to initial vaccination and other people who are severely immunocompromised should be free to receive boosters.

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CONFLICTS OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

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