

The Impact of the COVID-19 Pandemic on Pediatric Cancer Care

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The care of children with cancer relies on opportune evaluation and diagnosis, referral to specialized centers, multidisciplinary teams, coordinated multimodal therapy, and access to supportive care. In most countries across the world, these elements do not consistently exist for children with cancer. Hence, the added stress that health systems and institutions worldwide have suffered because of the coronavirus disease 2019 (COVID-19) pandemic has negatively impacted services for this patient population. The disruption of health services and additional obstacles for children with cancer presents a serious challenge to maintaining quality care across the world, but especially in low- and middle-income countries (LMICs).

In this issue of *Cancer*, Sharma et al¹ have conducted a quantitative study exploring the effects on the COVID-19 pandemic on the care for children with cancer in India. This work described a decrease of almost 50% of newly registered children with cancer after the implementation of a national lockdown and significant delays in all elements of multimodal cancer therapy. This article provides an important contribution to a growing body of literature describing how the pandemic has affected the multiple elements of pediatric cancer care. Worryingly, these data shed light on the extent of the effects of the COVID-19 pandemic and the mitigation strategies adopted on the access to diagnosis and treatment for children with cancer. In India, a lower-middle income country, the pandemic has impacted the volume of new pediatric cancer cases, added barriers to cancer-directed therapy, and modified the practice of treating centers. These indirect consequences of the pandemic are undoubtedly larger than the effects of the virus itself on pediatric cancer patients.

Numerous reports have described a decrease in the number of newly diagnosed pediatric cancer cases with the pandemic.^{2,3} Sharma et al describe a temporal relationship of the implementation of lockdown in India with an almost 50% decrease in new cancer cases. A sobering number, considering that before the pandemic it was estimated that close to half of pediatric cancer cases in the world are never diagnosed.⁴ This correlation may be expected as travel restrictions limit access to medical facilities, including for the initial evaluation of children with suspected malignancies and subsequent referrals to specialized centers. This is further substantiated by the fact that this study highlights a decline in new cancer patients travelling larger distances to get to pediatric cancer units. Although telemedicine has been used during the pandemic to provide care,⁵ detecting cancer in children would be hard given the vague symptoms frequently accompanying malignancies and the inability to perform physical examinations. In addition, it is important to note that the frequency of treatment abandonment was not captured by this study, an additional element that could be also affected by the lockdown and the added barriers to travel. Previously published reports have described increases in treatment abandonment during the pandemic, a phenomenon mostly seen in LMICs.⁶

Furthermore, several cross-sectional surveys⁶⁻⁸ have sought to evaluate the effects of the COVID-19 pandemic on access to cancer-directed therapy for children. The work by Sharma et al adds patient-level data of more than 1000 cases, an enormous accomplishment that increases the granularity of information that has not been previously achieved. This publication highlights the effects on delivery of chemotherapy, radiotherapy, stem cell transplantation, and surgical interventions, impacting 36% of the included cases. This effect is consistent with prior surveys from LMICs.

The COVID-19 pandemic has forced pediatric cancer units to modify their operations to mitigate the risk of viral spread and continue cancer-directed therapy. This study includes the description of the practice of pediatric cancer centers in India, recounting the modifications, or lack thereof, to the treatment of acute lymphoblastic leukemia, acute myeloid leukemia, and sarcomas. For all 3 diseases, at least 70% of the evaluated centers in India continued to carry on treatment without changes. This is relevant because professional societies involved in the care of children with cancer have published consensus statements to provide advice for practitioners during the pandemic.^{9,10} These guidance documents recommend

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the continuation of standard care in the diagnosis, treatment, and supportive care for children with cancer. This is the largest report to capture the level of adherence to these recommendations.

A new insight from this study that has previously not been reported with such detail during the pandemic is the role of nongovernmental organizations that work in partnership with pediatric cancer units to provide support during cancer treatment. Almost 80% of centers reported requiring more support than usual, emphasizing the key role these organizations play in pediatric cancer care, especially during these difficult times. These data highlight the role of these support organizations and the need to engage them as key stakeholders in the strategy to mitigate the impact on pediatric cancer services during the pandemic and beyond.

Although this study represents an important step forward, continued limitations continue to exist regarding the description of the ultimate effects of the pandemic. As mentioned by the authors, the effects of the added barriers to diagnosis and treatment on the outcome of children with cancer remain unknown. The added obstacles for quality care can only mean 1 thing: worse outcomes. However, we must still wait to see how much worse.

Pediatric cancer survival rates are significantly lower in LMICs, because 2 in 3 children with cancer will die of their disease.¹¹ This disparity is largely due to health system capacity in the different countries of the world. Work like this continues to prove that the effect of the COVID-19 pandemic on pediatric cancer care reflects the strength of health systems. This study emphasizes the urgency of a robust response to support pediatric oncology care during the pandemic as it continues to evolve with new viral variants and limited access to vaccines in most LMICs.

Unfortunately, the COVID-19 pandemic hit at a time of unprecedented momentum for children with cancer with the launch of the World Health Organization's Global Initiative for Childhood Cancer. We can only hope that this momentum can be leveraged

to define a strategy to continue to care for children during the pandemic and learn from the implemented strategies to optimize resources for cancer care beyond the current health crisis.

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