

Cancer beyond COVID-19

Follow-up report from the 2020
series of Virtual Dialogues



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Introduction

The Cancer beyond COVID-19 Virtual Dialogues series, held in November and December 2020, brought together key experts to discuss the disruptions caused by COVID-19, and implications for cancer prevention and control. Attended by 139 cancer professionals across 43 countries from civil society, academia, government, clinical and private sector backgrounds, the series provided a platform to take stock of the challenges facing cancer patients during the pandemic, but also to showcase the resilience of the cancer community and highlight how it has adapted and innovated to ensure continuity of cancer services.

This follow-up report adds to the conversation by collating examples of adaptations that have since emerged for the safe restoration and continuation of cancer services. It also presents testimonies from cancer professionals across different fields, with an eye particularly to practices that have the potential to support more resilient cancer control activities through the long tail of COVID-19.

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1. Cancer screening and early detection services

1.1. Comprehensive guidance for screening resilience

To avoid a repeat of the disruptions brought about by the first wave of the COVID-19 pandemic, in November 2020 the Canadian Partnership Against Cancer developed comprehensive recommendations on how to make cancer screening services more resilient throughout the pandemic and beyond, including:

- Managing screening programmes when dealing with constrained resources
- Using evidence to focus screening activities on people who stand to benefit the most
- Delivering cancer screening programmes in a culture of safety
- Using digital health to optimize the screening journey
- Increasing access to care closer to home
- Supporting healthcare providers
- Supporting communities

[Access the full guidance document here](#)



“Efforts to support screening resilience must address inequities in access to high-quality, timely, and safe screening across the country, and not further deepen the disparities that already exist.”

Management of Cancer Screening Services During the COVID-19 Pandemic and Building Resilient, Safer & Equitable Screening Services - Canadian Partnership Against Cancer

1.2. Expansion in self-, home- and community-screening and diagnostic examination

1.2.1. Human papillomavirus (HPV) self-sampling as part of cervical cancer screening

Implementing HPV self-sampling for cervical cancer screening is an innovation that can reduce in-person interactions with health care providers throughout successive COVID-19 waves, while also countering much of the fear and stigma attached to accessing cervical screening services,¹ which are particularly prevalent among ethnic minority women.

The World Health Organization (WHO) recommends making HPV self-sampling available as an additional sampling approach in existing cervical cancer screening services, for women aged 30-60 years.² Expanding its use provides an opportunity to empower women, particularly those from minority groups who have lower screening rates and higher incidence and mortality, thereby helping to reach the global target of 70% coverage of screening by 2030.

¹ Lozar T, et al [Cervical Cancer Screening Postpandemic: Self-Sampling Opportunities to Accelerate the Elimination of Cervical Cancer](#) *International Journal of Women's Health* August 2021

² [WHO consolidated guideline on self-care interventions for health: sexual and reproductive health and rights](#). Geneva: World Health Organization; 2019.



Spotlight on cervical cancer screening in Cameroon

*Florence Manjuh, Nurse and Supervisor of Women's Health Programme
Cameroon Baptist Convention Health Centre*

How was your work disrupted during COVID-19?

The lockdown resulted in a huge decrease in the number of people visiting the health facilities, especially those coming for cancer screening. Prior to the pandemic, cervical cancer screening uptake in Cameroon stood at 19.6%. This situation worsened during the pandemic. Many feared exposure to COVID-19 by visiting health facilities for services and as a result most did not attend screening when needed.

For healthcare workers, dealing with patients seeking health services including cancer screening was more complicated than ever before. Physical exhaustion and stigma due to proximity with COVID-19 patients were just some of the challenges faced by healthcare staff. High COVID-19 infection rates among staff also impacted the delivery of services with absent days due to quarantine leading to staff shortages and reduced capacity to care for patients. All this further compounded the physical and mental burden on healthcare workers.

How did your organisation adapt to this?

With the disruptions caused by COVID-19, adapting to the situation was the only way out -

- Hygiene measures were accelerated to curb infections: facilities for handwashing and alcohol-based hand rubs were provided at entry and exit points, regular and effective use of face masks and social distancing were constantly encouraged. These measures ensured that people felt more comfortable to visit the hospital for cancer screening.
- HPV DNA testing using self-collected samples was introduced as the primary screening method instead of the regular visual inspection. This meant only women with positive results would have a follow-up visual check, reducing client contact and the risk of infection.
- Face-to-face meetings were immediately suspended and replaced by virtual ones. Nurses and other health workers received virtual training on COVID-19. Raising awareness about cancer screening was done through the media rather than in person.

What are the learnings for the longer term?

Challenges resulting from the COVID -19 pandemic helped bring about new ways to support the delivery of cancer screening services -

- The adoption of teleconference meetings and virtual learning methods helped with the continuation of services, but also led to reduced costs, freeing up funds for tackling other issues in the health facility.
- The introduction of greater hygiene and widespread use of personal protective equipment (PPE) to prevent infection sent reassuring messages about the safety of visiting health facilities.
- Regular sensitisation of the community through media played a great role in helping the population see the need to continuously access health care.
- Greater use of screening methods such as self-sampling for cervical cancer screening have the potential to maintain or increase screening levels, while keeping the population safe from infection.

1.2.2. Use of faecal immunochemical test (FIT) to prioritise colorectal screening in times of limited resources

To manage the limited capacity in endoscopy resources during COVID-19 or while dealing with services backlog, the use of faecal immunochemical test (FIT) has been recommended as a triage tool to guide the prioritisation of investigations.³ FIT tests allow for the collection of stool samples at home using a kit, which is then mailed to a doctor or to a laboratory for testing to identify possible abnormalities linked to colorectal cancer. While colonoscopy remains the gold standard for colorectal cancer screening, FIT triage of symptomatic patients in primary care could streamline access to specialists by identifying the patients at greatest risk of developing colorectal cancer and support the rationalisation of limited endoscopy services whilst ensuring rapid diagnosis and treatment.

1.2.3. Adoption of mobile screening in the community to maintain delivery of services

Research in Taiwan showed that, while in-hospital breast cancer screening decreased during the COVID-19 pandemic, community screening delivered by mobile mammography units remained a safe and reliable way to maintain regular breast examinations.⁴ Mobile mammography has also shown to attract a population of greater diversity compared to that visiting traditional cancer centres⁵ and to be a cost-effective tool to reduce geographic and social health inequalities.⁶ Similar results in addressing disparities for underserved populations have been shown by pilot itinerant lung cancer screening programmes.⁷ The deployment of mobile screening units can therefore provide a solution to both the safe continuation of screening services during a pandemic, and to address health care disparities.

2. Virtual care and remote patient support services

2.1. Cancer centres

Cancer centres across the world have had to adapt services to enable in-premises physical distancing, minimise the risk of exposure to COVID-19, optimise over-stretched healthcare workforce and so ensure continuity of treatment for cancer patients. Below are some of the practices which have emerged widely:

- Triage based on need, urgency of care and pathology have been widely introduced, particularly to identify which patient-visits may be conducted virtually;
- Virtual care was rapidly adopted by cancer centres worldwide and has become an acceptable alternative to in-person visits for many patients and providers;⁸
- Virtual and blended clinics models have emerged, offering a mix of web and telephone conversations at key points of the patient journey to keep clinic visits to the minimum necessary, including opportunities to share images via social media platforms when physical examinations are required.⁹

³ Loveday C, et al [Prioritisation by FIT to mitigate the impact of delays in the 2-week wait colorectal cancer referral pathway during the COVID-19 pandemic: a UK modelling study](#). *Gut* August 2020

⁴ Huei-Yi T, et al [Effects of the COVID-19 pandemic on breast cancer screening in Taiwan](#) *The Breast* December 2020

⁵ Stanley E. et al. [Effectiveness of a Mobile Mammography Program](#) *American Journal of Roentgenology* December 2017

⁶ De Mil R, et al [Cost-Effectiveness Analysis of a Mobile Mammography Unit for Breast Cancer Screening to Reduce Geographic and Social Health Inequalities](#) *Value in Health* October 2019

⁷ Raghavan D, et al [Initial Results from Mobile Low-Dose Computerized Tomographic Lung Cancer Screening Unit: Improved Outcomes for Underserved Populations](#) *The Oncologist* May 2020

⁸ Jiang DM, et al [Transitioning to a New Normal in the Post-COVID Era](#) *Current Oncology Reports* June 2020

⁹ Sattar AK, et al [A multidisciplinary approach to triage patients with breast disease during the COVID-19 pandemic: Experience from a tertiary care center in the developing world](#) *Cancer Reports* January 2021

- Legislation¹⁰ and guidelines¹¹ have been changed to allow for the wider use of e-prescriptions which, complemented by the home delivery of drugs, enable patients to continue treatment and avoid unnecessary exposure.

These strategies for risk mitigation have promoted new dimensions of patient-centred care. Although they have been implemented in response to COVID-19, it is likely that many of these adaptations will permanently transform cancer care across all settings.



“How long the tele-clinics will continue will be partly dictated by the COVID disease burden and hesitancy of patients to attend in person. The silver lining may be the opportunity to experiment with this model and determine its success, especially in patients who come from far-flung areas to our academic medical center to seek specialized care.”

Experience from a tertiary care center in the developing world - Aga Khan University Hospital (Pakistan)



“Virtual care (...) offers more flexibility and convenience for accessing care and reduced costs and travel burden for patients, especially those who are frail, less mobile, or live in remote areas. It may improve patient satisfaction by allowing patients to receive care in the comfort of their home and local community (...). Furthermore, virtual care technology enables increased collaboration between specialities through interdisciplinary virtual consultations and expanding partnerships with community care providers including primary care physicians.”

Transitioning to a new normal in the post-COVID era - The Princess Margaret Cancer Centre (Canada)

2.2. Patient organisations

A survey by five global cancer patient coalitions in June 2020¹² highlighted how most patient organisations around the world had to alter their services for people with cancer while experiencing a 44% average increase in demand for services. Of the 157 organisations from 56 countries that responded to the survey, 63% had produced new information related to COVID-19, half had moved existing services online and a third had developed new services.

A follow-up survey undertaken in December 2020 under the umbrella of the Global Cancer Coalitions Network (GCCN)¹³ highlighted how, for almost all responding organisations, there had been a radical transformation of services to incorporate virtual working, service provision and fundraising, which, in many cases, had increased the reach of organisations. 80% of respondents noted that technology had helped to redefine how they connected with their community of patients and supporters in a lasting way.

Still, responses also highlighted the stark reality many organisations face: over one in ten organisations have closed temporarily, with some permanently; only one in ten organisations believe their 2021 income will return to levels comparable to before the pandemic; and almost half of the organisations said their ability to operate is under threat, either currently or potentially in the future.

¹⁰ [COVID-19 and cancer control in Peru: the response of a private oncology centre](#), Dr Carlos Santiago Vallejos Sologuren, Director, Oncosalud / AUNA, former Minister of Health, Peru – Blog www.uicc.org January 2021

¹¹ [Coronavirus in LMICs: Effective advocacy in the face of adversity](#), News article www.uicc.org April 2020

¹² [The Impact of COVID-19 on Cancer Patient Organisations](#). A joint initiative by the World Ovarian Cancer Coalition, the World Pancreatic Cancer Coalition, the Lymphoma Coalition, the Advanced Breast Cancer Global Alliance and the World Bladder Cancer Patient Coalitions – June 2020

¹³ [COVID-19: Impact on Cancer Patient Organisations Worldwide in 2020](#). Reid F, World Ovarian Cancer Coalition on behalf of the Global Cancer Coalitions Network. February 2021



Spotlight on psychosocial support in Spain

*Ishtar Espejo Castella, Director
Fundación Aladina*

How was your work disrupted during COVID-19?

Fundación Aladina cares for the well-being of paediatric patients and their families and while psychosocial support is widespread in Spain, it remains a discretionary service offered by some units depending on the level of understanding and commitment of the medical team. In March 2020, all non-essential in-person hospital services were interrupted, and the psychosocial team asked to remain at home leaving our patients in an extremely vulnerable situation. Families were stressed and fearful of how COVID-19 could affect cancer patients, especially children, and one of the most valuable resources to them in this time of uncertainty, the psychologists and the emotional support network that they were used to relying on, became suddenly unavailable, at least in person.

How did your organisation adapt to this?

When lockdown was enforced and all non-essential personnel, such as psychologists, were told to go home, there was no contingency plan for what would happen to patients and families in terms of psychosocial support, which unfortunately was not a priority for the authorities. As an organization, we realised we needed to step up and ensure that our patients could continue accessing the psychosocial intervention they so badly needed.

- To overcome the gap in access to digital technologies, we provided smartphones, tablets and laptops to those in need, while the government made Internet access widely available.
- We increased our relief payment funding by 400% in 2020 and used it to make payments to family in need, especially those struggling financially due to the pandemic.
- We adapted any programme that could be delivered virtually and used different platforms to give patients access to professionals and resources including psychologists, recreational therapy experts, emotional support, social workers, physical therapy and animal therapy.
- We created a program called "Together from Home", aimed at delivering entertainment and play therapies to children and teens with cancer designed to reduce stress, foster connections and allow our young patients to be kids and just have fun.
- Expanded our services to reach more patients through new partnerships with hospitals who were unable to provide psychosocial services virtually.

What are the learnings for the longer term?

Psychosocial support needs to be at the heart of patient-centred quality cancer care. COVID-19 has shown us that mental health and emotional wellbeing are essential to the quality of life of cancer patients.

Virtual therapy was not considered ideal and yet it has proven an effective solution in terms of continuance of treatment for patients who are hospitalised on and off for long periods of time. Support groups have flourished, fostering connections and allowing patients to access a great number of resources which, prior to the pandemic, were out of reach. Patients living in rural areas, far from hospitals or with rarer cancers have all had a chance to find better fits for their psychosocial needs. A hybrid virtual and in-person system is clearly the best possible alternative. While the reach and scale of an online model is unparalleled, physical presence is key in an emotionally challenging environment such as pediatric cancer.

COVID-19 has paved the way for bold, innovative practices that prior to the pandemic were very far from our comfort zone. We have been forced to take risks and to implement new technologies and ingenious solutions in less-than-ideal situations, in most cases with great results. We must not be complacent, our patients deserve the highest quality of care and that requires open minds, flexibility and innovation.



Spotlight on financial support in Malaysia

*Murallitharan Munisamy, Medical Director
National Cancer Society of Malaysia (NCSM)*

How has COVID-19 contributed to worsening financial challenges for cancer patients?

Malaysia has a dual healthcare system in which cancer patients can be diagnosed and treated within the public healthcare system or the private healthcare system. The former is highly subsidised, but subject to long waiting times and other access concerns including rationing of care; the private sector instead has cutting-edge services, but at high costs and caters largely to insured patients or those from high-income groups. Many cancer patients move between the two systems, paying out-of-pocket (OOP) for diagnostics or even surgical intervention in the private sector before receiving subsequent chemotherapy or radiotherapy in the public sector.

Amidst the pandemic, many Malaysians lost their jobs and subsequent employer-insurance coverage, forcing them to be treated only in the public sector due to financial concerns. This continues to overload the strained public sector. Financial challenges such as those occurring from the loss of jobs mean that patients are unable to finance their cancer treatment or are forced to choose between basic necessities and cancer care, often with severe repercussions on their clinical outcomes.

How did your organisation adapt to this?

Amidst the pandemic, these are some of the initiatives begun by NCSM to alleviate the worsening financial challenges of Malaysian cancer patients:

- Working with partners, NCSM put into place a network supplying low-income and vulnerable cancer patients with daily necessities including food and household items.
- NCSM expanded its halfway home services with the introduction of a new Adult Home of Hope, providing free accommodation for cancer patients coming from out-of-town and receiving treatment at Hospital Kuala Lumpur, Malaysia's largest tertiary public hospital.
- Working with partners, NCSM introduced new subsidised PET CT scan services and CT scan services for public sector patients or uninsured patients. These are significantly cheaper than available private sector services, decongest the government service sectors and enable less delays for patients to receive treatment.
- Widening of patient drug assistance programmes - working with industry partners, NCSM has been able to support access to a number of new innovative therapies at highly subsidised rates for public sector patients and the uninsured.
- Working with industry partners, NCSM introduced cancer nutrition supplement subsidy programmes, providing prescribed cancer nutrition supplements for patients at highly subsidised rates. These provide patients with significant monthly cost savings.

What are the learnings for the longer term?

As a civil society organisation, we have built partnerships across multiple sectors to ensure patients were able to access essential services despite their financial challenges. These activities highlight how critical it is for us to continue to function to ensure that the care and socioeconomic needs of patients are met. Not only would we otherwise be putting patients at risk, but also our health systems, which face enormous pressures from backlog of cancer patients presenting late with even more severe conditions.

3. Cancer research and clinical trials

Cancer research budgets, particularly outside government, have been greatly affected by COVID-19. Large funders such as the American Cancer Society, Canadian Cancer Society and Cancer Research UK have predicted hundreds of millions in cuts or shortfalls in revenues, with the potential to severely diminish future capacity to develop new drugs, and the prospect of a lost generation of cancer researchers.¹⁴

While urgent calls are made to governments to step in to make up some of the shortfall, the research community can also draw important lessons from the pandemic on what is possible when faced with such a challenge. The fact that an exceptional number of COVID-19 clinical trials took place during the first months of the pandemic shows that it is possible to significantly reduce the time as well as the regulatory and administrative costs involved in coordinating, registering and conducting trials. Moreover, the global vaccine development effort is a remarkable demonstration of what can be achieved through cooperation between different international regulatory bodies, industry and academia.¹⁵

At the same time, investigators working on active oncology trials have found a variety of ways to adapt to straitened circumstances and comply to social distancing so that trials could continue, whether leveraging telehealth to limit in-person visits, using e-signatures for trial documentation, or shipping oral medications.

Some practitioners are arguing for this to become an opportunity for a step change in patient involvement in clinical trials:¹⁶ while a fully virtual trial is not feasible for most cancer studies, introducing some virtual or decentralised elements when appropriate could make conventional trials more efficient, potentially reducing patient burden and consequential clinical trial dropout, while optimising the utilisation of scarce health care resources. These adaptations may also boost the recruitment of a more ethnically diverse population in cancer trials.



¹⁴ Burki TK [Cuts in cancer research funding due to COVID-19](#) *The Lancet Oncology* January 2021

¹⁵ Bailey C. et al. [Cancer Research: The Lessons to Learn from COVID-19](#) *Cancer Discovery* September 2020

¹⁶ Saini Kamal S. et al. [Reimagining Global Oncology Clinical Trials for the Postpandemic Era: A Call to Arms](#) *JCO Global Oncology* June 2020



Spotlight on oncology education and training in Egypt

*Ahmed Hefnawy, Gynaecologic Oncology Consultant and Lecturer
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How has COVID-19 affected oncology education and training?

COVID-19 has had dire consequences not only on healthcare services, but also oncology training and medical education. The challenges faced at our institution are similar to those that other international academic institutions experienced. The COVID-19 pandemic disrupted clinical, surgical and research aspects of oncology training creating a dilemma for cancer care.

- Trainees were redeployed from their oncology services to cover COVID-19 wards and care units.
- Clinical activities for trainees were limited, especially in surgeries where only essential personnel were present. In-person lectures, didactics and meetings were all suspended which diminished the opportunities for trainees to present to their colleagues.
- Examinations were postponed, adding extra stress to the trainees regarding their future careers.
- Trainees' academic productivity was reduced by interruption of research activities and limitation of access to research laboratories.

How did your organisation adapt to this?

The disruption in oncology training and medical education became a global challenge, and our institution quickly adapted to the new challenge and learned from others facing the same situation.

- Faculty and trainees were divided into two alternately working teams during peak waves to ensure that clinical and surgical services were covered during illness or self-isolation in any of the teams.
- Online virtual platforms replaced in-person education. A blend of recorded video lectures and live lectures was employed to limit data usage. One of the drawbacks we experienced was the short time to implement a well-structured training programme.
- Surgical education was addressed by incorporating pre-recorded surgical videos into the training curriculum to complement direct observation. Dry lab training was encouraged, considering hygienic measures and scheduled slots for practice.
- Training programmes were extended to allow trainees to attain their training competencies and finish their research projects. Qualifying exams were rescheduled, and testing centers were adjusted to social distancing measures.
- International societies and experts created educational content for trainees accessible even in LMICs, improving the quality of oncology education.

What are the learnings for the longer term?

The COVID-19 pandemic created unique challenges that paved the way for innovative approaches to how oncology training and medical education are conducted in the foreseeable future. Virtual learning proved that physical presence is unnecessary for most academic activities such as lectures and multidisciplinary conferences. Multi-centre collaboration created outstanding learning opportunities by bringing experts in the field to everyone's virtual doorstep.

Surgical education might be the most challenging aspect of training. Support from senior surgeons to mentor junior faculty when operation theatres return to maximum capacity will be necessary to clear the backlog of cases.

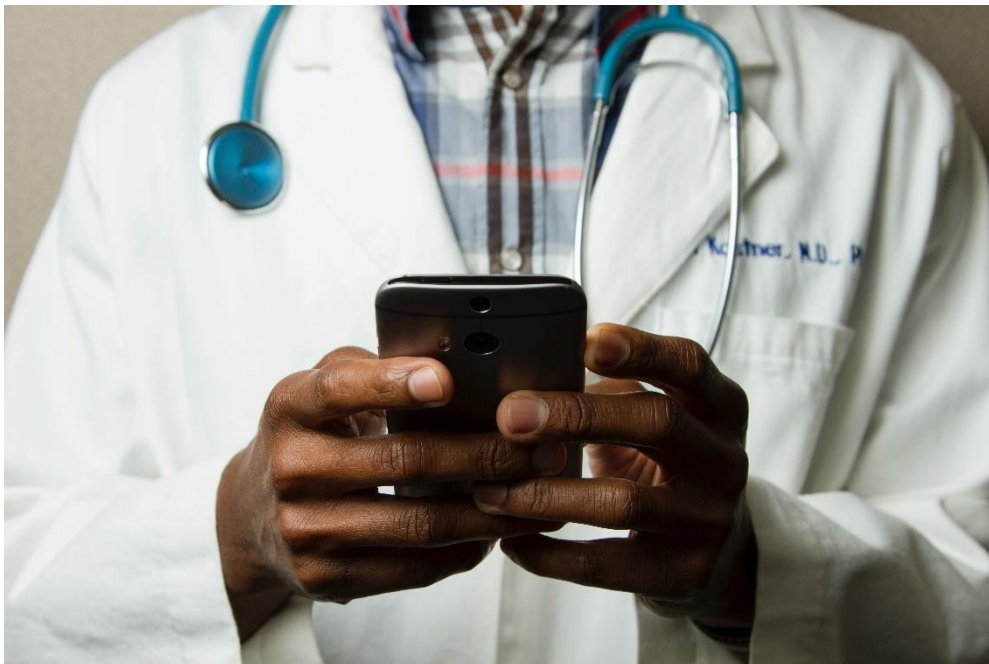
Flexibility from training programmes and certifying bodies to ensure trainees are not rushed to finish their clinical, surgical, and research requirements is essential.

4. Potential of artificial intelligence (AI) in cancer care

Alongside increased use of telemedicine, artificial intelligence (AI) may also offer solutions to tackle the backlog in non-COVID-19 care, including cancer screening, tests and treatment. AI in cancer care could help find innovative ways to reach individuals faster and identify early signs of cancer. In particular, AI can help identify those patients who are at highest risk due to delays, thereby prioritising services and minimising the downstream effects of the disruption in cancer services.

Some of the AI applications that have seen an acceleration following the pandemic include:

- AI has been employed to help triage and sort overlapping symptoms between COVID-19 and lung cancer, with a software platform used in Russia to detect malignant tumours from scans of COVID-19 damaged lung tissues.¹⁷
- Algorithms analysing patients' responses to digital questionnaires are being implemented to sort patients waiting lists in the vast backlog of appointments caused by coronavirus and prioritise the most urgent cases; while this has huge potential to free up doctors' time, there are concerns that it could exacerbate health inequities (e.g. some groups have greater access to digital technology and there are cultural and health literacy differences in how people may rank their pain or understand their symptoms, which could affect the objectivity of the data).
- As adoption of telemedicine increases, AI can help optimise its use by analysing other large data linked to the patient and pertaining risk factors and help minimise the missing of physical cues due to the absence of a physical examination and hence support clinical decision-making, particularly in case of unusual cancers.¹⁸
- With regards to screening of specific cancers: AI is being trialled to analyse mammograms for signs of breast cancer and manage screening resources;¹⁹ AI also holds potential to narrow down the number of people needed to be screened to identify those who may develop pancreatic cancer, bringing early detection of pancreatic cancer one step closer to reality.²⁰



¹⁷ World Economic Forum In partnership with the Lung Ambition Alliance [Learning Lessons from across Europe: Prioritizing Lung Cancer after COVID-19](#) January 2021

¹⁸ McCall Becky [Could telemedicine solve the cancer backlog?](#) *The Lancet Digital Health* August 2020

¹⁹ UK Parliament Post [AI and Healthcare](#) December 2020

²⁰ Malhotra A. et al. [Can we screen for pancreatic cancer? Identifying a sub-population of patients at high risk of subsequent diagnosis using machine learning techniques applied to primary care data](#) *Annals of Oncology* July 2020



Spotlight on COVID-19 and the acceleration in technological innovation for cancer patient care

*Kingsley Ndoh, Clinical Assistant Professor of Global Health
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How has COVID-19 influenced the use of digital platforms in cancer patient care?

The COVID-19 pandemic magnified existing health inequities around the world. While it presented a unique challenge for cancer patients globally, low- to middle-income countries were hit the hardest especially in sub-Saharan Africa, where there is limited access to oncologists and other cancer care specialists, and the population in these areas live relatively far from a functional cancer centre. These gaps partly led to the acceleration of the use of digital platforms for telemedicine consultations and spurred the growth of artificial intelligence-driven start-ups to bridge the cancer treatment gap in Africa.

The use of telemedicine platforms in LMICs accelerated as cancer patients in treatment, who were more vulnerable to the virus, self-isolated during the pandemic. Botswana, a country of about 2.3 million people, utilised a smartphone application, *OP care*, to support appointments and patient follow-up during strict lockdowns. Several hospitals in India used WhatsApp platforms for patient follow-up and psychosocial support. While these adaptations have greatly helped cancer patients, it has also heralded the need to innovate around patient data, such as patient-reported outcomes, and cloud storage to improve machine learning models around diagnosis and treatment.

How did your work adapt to this?

The pandemic gave my team and me the opportunity to innovate and build an early stage MedTech startup – Hurone AI. Hurone is a smart phone app that leverages AI and big data to empower cancer patients to navigate their cancer treatments, engage in conversations about their cancer and get personalised answers that are tailored to their specific clinical situation, understand, and anticipate the side effects of their treatment amongst other features. Patients can watch animated educational materials about their disease or procedures they are scheduled to have performed and ultimately connect with a global network of oncologists through the Comprehensive Cancer Center on the Cloud (C4) platform, which is being developed by the Harvard Medical School in partnership with IBM Watson, for second opinions and to answer questions. This is made possible by a strategic partnership between Hurone AI and C4. Hurone AI has focused these efforts on breast cancer to better understand usage and impact prior to raising funds to expand to other cancers. Our team has been carrying out several focused group interviews in Rwanda and Nigeria to tailor our solutions to the greatest needs of cancer patients.

What are the learnings for the longer term?

I have learned three major lessons from the pandemic.

- To achieve true equity in global cancer care, innovative technologies should be incorporated in all aspects of cancer control, from prevention, diagnosis and treatment to palliation and end-of-life care.
- Contrary to long-held beliefs that innovative technologies around digital health may not work in LMIC's, the opposite has been the case.
- As the use of AI continues to grow in clinical settings, data diversity is key to achieving ethical AI use and limiting bias.

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