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## The Future of Oncology: Earlier Detection Saving More Lives, With the Help of AI



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Many cancer patients are experiencing the crippling effects created by the pandemic. One example of this is illustrated by a recent survey in which a group of radiation oncologists in the U.S. describe how their patients presented with more advanced cancers over the course of the pandemic. [1] Shutdowns and ongoing concerns about COVID-19 have delayed screenings and interrupted treatment for millions of people globally. And because early diagnosis and treatment are crucial to survival rates, the increase in cancer deaths could be staggering.

Cancer already is a leading cause of mortality worldwide, accounting for nearly 10 million deaths in 2020. [2] Unfortunately, factors such as geographic location and socioeconomic status can contribute to higher morbidity rates from the disease. The pandemic has exacerbated the situation. It's one of the reasons why President Joe Biden on Wednesday recommitted the U.S. to [halving cancer deaths](#) over the next 25 years, with plans to form a Cancer Cabinet to help oversee the so-called "White House cancer moonshot."

However, we believe that hope is not far away. We believe it starts with innovative digital technology and evolving patient care models that have the potential to deliver faster cancer diagnoses and more precise treatments. Combined with proactive efforts to make the newest innovations more accessible, these advancements will make cancer patient care less siloed, more efficient and available to more people, and in doing so, dramatically improve outcomes. GE Healthcare is investing in technology specifically designed to improve oncology outcomes and drive more precise care across the entire patient care journey. We are developing these digital technologies and solutions and unlocking data. Together they ensure providers have the images and information they need to make faster, better decisions.

Oncology, along with the rest of the healthcare ecosystem, is evolving to more holistic patient care. That means caring for the whole patient along the cancer patient's entire journey, from diagnosis through every stage of treatment. Part of that is making the patient experience less onerous, be it through patient-centric one-stop, rapid diagnosis breast cancer programs in [Paris](#), [Pennsylvania](#) and [Egypt](#), which aim to provide patients with a same-day diagnosis and treatment plan or through on-device digital technologies.

One GE Healthcare innovation is a deep-learning [MR algorithm](#) that improves image quality and can reduce scan time by as much as 30%-50%. [3] That can allow clinicians to see more patients, potentially reducing wait time for important screening and diagnostic tests. Another is an imaging agent that can help oncologists determine optimal treatment plans by potentially detecting the type of tumor in patients with metastatic breast cancer. It can lead oncologists to bypass debilitating rounds of chemotherapy and radiation in favor of more individualized alternative treatments.

Collaborations pairing healthcare expertise with breakthrough tech to accelerate the journey to better patient care are becoming more common throughout the industry as well. GE Healthcare is [partnering with Optellum](#) to use AI in conjunction with imaging to promote early diagnosis and treatment of lung cancer. Together, we're aiming to help clinicians identify lung cancer earlier and design personalized treatments for it. By determining whether a lesion on the lung is — or isn't — malignant, we'll also prevent invasive, exploratory procedures on healthy people.

Technology has given us the capability to integrate data from diverse sources, such as electronic health records (EHR), genomics, radiology information systems (RIS), imaging and other medical device data. That helps oncologists do everything from simplifying their patient workflows to better interpret increasingly complicated clinical patient data to comparing data from patient to patient. Merging that previously fragmented data into a single, AI-backed interface can allow them to track and manage individual patient care better, in part by designing personalized, targeted treatments. Those, in turn, can lead to better patient outcomes.

As Professor Richard Gilbertson, Director of the Cancer Research U.K. Cambridge Centre and Head of the Department of Oncology at the University of Cambridge, has said, "Bringing all this data together to make precise and informed decisions for patients can be hard. We often do this inefficiently and miss important connections between the data."

GE Healthcare [is partnering with Cambridge University Hospitals](#) to develop an application aimed at improving cancer care, using an AI-enhanced application integrating patient data from multiple sources into a single interface. The aim is to offer all medical teams involved in a patient's cancer care — medical oncologists, clinical oncologists, surgeons, radiologists, pathologists, clinical nurse specialists and more — simultaneous access to the necessary data and information to allow the medical team to plan the best, most personalized treatment for each of their patients. The solution will be initially evaluated in ovarian cancer, with the aim of broadening use to other cancers in time.

Pandemic-associated spikes in patients presenting with advanced cancer need to be addressed. Investing in advanced software engineering, more personalized care, and efforts to expand access to such patients, are a major part of the solution. Adding them to clinical practices and clinical trials will improve the quality — and length — of life for millions of people.

**Source:** [GE Healthcare](#)

#### References

[1] [https://www.astro.org/ASTRO/media/ASTRO/News%20and%20Publications/PDFs/ASTRO\\_COVID19Survey\\_2021.pdf](https://www.astro.org/ASTRO/media/ASTRO/News%20and%20Publications/PDFs/ASTRO_COVID19Survey_2021.pdf)

[2] [https://www.who.int/news-room/fact-sheets/detail/cancer#:~:text=Cancer%20is%20a%20leading%20cause,lung%20\(2.21%20million%20cases\)%3B](https://www.who.int/news-room/fact-sheets/detail/cancer#:~:text=Cancer%20is%20a%20leading%20cause,lung%20(2.21%20million%20cases)%3B)

[3] GE Healthcare data on file.

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