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Integrated Cancer Care and Intelligent Imaging

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Early diagnosis of cancer can lead to better patient care and better outcomes. In particular, the use of intelligent imaging technology along the patient's journey, from screening to diagnosis to treatment, monitoring and follow-up, is essential. HealthManagement.org spoke to Dr Ben Newton, General Manager, Oncology at GE Healthcare, to discuss his views on integrated cancer care, the optimum use of imaging data and clinical information, the importance of early diagnosis and the need to close the gap in cancer care.

Key Points

- Cancer is one of the leading causes of death worldwide.
- Cancer care is complex, and interruptions and delays can significantly impact patient outcomes.
- Fragmentation in terms of access or fragmentation at different levels of care or fragmentation of clinical practice must be overcome by integrating care.
- Technology can support clinicians and patients throughout the patient's cancer journey, whether it's at the stage of screening and diagnosis, determining the right treatment strategy or monitoring patient progress.
- The key is to close the gap in cancer care through early detection and more timely and advanced treatment strategies.

Integrated Cancer Care – Overview and Benefits

Cancer is one of the leading causes of death worldwide. It has an impact on life expectancy and the cost of care. Cancer care is an extremely complex process, and any interruptions and delays can change the course of care and have a significant impact on patient outcomes. It is critical to reduce the time between the appearance of symptoms, diagnosis and initiation of treatment.

The issue of uncoordinated care, sub-optimal management, fragmentation of information and the discontinuous application of interventions may be overcome by using a multidisciplinary team (MDT). An MDT can come together and integrate those datasets in defining the disease, stratifying the patient into a particular type of disease, or understanding (from a differential diagnosis) the exact nature of the problem. These teams consist of radiologists, surgeons, nurses and pathologists coordinating care as a multidisciplinary team, bringing all the strands of evidence together to determine what the symptoms mean. Also, using multidisciplinary teams helps develop ownership at every level and allows clinicians and radiologists to give their input as they are the ones who are delivering care. Bringing together all these colleagues and promoting co-creation and collaboration can only benefit the patient in the long run.

Integrated care can help reduce the gaps in the cancer care pathway and bring patients and caregivers closer together

The goal of integrated cancer care is to propel new thinking, transform care pathways, and better utilise imaging data technology. One of the biggest challenges in cancer care is the lack of consistency. There are nearly 20 million new cancer cases annually, and patients are distributed across the globe. Different health systems have different practice methods, and diagnosis and treatment vary by location. Along the patient care pathway, patients can get different tests done in different locations. They may also interact with several different caregivers along this journey. In addition, patients in rural areas may not have access to the same quality of care or treatment technology. Finally, there are always issues of coordination among the different care providers. Hence, this fragmentation - whether its fragmentation in terms of access or fragmentation at different levels of care or fragmentation of clinical practice - must be overcome through the integration of care and through an overall improvement in screening programmes, faster access to diagnostic tests, use of cutting edge treatments and technologies and personalised treatments. Integrated care can help reduce the gaps in the cancer care pathway and bring patients and caregivers closer together.

Optimising Imaging Data and Clinical Information

A great deal of information is generated at different points in the patient care pathway. Maximising the use of data – imaging data, digital pathology data etc. – can help clinicians draw better insight and make more effective treatment decisions due to improved access to this information. The goal is to enhance the use of the massive amount of clinical information that is available to drive better decision-making and facilitate consistency within the cancer care pathway. Ultimately, the biggest benefit of integrated cancer would be to deliver care to the patient as early as possible and improve their access to treatment.

Data-driven cancer care is the future. More effective utilisation of electronic health records and radiology information systems, imaging and other medical data can help to simplify cancer care and reduce fragmentation and variation.

Integrated Care and Technology

The goal of integrated care can become possible through the use of technology. Technology can pave the way to allow clinicians to deliver earlier diagnosis and use more accurate treatment strategies. This can go a long way in improving the health outcomes of cancer patients. Hence, advanced technology and intelligent tools can be used to connect different imaging networks, enable early cancer detection, improve access to treatment, and promote high-quality, personalised care. Technology can support clinicians and patients throughout the patient's cancer journey, whether it's at the stage of screening and diagnosis, determining the right treatment strategy or monitoring patient progress. It can support and integrate cancer patient data from multiple sources into a single resource that clinicians can use to make optimal clinical decisions. Digital technology can be used to pull information into a centralised framework to display the pathology, the imaging, the medical records and the genomic information that is becoming even more critical to defining the right kind of treatment.

The Importance of Early Diagnosis

Early diagnosis and treatment are crucial to improving the survival rate of cancer patients, and innovative technology and improved patient care models can help facilitate faster diagnosis, as well as more precise treatments.

advanced software engineering techniques can support the goal of personalised and precision cancer care and help integrate clinical, imaging and genomic data from multiple sources into a single interface. Ultimately, integrated cancer care is designed to try to diagnose every cancer patient and

Triaging patients from screening into diagnosis more efficiently can transform cancer outcome

To help improve patient outcomes, cancer care needs to be less siloed and more efficient. Education, awareness, and specificity around testing and screening for multiple risk factors associated with disease and putting those risk factors together with presentation-based information are important for early diagnosis. Once a patient gets into the system, integrated cancer care strategies can help drive and support the triage of patients in the right diagnostic pathway and facilitate definitive diagnosis.

Cancer care is a journey and this journey needs personalised solutions from diagnosis through every stage of treatment - efforts must be made to use the right tools for the right patient at the right time.

Closing the Gap Through Earlier Detection

Moving into precision medicine and using advanced diagnostic tools can improve cancer diagnosis and survival. The future of cancer care is not just developing and introducing new equipment - it is about providing better patient care and using improved solutions and advanced technology designed to improve patient outcomes.

It is important to identify the patients that need care and follow-up after the initial screening process. It is equally important to improve the diagnosis of all types of cancer. Triaging patients from screening into diagnosis more efficiently can transform cancer outcomes. The use of Artificial Intelligence (AI), machine learning (ML) and other

provide these patients with the treatment they need as early as possible so that they can have a better chance of survival. Numerous patients do not have access to asymptomatic cancer screening. They only seek treatment or attention when symptoms appear, but these delays can have a significant impact on their chances of survival. Some patients with false positives are subject to invasive procedures that they may not need at all. This is not only harmful and stressful for the patient, but it also takes up valuable healthcare resources. The challenge is to get patients who are truly positive into treatment quickly and efficiently. This can transform cancer care and improve outcomes while the strain of late diagnosis can be devastating for patients and healthcare systems.

Conclusion

Early diagnosis of cancer can lead to better patient care and better outcomes. Over the years, there have been many important developments in the diagnosis and treatment of cancer through the use of imaging technology along the patient's journey - from screening to diagnosis to treatment, monitoring and follow-up. To help continue to drive improved patient outcomes, integrated cancer care that includes the use of cutting edge treatments and technologies, as well as improvement in screening programmes, faster access to diagnostic tests, and personalised treatments is critical to helping reduce the gaps in cancer care. ■