

Attending from afar: the evolution of cancer care follow-up

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After the conclusion of initial treatment, the majority of cancer patients commence regular structured follow-up.^{1,2} Patients often enter an “active surveillance” program that consists of semi-regular imaging assessments and blood test evaluations for an extended period of time.³ Generally, the objective of this form of care is to assess for treatment efficacy and disease recurrence, while providing ongoing support for both patients and their families.⁴ While the timing and composition of cancer care follow-up varies based on institutional and national guidelines, a common feature of this structured form of care is face-to-face consultation with a cancer specialist.⁵

Evidence for Follow-Up and Testicular Cancer

Numerous studies demonstrate that patients find psychosocial supports provided through specialist care follow-up to be beneficial.⁶⁻¹² It is important to note, however, that frequent hospital follow-up is associated with unnecessary medical investigations, false hope, and patient anxiety.^{4,13} Cancer survivors are often left with physical, financial, and emotional challenges following pharmacological, radiological and surgical interventions.⁴ Indeed, transportation, childcare, elder care and the need to attend multiple clinical commitments can make this stage in the cancer care continuum particularly burdensome for patients.¹⁴ Nonetheless, for neoplasms that are highly curable at relapse, like seminoma and non-seminoma testicular cancer, it is imperative to implement protocols promoting close follow-up.¹⁴ Depending on the form and stage of testicular cancer, the University Health Network (UHN) testes cancer guidelines promote a follow-up period of 5-10 years and periodic investigations using blood markers (AFP, beta-HCG and LDH), as well as computed tomography imaging of the abdomen and pelvis, and the thorax.³ Physical examination is not sufficient to demonstrate relapse and pathological progression in these patients. Similarly, the literature demonstrates that aggressive follow-up of colorectal and breast cancer patients with markers and imaging confers a survival advantage.¹⁴

The Current State of Follow-Up Care

While the model of in-person follow-up may allow a physician a more effective means of evaluating, examining, and building rapport with patients, it is becoming increasingly apparent that this method of administration is neither practical nor sustainable.^{1,2,4,14}

Firstly, access to care can be profoundly difficult for the subset of patients who do not live within close proximity to their healthcare provider. Distance creates logistical and financial challenges for patients who are required to attend multiple clinic appointments. A study of testicular cancer patients from the UK revealed that individual clinic visits cost patients £72 in both travel expenses and time off work.¹⁵ This figure can mount into a daunting hurdle for cancer survivors who require care frequently and longitudinally. Indeed, these challenges in the access of care may partially explain the poorer outcomes observed in patients living in rural versus urban settings.¹⁶ Woldu and colleagues demonstrated that distance from hospital is independently associated with all-cause mortality in testicular cancer patients.¹⁶ Moreover, the rapidly aging population and improved methods of detection and treatment have resulted in a greater number of both cancer patients and survivors.^{1,14} Consequently, there is an increased demand on specialists to provide high-quality care for a larger population of patients without a compensatory increase in resources. To provide optimal cancer care and accommodate for the limited specialist resources available, novel and pragmatic interventions are an absolute necessity.

Innovations in Follow-Up Care

Telehealthcare, defined as the technology used to provide personalized healthcare to patients at a distance, has the potential to administer appropriate care for prevalent chronic conditions.¹⁷ Implementation of this technological innovation has assisted in overcoming the daunting barrier of providing quality healthcare to persons living in remote communities by supplying health practitioners with a conduit to deliver meaningful and impactful care to patients, irrespective of location.^{18,19}

Prior to the application of telecommunication technology, the University of Kansas Medical Center offered “fly-in” outreach oncology services to bridge the gap in access to specialty care between rural and urban communities.²⁰ As part of this program, physicians periodically travelled to remote areas to deliver care close to home. However, the economic and logistical burden of this face-to-face approach proved too resource-intensive to maintain. The advent of face-to-screen communication through interactive tele-video conferencing allowed for real-time interaction between healthcare providers and patients, irrespective of geography.^{20,24} The clinical- and cost-effectiveness of tele-oncology consultation has since been substantiated in the literature.^{24,28} In a recent study conducted by the Massachusetts General Hospital and Brigham and Women's Hospital, investigators found no significant difference in outcomes, including the need for specialty consultation or inpatient hospitalization, between virtual follow-up via a secure website and

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in-person office visits for patients with hypertension.²⁹ The study authors noted that these findings support scaling the concept of online monitoring to other chronic diseases. As the fulcrum of medical management shifts from hospital to home, virtual clinics represent a promising approach to facilitate the dispensation of interprofessional care to vulnerable patients, namely individuals living in rural areas and those who are marginalised.

This concept of providing an alternative to expensive and time-consuming in-person follow-up visits can significantly preserve financial resources, increase efficiency, improve patient satisfaction, and reduce hospital staff workload.^{4,30} These factors are substantiated by the fact that Princess Margaret's Multidisciplinary Testicular Cancer Clinic consults with more than a quarter of all testicular cancer cases in Ontario.³⁰ For these reasons, this form of virtual clinic may be able to serve as a sustainable method of providing a high-level of healthcare and act as a catalyst for favorable outcomes for patients living in rural regions.

The Watchman Study

A novel technological mode of healthcare provision is being implemented by the Multidisciplinary Testicular Cancer Clinic at the Princess Margaret Cancer Centre in Toronto. The WATCHmAN (Web virtuAl Testicular CANcer Clinic) is an online platform that provides a secure means of virtual follow-up for patients with stage I testicular cancer.³⁰ While it is currently being evaluated in a randomized clinical trial, the WATCHmAN interface provides a seamless line of communication between practitioners and patients. Through this program, patients can not only view their imaging/blood test results and practitioner comments, but also express concerns to their physicians regarding their health and receive reminders of upcoming appointments and testing.³⁰ As such, this multi-dimensional technology will allow physicians to appropriately respond to both testing results and patient concerns, in addition to ensuring that their patients are compliant with their care plans.³⁰

The Limits of Virtual Follow-Up

The American Urological Association has acknowledged that appropriate patient selection and services for telemedicine programs are important.³¹ While face-to-screen communication can augment traditional care, these initiatives do not negate the need for adequate history, examination, and a proper patient-physician relationship. Physicians should not offer prescriptions unless these recommendations are satisfied, and providers must be transparent regarding their inability to perform an in-person physical exam.³¹ Audio-visual resolution must be sufficient to ensure clear communication and suitable evaluation of health concerns. Furthermore, protection of patient privacy is of utmost significance and the utilization of encrypted networks is highly recommended.³¹ Accordingly, the practice of telemedicine should comply with the applicable local and federal laws of the jurisdiction of the patient.³¹ Overall, the advent of telemedicine will provide improved access to subspecialists and urgent care, care coordination, and patient choice. Despite its promises, this technology remains an uncharted territory for many clinicians and imperfections muddy regulatory and practice guidelines.

Conclusion

Technological innovation has given rise to a sense of opportunity among healthcare professionals who are interested in adopting these new modalities to improve patient outcomes. The advent of virtual clinics, as outlined by the WATCHmAN trial, have the potential to revolutionize specialist consultation by lowering barriers, including provider distance, travel and related expenses, and accessibility of services.^{1,2,4,14,15,16,20} In a healthcare system facing resource scarcities, this technology-driven approach can enable patients to be monitored on an ambulatory basis and reduce the number of unnecessary hospital visits.^{20,22,28} Although broadband availability is practically ubiquitous in North America, a digital divide in access and use of requisite devices remains a potential impediment to the dissemination of this treatment format.^{32,33} Concurrently, policy-makers will need to develop an interface between the rigorous review process of evidence-based medicine with the "fail fast" attitude of the technology sector.³⁴ While the advantages and disadvantages of espousing these innovations weigh in the balance, face-to-face communication and the human experience remains a cornerstone of the medical profession. The medical community eagerly awaits the results of the WATCHmAN trial and the ripple effect it might have on the future of patient care.

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