

## Cancer and Telemedicine

BY RASHID BASHSHUR, PHD

**W**hen diagnosed with cancer, the typical patient responds with trepidation, anxiety, and fear. This experience engenders a bewildering set of questions, including the cause, treatment options, prognosis, appropriate sources of care, and affordability. Of paramount importance is ready access to expert resources with the requisite knowledge and skill. Telemedicine is a modality of care that addresses all these issues.

### *How is telemedicine advancing the delivery of immunotherapy in the community setting?*

The underlying technology of telemedicine has become an indispensable utility in all sectors of modern society. Of relevance here, it facilitates the entire spectrum of cancer care, including prevention, screening, diagnosis, treatment, rehabilitation, and end-of-life care. Moreover, the wide availability of electronic medical records (EMR) expedites intra- and inter-institutional connectivity, thereby assuring continuity and quality of care, the issues of interoperability and security notwithstanding.

Telemedicine enables providers to support the adoption of healthy lifestyles as an integral part of the clinical care process. It facilitates patient-provider communication at various levels, enhances patient compliance with the prescribed regimen, enables the development of virtual tumor boards, and facilitates remote patient recruitment in clinical trials.

Patients diagnosed with cancer find themselves urgently seeking information on interpreting symptoms, benefits and risks of therapeutic options, when to seek care and where to go, and what lies ahead. Patients living in medically underserved areas are especially vulnerable and their resources may be limited. Telemedicine connectivity mitigates their isolation, and potentially enables them to remain in their home communities while their therapy is guided by a distant provider.

Clinical depression is often associated with cancer. While family members and friends can provide support, psychological and psychiatric therapy may be indicated. The requisite expertise is often in short supply and geographically inaccessible. Here again, telemedicine can enable diagnosis and treatment from a qualified resource. This can be complemented via voluntary informal support networks, enabled by the internet. Informal support networks can help with ongoing problems, and the service is free. Some of the information on the internet may be dubious. Hence, clinical professionals should vet veracity and content, where possible.

Telemedicine enables providers to assist patients in humane and dignified end-of-life care, rather than be left to self-reliance. This includes minimizing pain and suffering, monitoring and addressing their issues, and promptly responding to their questions.

After more than half a century, telemedicine has moved into mainstream medicine. Many cancer programs already benefit from the integration of telemedicine into their clinical practice through portals for patient-provider communication, virtual tumor boards, and integrated multisite delivery networks. Looking ahead, advances in artificial intelligence, robotics, data analytics, nanotechnology, and genomics should be integrated with the connectivity of telemedicine to usher in future cancer care and, indeed, the integrated health delivery system of the future. This would fulfill the promise of precision medicine to deliver the right treatment, to the right patient, at the right time—both efficiently and effectively.



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