
Telemedicine/Telehealth: A National Development Tool and Economic Engine

Max E. Stachura, MD
Center for Telehealth
Medical College of Georgia
Augusta, Georgia, USA

Telemedicine, or more broadly telehealth, is no longer an experiment. To different degrees, almost all nations are exploring its place and potential in national systems of healthcare. In addition, because telecommunication technology is at its core, it can transcend national boundaries to impact, and be impacted by, globalization. It is a tool that nations can use within their borders to address their internal health, societal, and economic issues. It also has the potential to help shape collaborations to assist resource-challenged nations with internal issues of population health and the economics of healthcare. Further, it can facilitate international approaches to global issues of aging, infectious disease, health care disparities, public health, and the health-related problems that result from natural and man-made disasters or from conflicts.

This symposium explores this multidimensional concept of telehealth and its potentials focusing on a case study of an European country with a long and successful history of using information technology (IT) in healthcare; two European countries collaborating for mutual interest; and, an Eurasian country with a vast territory over which healthcare issues must be addressed. Together, the contributors provide insight concerning the questions of

telemedicine/telehealth as an economic engine, and of the barriers between unrealized and achieved potential.

The first article by Bergmo and Johannessen focuses on telemedical dissemination of expertise and Health Information Technology, exploring if they "... have met the expectations and fulfilled the potential for improvement in health..." and examining the slowness of telemedicine's diffusion into mainstream use, but also documenting areas of stimulated economic activity attributable to telemedicine. The second article authored by Cholewka reviews the collaboration between Lithuania's Kaunas Medical University Hospital and Sweden's Lund University Hospital/Uppsala University in leading a team aimed at improving Lithuanian pathology, with the potential for program expansion to other Baltic and post-Soviet countries, as well as for extension into other disciplines. Khasanshina and Stachura's article highlights the socio-economical impact of telemedicine in the Russian Federation, in particular the impact of Soviet-era medicine, recent national decisions to accelerate telecommunication infrastructure deployment, and the shift in resource requirements that occur when health policy focus includes chronic disease management.

All authors point out that telehealth diffusion is slowed by several issues: (a) the capital intensiveness of the industry, (b) the fact that existing healthcare and healthcare institutions have legacy organizational systems in place whose change, even if beneficial, would require substantial investment in training and procedural re-organization, (c) the confidentiality, privacy, and responsibility issues that complicate data banking, distribution, and access in healthcare when compared to other business applications of information technology, and (d) the current state of published literature which demonstrates telemedicine-

improved healthcare quality, but lacks substantial documentation of improvements of enhanced quantity and decreased cost issues.

Unquestionably, more quantitative information is needed to answer the question posed in one of the articles, that "... telemedicine for diagnostic and treatment purposes has reached its potential or that the potential is less than anticipated." The major future impact of telemedicine may, on the other hand, come from a direction cited in another of the articles. "Aging of the Earth's population will dramatically increase the number of patients who will require increased and often continuous monitoring by medical personnel." Telemedicine technologies should have a large positive impact on the resource requirements arising from this global development.

How does one ask whether telemedicine/telehealth is diffusing, being adopted, or exhibiting qualitative and quantitative cost-effectiveness? The problem is that there is not one single answer to these broad questions. Rather, the questions must be asked specifically, about individual applications, with careful testing of whether defined programmatic goals were met. Telemedicine/telehealth is a multi-faceted tool with great potential to benefit both the individual and society as well as both the individual nation and the global society of nations. As highlighted in the three articles, evaluation must be quantitative and specific, but must also recognize that telemedicine's individual, societal, national, or global adoption, diffusion, and success will be as much a question of value as it is of cost. Cost can be acceptable if it exceeded by value.