

► E-health and the Universitas 21 organization: 3. Global policy

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Summary

There is an urgent need to develop global e-health policy in order both to facilitate and to manage the potential of e-health. As part of the Universitas 21 (U21) project in e-health, an evaluation of the status of global e-health policy was performed using a SWOT analysis (strengths, weaknesses, opportunities and threats). The analysis showed that the greatest threat to global e-health policy is the autonomous nature of domestic health-care systems. The greatest opportunity may be the prospect for nations and individuals to work together in establishing mechanisms necessary to offer health-care access through global e-health – a new ‘global public good’. Full integration of e-health into existing health-care systems could be achieved in both a practical and a policy sense through global e-health policy initiatives that facilitate integration across jurisdictions. There is a pressing need to resolve a range of e-health policy issues, and a concomitant need for research that will inform and support the process. A process that adopts a global approach is recommended.

Introduction

The development of information and communication technologies (ICTs) and their application in health have been rapid and pervasive.^{1–3} Such ICT applications have been termed telemedicine, telehealth or – more recently – e-health. Here, e-health is considered to be an umbrella term composed of two elements – health informatics (related to the *collection, analysis and movement* of health information and data to support health care) and telehealth (related to *direct [e.g. videoconsultation] or indirect [e.g. Website] delivery* of health information or health care to a recipient).⁴ It encompasses products, systems and services that go beyond simply Internet-based applications, and includes tools for health authorities and professionals as well as personalized health systems for patients and citizens.⁵ Advances in ICT continue to outpace the development of supportive policies, infrastructures and improved health-care access across and between nations.^{6,7}

Pilot e-health projects in industrialized and developing countries have demonstrated increased equity of health-care delivery, thereby improving access to health-care services that benefit underserved populations. E-health also has the potential to improve access to continuing professional development, and to health literature to support citizens as well as health professionals in research and care.

Factors such as globalization, global health and e-health are having a synergistic effect on health care throughout the world, and their convergence has given rise to a new concept – global e-health.⁸ Although the potential for global e-health is great, there is a notable absence of inter-jurisdictional policies, or even guidelines, to support and manage inter-jurisdictional e-health.^{9,10} Instead, there is increasing development of e-health policy at local levels, although rarely at national levels.¹¹ Such *ad hoc* development hinders health authorities from integrating e-health and delivering e-health across regions or between countries.^{12,13}

Policy decisions related to e-health will significantly affect the future availability, acceptability, effectiveness and cost of e-health services around the world. Organizations such as the World Summit of the Information Society (WSIS), the World Health

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Organization (WHO), the Pan American Health Organization (PAHO) and the World Trade Organization (WTO) are debating issues about global trade and health services, including e-health. Yet, there remains a lack of global leadership, coordination and focus on e-health policy formulation.

Scenario

Consider the following scenario. A woman has recently returned home after three months voluntary service in the Amazon jungle of Brazil. She lives in a small town in Alberta, Canada, about 1200 km from a major urban city, and is suspected of having a rare, debilitating and potentially fatal tropical disease. There is no suitable specialist within her local community or province. However, her family physician knows that Alberta has an extensive telemedicine network that provides networked services, and has a functional electronic health record (EHR) system that provides comprehensive health-care information, accessible remotely in a secure manner.

The family physician decides to use telemedicine to consult a tropical diseases expert in Mexico to determine a diagnosis. The patient readily consents to participate. The chief information officer of the local hospital, a telemedicine proponent, approves the cost of the connection. Subsequently, the senior administration learns of the proposed videoconsultation and raises a number of concerns.

What certification and training does the expert in Mexico have? Is her expertise recognized in Canada? Is remuneration expected? How would the local hospital deal with a request for remuneration? Who has accountability for clinical decisions? Will the hospital be liable? Can clinical standards in Mexico be considered equivalent to those in Canada? Does this consultation fall within the expert's scope of practice? How does recently introduced provincial and national privacy legislation affect the interaction? What of consent, protection of health information, access authorization and authorization to enter data into a patient EHR? Are there any regional, national or international rules that might affect the teleconsultation? Will this open the floodgates for future requests? Confusion and doubt reign.

After some time, an alternative consultant is identified in the province of Quebec. Although this consultant is within Canada, the now sensitized members of the senior administration raise many of the same concerns as barriers to proceeding. In the end, the videoconsultation is cancelled indefinitely 'due to technical difficulties'. The patient's condition then worsens and there are fears for her life. Arrangements are made for an air evacuation of the patient to a

tertiary care centre, unaccompanied by family members, for observation. A subsequent telephone consultation with the Mexican expert reveals a simple treatment that could have been initiated locally!

This scenario illustrates a host of real and perceived policy issues, not least of which is the interesting question of whether the family physician could be considered liable for *not* using e-health when there were reasonable grounds for supposing that it would help his patient.

In a global environment that is rapidly moving towards a citizen-centred and networked model of health care, this policy void is untenable. There is clearly a dual standard for some forms of e-health (e.g. videoconsultation) versus others (e.g. telephone consultation). The situation could be largely eliminated through the development of common, globally accepted principles, from which would arise complementary global and local (i.e. glocal) e-health policy options and directions. 'Glocal' is a term that has appeared recently in the global health literature, and is a blend of 'global' and 'local'.¹⁴ The term provides a reminder of a simple but crucial fact – in our networked world, local policy has global impact and global policy has local impact.¹⁵

The aim of the present study – which was part of the Universitas 21 (U21) consortium's work in global e-health¹⁶ – was to summarize the status of global e-health policy.

Methods

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An evaluation of the status of global e-health policy was performed using a SWOT analysis (strengths, weaknesses, opportunities and threats). Although the SWOT analysis was originally designed for use in an industrial environment, it is a general tool that can be used in the preliminary stages of decision making and as a precursor to strategic planning in various kinds of applications.¹⁷ It has been applied in the health sector on a limited basis.¹⁸ The intent was to capture the essence of, rather than the detail and spectrum of, global e-health policy issues.

To complete the SWOT analysis, members of the U21 e-health steering committee with a policy-related background carried out a focused literature review, debated the issues and prepared a report. The results of the literature review, plus articles identified in a hand search, were shared, reviewed and debated, and key features were extracted and incorporated into the SWOT framework.

Results

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Threats to global e-health policy

Modern transportation and infrastructure can provide worldwide access to anyone or anything within a day or two of travel and this has affected patterns of disease emergence, transmission, treatment and research. This reality, combined with the recent evolution of e-health to embrace networked access, has effectively ushered in a 'borderless world' for health care. The concept of a 'borderless world', however, is a characteristic that does not fit easily into traditional national or regional (local authority) health-care systems. Each domestic health-care system has sovereign and autonomous authority in developing its own policy, which may conflict with the policies of other jurisdictions. Consequently, the greatest threat to global e-health policy is the autonomous nature of domestic health-care systems.

Perhaps the second greatest threat is the current *ad hoc* and reactionary approach to developing e-health policy. Local health-care institutions are often faced with practical barriers to implementing an e-health solution. They react by creating *ad hoc* and local policy that will overcome the immediate barrier. However, inappropriate policy developed and enforced in any single jurisdiction may at least hamper, perhaps cripple, the ability of e-health to achieve its global potential, denying much of the world population equitable access to enhanced health care.¹³

It is thus essential to understand the current or anticipated policy issues that may affect global e-health, to address them in a coordinated manner and to realign domestic policy to facilitate complementary approaches between countries.

Opportunities for global e-health policy

The greatest opportunity may be the prospect for nations and individuals to work together in establishing mechanisms necessary to offer health-care access through global e-health – a new 'global public good'.¹⁹ This will require coordinated effort, which has been historically lacking. For example, in 1995, the European Commission introduced legislation that superseded accepted guidelines for the protection of privacy and transborder flows of personal data.²⁰ The European Union (EU) legislation required other countries doing business with EU countries to have a regulatory system in place to protect personal information, and required businesses to adhere to 'fair information practices'.²¹ This EU legislation had global effects, but there was no prior global consultation or debate. Response to the EU's Directive was required

worldwide and was considered reactive, creating opportunity for potentially restrictive policy development.²²

More recently, the EU has described an action plan for a European e-Health Area⁵ involving action over several policy areas. This builds on policy measures identified in the eEurope 2005 Action Plan²³ that addressed e-government, e-learning and e-health services. Goals of the Action Plan included identifying policy measures to review and adapt legislation at national and European level and an overall coordination of existing policies. But these admirable efforts are regional in nature and will again have global consequences without prior global consultation and debate.

An urgent need exists to develop a structured process to identify and address e-health policy issues on a global basis. The precise spectrum of global e-health-related policy issues remains unknown, but the final number is anticipated to be large. In preliminary work, 34 e-health policy issues across eight themes were identified from the literature.^{24,25} Through this work two factors became apparent. First, it is difficult to consider any of the issues in isolation, since any single issue can be confounded by aspects of others. Second, the 'inter-jurisdictional'²⁶ nature of issues is pervasive, and it will be necessary to seek common solutions across jurisdictions, rather than each jurisdiction considering and responding to an issue independently.²⁵

Weaknesses of global e-health policy

A potential weakness of globally accepted e-health policy is that its very existence might be interpreted to mean that e-health solutions are to be universally adopted. There is wide agreement that e-health is not a panacea and that applications must be responsive to a demonstrated need, and developed and implemented in a culturally appropriate and sensitive manner.⁸ Given the fundamental health issues in developing countries, e-health solutions may not be the immediate answer. Developing nations, in particular, may have health priorities that supersede e-health, such as basic treatment and immunization.²⁷ In a world in which technology is often viewed as a panacea, it will be essential to formulate global e-health policy that embodies balanced application of e-health based upon demonstrated need and readiness.

Strengths of global e-health policy

An unprecedented and growing interdependence now exists between jurisdictions. Kaul and Faust¹⁹ noted that 'In today's world, globalization has brought about

interdependencies that blur the distinction between domestic and external affairs. The best way to ensure one's own well-being is to be concerned about that of others'. As a consequence, there is significant benefit to be gained from the networked flow of health information and knowledge among and between jurisdictions, some of which is now being realized through e-surveillance activities. A major strength of global e-health policy would be to permit and facilitate such flow, in a manner that is efficient yet respectful of the nuances of health-care system, culture and needs for each jurisdiction.

It has been argued that appropriate ICT policy can reduce the digital divide.¹⁷ Global e-health policy, structured correctly, would provide additional rewards. The lack of equity in health care – the 'health divide' – could be reduced through open and facilitated exchange and sharing of skills and knowledge. Full integration of e-health into existing health-care systems could be achieved in both a practical and a policy sense through global e-health policy initiatives that facilitate integration across jurisdictions.

The full spectrum of global e-health policy issues has not been systematically investigated, and is therefore unknown. Yet, e-health policy issues so far identified within and across individual regions or nations show similarity, highlighting the value of a coordinated approach to global e-health policy formulation. Finally, policy demands of one jurisdiction may impose impossible obligations on another. Coordinated global development of common principles and complementary global e-health policy will minimize the risk of developing an e-health policy divide between developed and developing countries.

Discussion

The impact of global e-health will depend on whether it is introduced as a by-product of technological innovation or as a culturally sensitive activity, integrated into national and global health-care agendas. Both common goals and tensions will exist. There is a pressing need to resolve a range of e-health policy issues, and a concomitant need for research that will inform and support the process. A process that adopts a global approach is recommended – one that identifies and formulates viable e-health policy measures that will overcome barriers, manage opportunistic gaps and ensure equitable distribution of the costs and benefits of e-health.

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