The EU and eHealth: Good for Patients, Good for Medicine, Good for the Economy

In many developed countries, the 21st century has brought dramatic changes to something as simple as a visit to the doctor's office. Today, it is possible for a physician to review a patient's medical history, lab studies, and medications on a computer, while simultaneously entering new information, responding to questions, suggesting preventive measures, printing explanatory material, and sending prescriptions directly to a pharmacy. Rather than scheduling a follow-up visit, patients and doctors can assess progress online.

Such a convergence of information and communications technology (ICT) and medicine is only the tip of the iceberg known as eHealth. As advanced economies like the EU and the U.S. grapple with the skyrocketing costs of healthcare and equitable access for their citizens, eHealth has the potential to reduce medical costs, increase accuracy and efficiency, enhance access to modern medicine, foster innovation, and create new markets.

Because the health sector is information- and time-intensive, eHealth can make healthcare more cost-effective through better management of patient records and remote diagnosis and treatment. As the populations of developed countries age, eHealth can help stretch the capacity of medical professionals when and where demand outstrips availability. Researchers use supercomputers to speed medical discoveries, and data mining and modeling can identify trends that allow providers to focus on preventing disease rather than simply treating it.

eHealth can directly benefit patients by enhancing their quality of care, improving their access to medical services, and promoting independent living for the elderly and chronically ill. Personal health systems can continuously monitor patients' health in real time, allowing health professionals to keep an eye on them from a distance. eHealth can also make it easier for patients, providers, and data to cross borders: a vital matter for EU citizens who can travel, live, and work anywhere in the EU's 27 Member States.

The European Union has staked out a global leadership position in applying ICT to healthcare. While healthcare delivery falls within the remit of the Member States, the EU complements the work of the national health systems and helps national authorities cooperate on cross-border issues. In eHealth, the EU helps to advance interoperability between health information systems, foster mobility of patients and medical professionals, enhance eHealth infrastructure and innovative technologies, and address legal and regulatory concerns.

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"Digital technologies are the greatest driver for innovation in health. In those parts of Europe where telecare has become a common practice… clear evidence tells us that the use of ICT is indeed win-win. ICT improves care efficiency, frees up hospital beds, and users love it."

European Commission Vice-President for the Digital Agenda Neelie Kroes

The EU and the U.S.: Partners in eHealth

At the Transatlantic Economic Council in December 2010, the EU and the U.S. agreed on a shared vision that would enable eHealth services to reach their full global market potential. Primary objectives include achieving a common approach to internationally recognized and utilized interoperability standards for electronic health record systems, and increased competency and mobility for IT and health professionals.

Kathleen Sebelius, U.S. Secretary of Health and Human Services, and Neelie Kroes, European Commission Vice-President in charge of the Digital Agenda, sign a Memorandum of Understanding to promote a common approach to eHealth.

eHealth at Work in the EU

The EU bolsters eHealth in Europe by facilitating cross-border cooperation in medical mobility; promoting the interoperability of health records systems; supporting industry innovation; and funding research and development that matches technology to healthcare needs.

Medical Mobility. Patients already have the option to access top specialists or their own family doctor, regardless of their location in Europe, thanks to telemedicine. New EU legislation on patient mobility clarifies a patient's right to receive healthcare in another EU country, guarantees access to reliable information on the quality and safety of potential treatments, and provides a legal framework for complaints and remedies. EU rules, based on harmonized training requirements for doctors, nurses, dentists, midwives, and pharmacists, guarantee mutual recognition of medical qualifications among Member States.

Interoperability. The EU contributes to the free movement of patients, health professionals, and services across Europe by providing guidance to Member States on the best ways to address cross-border interoperability in electronic health record systems.

The European Commission provides almost half of the funding for the €23 million Smart Open Services for European Patients (epSOS) project, which is designed to ensure interoperability from one national system to another and facilitate medical assistance for those traveling or living abroad by making patients' electronic medical and medication records readily accessible to the patient and relevant health practitioners throughout the EU. Standardizing various information exchange formats and certifying interoperable systems should effectively overcome the remaining interoperability barriers.

Innovation. The EU has designated eHealth as one of its Lead Market Initiatives, programs that draw the European Commission, EU Member States, and industry together to develop and launch products that are highly innovative, provide solutions to broader societal challenges, and have a strong technological and industrial base in Europe. eHealth was selected based on its market potential in terms of growing demand and market growth opportunities, changing demographics and disease patterns, and healthcare capabilities.

Research and Development. Since the early 1990s, the EU has invested more than €500 million in research funding to develop eHealth tools and systems, working together with policymakers, medical personnel, and IT experts. Research and development programs supported by the EU have already helped produce personal health systems enabling doctors to regularly and remotely monitor patients with chronic conditions like diabetes or cardiovascular disease, leading to earlier diagnosis of problems and more effective treatment.

Patient guidance services, also developed with EU support, gather and process large amounts of data to help policymakers and individual patients minimize adverse side effects and complications from medications, surgery, hospital pathogens, misdiagnosis, and prescription or dispensing errors.

Virtual Physiological Human, a major European initiative, is creating a computer model that simulates conditions and treatments of individual patients, providing a way to personalize healthcare. Projects include developing computational models of the heart, creating predictive models for dementia, osteoporosis, and drug safety, and furthering a common health information infrastructure to facilitate easier access to European supercomputing power.

The EU also funds grid computing projects that play a key role in research and development by providing the storage and computing power required to collect, process, and analyze large amounts of health-related data. For example, the EU-funded neuGRID allows neuroscientists to identify neurodegenerative disease markers by analyzing 3D magnetic resonance brain images. neuGRID researchers anticipate being able to monitor the effectiveness of drugs targeting Alzheimer's disease thanks to grid computer analysis of images from brain scans of affected patients.

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"eHealth applications can help prevent diseases or diagnose them at an early stage; increase patient safety; ensure continuity of care when patients move from one country to another; and improve the efficiency of health systems. They can help save lives in emergency situations where key medical data would be available one security code and one mouse click away."

European Commissioner for Health and Consumer Policy
John Dalli

On the Web

■ **Health-EU Portal:**
http://ec.europa.eu/health-eu

■ **EU Information Society and eHealth:**
http://ec.europa.eu/information_society/activities/health