IZIP, Czech Republic – web based electronic health record

IZIP is an electronic health record (EHR) system with Internet access, currently in operation in the Czech Republic. The EHR includes relevant information about all contacts of the citizen with healthcare services, compiled from regular GP visits, dental treatments, laboratory and imaging tests, and healthcare provided by hospital services. Through software modules within the electronic systems of these diverse healthcare providers, interoperability with the IZIP system is assured, and during each visit with a single "click" new data can be uploaded to the central system. With the consent of the patient, the IZIP system allows doctors to access the central EHR at the time and point of care, so that each doctor can resume treatment where the previous doctors have stopped.

The principal role of IZIP is to provide both the technical and the service infrastructure for this comprehensive record integrating medical data from individual healthcare professionals and healthcare provider organisations (HPOs), and assuring full control by the insured citizen. They have the right to access and read their own EHR, but they cannot change them. They can authorise healthcare professionals to view and update their data, converting citizens to an active participant in the healthcare system. They are thus better placed to make responsible decisions about their health, cooperate better with healthcare providers and gain a picture of the technical, resource and financial possibilities and limitations of the proposed or available services and procedures. This is a basic change compared to the conventional system of health record administration, where the HPO, not the citizen, had the power to disclose information.

The internet health files comprise structured parts of the medical documentation. Only healthcare professionals are authorised to insert data into the IZIP system. Records in the IZIP system contain:

- Anamnesis
- Results of examinations performed by a GP or specialist, in chronological order
- Results of laboratory tests and examinations
- A list of prescribed and issued medicines and drugs
- X-rays, scans and other images
- Reports on hospitalisations
- Vaccination history
- Information on other treatments, including type and location.

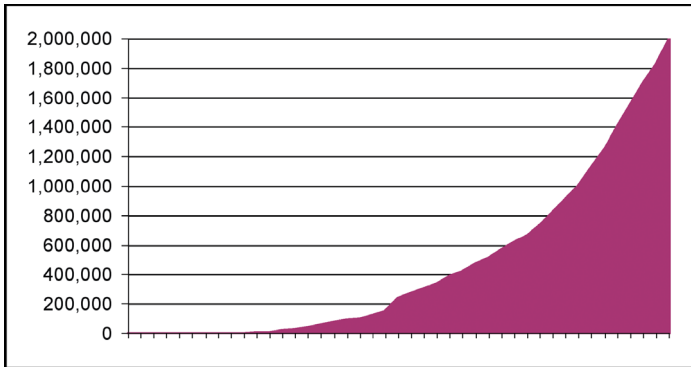
Modules to be introduced in the near future include ePresribing, emergency service support, and messaging among healthcare providers and with the patient. Plans for further development beyond these include smart cards and digital signatures and improved structuring of the data in the health records, enabling expanded statistical and clinical analyses.

Data security is currently guaranteed by a password and PIN system. Healthcare professionals have to register with the system and can log in using their own password and PIN, identifying them as professionals. Various security enhancement measures have been developed and are in the implementation stage.

The system was developed by a private company, IZIP Ltd., in cooperation with the General Health Insurance Company of the Czech Republic (GHICCR) which insures about 2/3 of all Czech citizens. It has spread over the whole of the Czech Republic since the beginning of 2003. Discussions with healthcare authorities in other countries are underway to expand similar services to their jurisdictions.

It took 7 years to achieve an annual net benefit and8 years for a net benefit on a cumulative basis. The estimated net annual benefit in 2008 exceeds € 60million. The estimated productivity gain, measured as the decrease in the cost of using a record, was found to be 74%. Citizens, having control over the information on their health history and access to it, as well as avoiding unnecessary interventions, are estimated to receive about 10% of total gains. Doctors and other healthcare providers have access to the full medical account of the patient at the point and time of care. This leads to better care and time savings, amounting to 37% of the direct benefits estimated. The biggest partner of IZIP, the General Health Insurance Company of the Czech Republic benefits from avoided duplicative tests, treatments and other interventions, estimated at 53% of the economic benefits.

CHART: IZIP - DEVELOPMENT OF INDIVIDUAL RECORDS 2002 TO 2007



Core impact:

- Empowering citizens – they are the gatekeepers to information about their own health
- Instant access to comprehensive patient information independent of the location of the citizen at the time of care, even abroad
- Full interoperability of core patient data and information among all healthcare providers
- Improved communication between healthcare providers and support for continuity of care
- Significant reduction in duplicative examinations and tests
- Positive net economic benefit to society.

Main beneficiaries:

- Citizens have control over the information on their health history and access to it at the point of need
- Doctors and other healthcare providers have access to the full medical account of the patient, including examination results and full list of medications at the point and time of care. This leads to better quality care and time savings
- Insurance companies and the healthcare system as a whole benefit from the costs avoided by avoiding duplicative tests and unnecessary treatment.

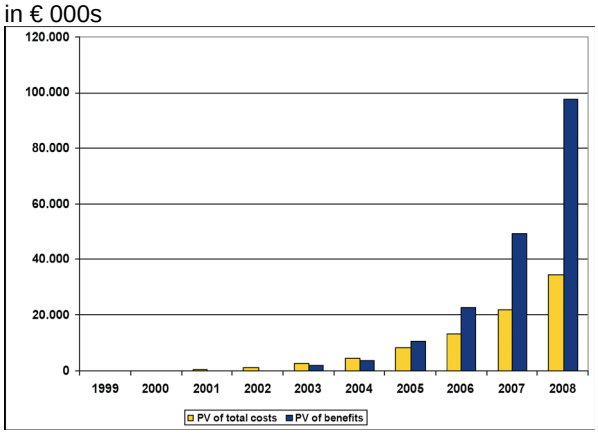
Lessons learned:

- Voluntary, but structured and well organised involvement of a wide range of stakeholders facilitates engagement and support by all health system actors
- Attention to, and addressing the needs of citizens is essential for success
- Step-by-step advancement, ensuring engagement and continuous support A pragmatic approach to flexibly develop and adapt a nationwide system creates an eHealth dynamic
- Setting achievable goals at every stage of the eHealth dynamic drives progress
- Emphasis on the first stage of the application being in routine operation early, with clear benefits to major supporters, and with frequent, comprehensive reviews of the fit with the long-term goals is helpful – no big-bang strategy
- Recognition of the importance of training for users, be they professionals or patients
- Patience in achieving complex change in a complex national setting is a necessary requirement for success.
- Once a critical mass of records and users has been achieved, usage will grow exponentially.

Economic results:

- First year of annual net benefit, i.e. when annual benefits exceed annual costs: 2005, year 7
- Estimated annual net benefit for the year 2008: approximately € 60 million
- First year of cumulative net benefit: 2006, year 8
- Estimated cumulative benefit by 2008: approximately € 180 million
- Cumulative investment costs, including operating expenditure, by 2008: approximately € 90 million
- Estimated productivity gain, measured in decrease eHealth cost per patient: 74%
- Distribution of benefits to 2008: Citizens – 10%; HPOs – 37%; Insurance company – 53%

CHART: PRESENT VALUES OF ESTIMATED ANNUAL COSTS ANDBENEFITS - 1999 TO 2008, in € 000s



www.izip.cz
www.ehealth-impact.org/case_studies/index_en.htm