

eHR Impact

The socio-economic impact of interoperable Electronic Health Record and ePrescribing systems in Europe



Is it worth investing in patient-oriented health information systems? What returns can we expect? What makes the difference between success and failure? The EHR IMPACT study provides empirically supported answers to investors and policy decision makers.

The Challenge

The great benefits anticipated from interoperable health information systems have been widely acknowledged across Europe and beyond. Even though European and national political initiatives have opened the door for the implementation of such systems, the pace of deployment has not met expectations so far. Limited knowledge about how other regions and countries achieved success, and scarce evidence on the socio-economic impact have hampered wider implementation to date.

The Approach

In support of the European Commission's efforts to foster the exchange of good practice and encourage investment in beneficial eHealth systems and services, the **EHR IMPACT study investigated the performance and impact of eHealth utilisation, with specific focus on interoperable Electronic Health Record (EHR) and ePrescribing systems in Europe.**

The goals of the study required an inductive and adaptive empirical approach. Empirical insights are based on a detailed qualitative analysis of eleven good practice cases in Europe, USA and Israel. Nine of these underwent a detailed quantitative evaluation of their socio-economic, and the narrower, financial impacts within the socio-economic perspective. Each application studied is a sustained solution in routine operation. The analysed case studies are:

- The Emergency Care Summary of NHS Scotland, UK
- The Computerised Patient Record System at the University Hospitals of the Canton of Geneva, Switzerland

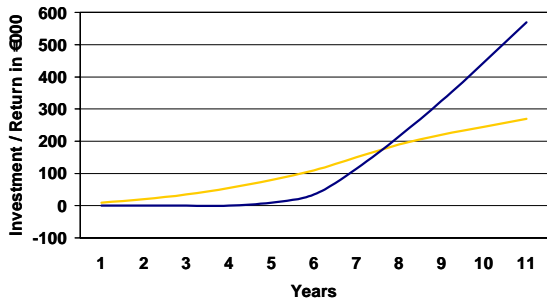
- The hospital information system at the National Heart Hospital campuses in Sofia, Bulgaria
- The regional EHR system Diraya in Andalucía, Spain
- The regional ePrescribing system Receta XXI in Andalucía, Spain
- The regional integrated EHR and ePrescribing system across Kronoberg County, Sweden
- The Kolín-Čáslav regional health data and exchange network, Czech Republic
- Dossier Patient Partagé Réparti (DPPR) – Shared and Distributed Patient Record platform in the Rhône-Alpes region, France
- The health information platform Sistema SISS in the region of Lombardy, Italy
- The nation-wide health information network in Israel – qualitative report
- The EHR system at NorthShore University HealthSystem, USA – qualitative report.

The EHR IMPACT evaluations rely on a bespoke analysis with two start points. One develops an understanding of each case study's individual setting, such as political, healthcare and ICT-related particularities. The other identifies relevant impacts over time. All stakeholder perspectives are included in a socio-economic evaluation based on cost benefit analysis (CBA) that extends over a long timescale.

Empirical data is derived from more than 20 site visits, access to internal accounting reports and 100 face-to-face interviews across all sites. Calculations involved some 2000 variables in 730 cost and benefit functions created for the nine quantitative evaluations.

The Outcomes

For all cases analysed, the gains to society justify the net financial boost needed for eHealth investments. A successful development can reach a cumulative socio-economic return (SER) of close to 200%, with an average for the EHR IMPACT cases of almost 80%.

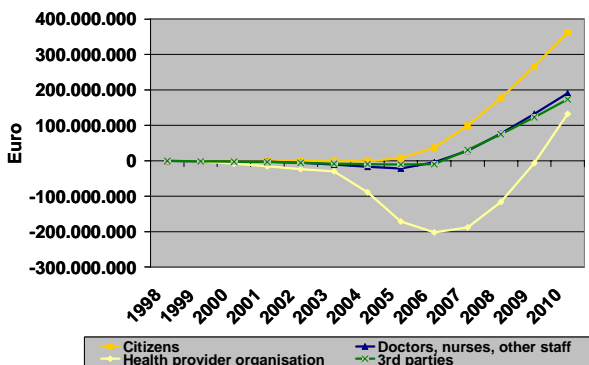


— Socio-economic cost curve — Socio-economic benefit curve

Generic cumulative value of socio-economic impact: illustrative absolute values in Euro

Negative impacts include initial and ongoing eHealth investment, such as ICT-related and organisational costs. The latter range from initial irritation of healthcare staff to more time-consuming working procedures. The total value of invested financial and non-financial resources at the evaluated sites was extremely wide, ranging from €3 million to nearly €480 million, over between 9 and 13 years.

Benefits are classified according to impacts on quality, access, and efficiency. They come under very broad, diverse categories, like increased patient safety or healthcare teams' comfort from better-informed decision-making. In their concrete instances they are very individual and specific to the respective context of an investment. What they have in common is that interoperability is a prime driver of benefits.



Value of cumulative net benefits per stakeholder group - aggregate from the nine quantitative EHR IMPACT case studies

General findings are: (1) EHR and ePrescribing systems are beneficial socio-economic investments in better healthcare, but, except in very specific circumstances, need net cash injections. (2) **Successful EHR and ePrescribing investments are not quick, but sustainable wins.** It takes at least four and, more typically, up to nine years before initiatives produce their first positive annual SER, and six to eleven years to realise a cumulative net benefit.

What's next?

The strategic recommendations of the EHR IMPACT study should encourage and support future initiatives through learning from the successes achieved by the eleven cases. The strategic recommendations are:

- Policy makers must create an eHealth enabling framework, imbedded in a goal-driven health policy context.
- Development of eHealth systems should be a never-ending story.
- The right approach is the one that fits best the specific needs of the regional context.
- The strategic goal should be better healthcare, not cash savings.
- Interoperability, leadership and engagement are requirements for success.

Partners:

empirica Gesellschaft für Kommunikations- und Technologieforschung mbH, Bonn, Germany
TanJent Consultancy, Hereford, UK

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Important Links:

Study website: <http://www.ehr-impact.eu/>

eHealth studies: http://ec.europa.eu/information_society/activities/health/studies/index_en.htm

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