

# EHR IMPACT

## Study on the socio-economic impact of interoperable Electronic Health Record and ePrescribing systems in Europe

**EHR IMPACT** investigated the socio-economic impact of eHealth utilisation, with specific focus on interoperable Electronic Health Record (EHR) and ePrescribing systems in Europe. Going beyond simple financial analysis, the study provides investors and policy decision makers with evidence on the potential of eHealth systems, and insights on how to realise this potential.

### Objectives of the Study

The great benefits anticipated from interoperable Electronic Health Record (EHR) and ePrescribing systems have been widely acknowledged across Europe

**“11 case studies across Europe and beyond provide evidence on the impact of interoperable EHR and ePrescribing systems.”**

and beyond. Even though European and national political initiatives have paved the way for the implementation of such systems, the pace of deployment has not met expectations so far.

Limited knowledge about their background and scarce evidence on their socio-economic impact have hampered wider implementation to date.

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 objectives of the EHR IMPACT study were to:

- Identify and apply state-of-the-art methods for detailed qualitative and quantitative socio-economic impact analyses to implemented interoperable EHR and ePrescribing systems across Europe and beyond
- Disseminate the gained evidence and lessons learnt to the wider public
- Develop policy recommendations to foster the faster diffusion of such eHealth applications.

### Study Description

**Core to the project is a detailed qualitative analysis of eleven good practice cases in Europe, USA and Israel.** Nine of these underwent also a quantitative

evaluation of their socio-economic impacts. Each application studied is a sustainable 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 Sofia, Bulgaria
- The regional EHR and ePrescribing 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 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 regional Healthcare Information System in Lombardy, Italy
- A nation-wide health information network in Israel – qualitative report
- The NorthShore University HealthSystem, Evanston, IL (Chicago), USA – qualitative report

An EHR IMPACT evaluation relies 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 from an initial hypothesis.

All stakeholder perspectives are included in a socio-economic evaluation based on cost benefit analysis (CBA) that extends over a long timescale. CBA also enables the narrower financial components within the costs and benefits to be identified and analysed separately.

#### CASE STUDY: THE EMERGENCY CARE SUMMARY, SCOTLAND, UK

Scotland's Emergency Care Summary (ECS) provides up to date information about allergies and GP prescribed medications for authorised healthcare professionals at the Scottish national health *call* centre NHS24, Out of Hours (OOH) services, and accident and emergency (A&E) departments. Since 2008, over 98% of GP practices participate fully in ECS, and 99% of the population have an ECS record. Total utilisation in 2008 is estimated at about 121,000 per month. The overarching benefit is improved patient safety. Clinicians benefit as they have access to valid, current, and reliable patient information.

The EHR IMPACT analyses show a financial position where extra cash of some £ 5.5 million has been invested over nine years to realise non-financial benefits and redeployed finance of over £ 21.6 million. Annual net benefits are realised by 2008, seven years after planning started and five years after initial implementation in two pilot sites. The overall socio-economic return, measured by the accrued net benefits to costs ratio, is estimated to turn positive in 2012.

Empirical data is based on more than 20 site visits 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.

## Outcomes

Next to the eleven individual case study reports, the final study report summarises the empirical evidence and gives specific recommendations to policy makers and investment decision makers.

**The results of the EHR IMPACT study give grounds for optimism in the success, value and deployment of interoperable EHR and ePrescribing systems across Europe.** The socio-economic gains to society eventually exceed the costs, albeit taking between six and eleven years to do so. A typical development can reach annual socio-economic returns of up to 400%.

Costs include initial and ongoing eHealth investment, such as ICT-related and organisational costs. These range from initial irritation of healthcare staff to more time-consuming procedures.

**“A typical development can reach annual socio-economic returns of up to 400%.”**

Benefits are classified as quality, access, and efficiency. They come under very broad, diverse categories, like increased patient safety or healthcare teams' comfort from

better-informed decision-making, but in their concrete instantiation are very individual and specific to the respective context of an investment. What they have in common is that **interoperability is a prime driver.**

The strategic recommendations are:

- Policymakers should create an enabling framework and context.
- Development should be a never-ending story.
- The right approach is the one that fits the specific needs and the context.
- The right strategic goal is better healthcare, not cash.
- Interoperability and engagement are requirements for success.



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### KEYWORDS

eHealth, EHR, ePrescribing, Investment, Socio-economic impact, Financial impact, Benefits, Costs, CBA, Evaluation, Assessment, Interoperability