InteropEHRate

EHR in people's hands across Europe

The road ahead: Impact assessment plan

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Socio-economic impact assessment

The process of the assessment:

- Step 1: Scoping the problem
- Step 2: Determine reference scenario if nothing changed.
- Step 3: Define the new service.
- Step 4: Define and value benefits
- Step 5: Define and value costs
- Step 6: Assess the net present value for involved stakeholders
- Step 7: Conduct sensitivity analyses
- Step 8: Assess outcomes

Methodologies reviewed

- Health Impact Assessment
- Social Return on Investment
- Program Cost Analysis
- Cost-Effective Analysis
- MAFEIP tool
- Cost-Utility Analysis
- Cost-Minimisation Analysis
- Sustainability Impact Assessment
- Multi-Criteria Decision Analysis
- Socio-economic assessment with impact multipliers
- Multi-method approach, multiple partial indicators
- Economic impact analysis
- E-Care client survey
- **Cost-Benefit Analysis**
- **Societal Cost-Benefit Analysis**

Method / Requirement	Covers various stakeholders and sectors	Includes impacting stakeholders	Reflects affected stakeholders	Spans across disease domains	Determines impacts on different levels	Enables reflection of positive and negative impacts on costs, resources, and intangible impacts	Proposes a methodology or comes with a toolkit	Includes not only health-related impacts	Allows for prospective assessment based on secondary data	Supports a sustainability analysis over a period
Health Impact Assessment (HIA)	x	x	x			x	x	x		
Social Return on Investment (SROI)	x	x	x	x	x	x		x		x
Cost-Benefit Analysis (CBA)	x	x	x	x	x	x	x	x	x	x
Program Cost Analysis		x		x	x		x	x	x	
Cost-effectiveness Analysis (CEA)			x	x	x	x	x			

Methods and selection of (Societal) Cost Benefit Analysis

The key characteristics needed:

- **Deliver sufficient complex**
- **Open for a variety of stakeholder)**
- **Support different levels of observation and domains**
- **Holistic prospective impact assessment**
- **Support multiquality data**
- **Include a sustainability analysis**

The proposed method and tool

(Societal) Cost Benefit Analysis (SCBA): "ASSIST" Tool

- **Different levels of impacts**
- **Monetises** relevant costs and benefits
- **Different stakeholders across domains**
- Shows a trend for **indicators** on service levels: Socio-economic return (SER)/ Return on investments (ROI)
- **Handles different quality of data**

Classification of impacts

Impact	Societal	Healthcare	Economic	Research
Patient: increased convenience	X			
Patient: Easy, quick access to patient records	X			
Patient: increased digital health literacy	X			
Healthcare professional: Direct access to patient records, bypassing time-consuming bureaucracy	X			
Healthcare payer: avoided duplication of medical tests	X		X	
Healthcare provider: fewer medical tests			X	
Standards allow for homogenised data quality and for an interoperable data exchange format	X		X	X
Governance bodies: Funding & investment			X	
Healthcare Professionals: saved time	X	X		
Healthcare provider: saving money in the long term		X		
Healthcare provider IT: Implementation and adaptation of the digital health software infrastructure		X		
Patient: has full control over what data is shared and can gain trust through transparency and education	X			

Description of 41 identified impacts

Use-case	Healthcare visit abroad scenario	Emergency access scenario	Research data sharing scenario
Measure developed in interopEHRate	Availability of health data on a smart mobile device		
Outcome	Offline access to health data: availability of data ensured with the Smart-EHR		

Impact on stakeholder	Increased convenience
Associated stakeholder	Patients
Indicator description	Patients may not need to bring along paper documents or print clinical data. Medical history is stored all in one place and not scattered across different healthcare providers. This can increase the patient's convenience to use the new protocols.
Impact type	Societal impact (Seamlessness/ environment)
Cost type	Intangible benefits for the patient which could be monetized using a proxy measure
Input variables	Willingness-to-pay for the availability of S-EHR via interopEHRate protocols.
Indicator formula	Amount of € that one user would be willing to pay to use the protocols (over a specified time)
Analysis method	Willingness-to-pay survey Alternatives: Unified theory of acceptance and use of technology (UTAUT) or patient satisfaction survey (eCCIS)
Scale-up potential	Increased convenience is an impact that facilitates acceptance and satisfaction of mobile health data availability

Impact on stakeholder	Direct access to patient records, bypassing time-consuming bureaucracy
Associated stakeholder	Healthcare professional
Indicator description	Healthcare professionals can bypass time-consuming bureaucratic processes that are else needed to get access to the necessary documents.

13 suggested indicators for the SEIA modelling of InteropEHRate

Affected stakeholder	Type (cost, benefit) and metric (financial, resource or intangible impact)	Indicator	Data type needed	Suggested source
Patients	Intangible Benefit	Increase convenience through offline availability of health data on smart mobile devices	Perceived service satisfaction	Willingness-to-pay survey. alternatives: User-acceptance survey or patient satisfaction survey
Patients	Indirect intangible benefit	More time per patient visit due to quicker or improved patient data access by the healthcare professional	Perceived service satisfaction	Willingness to pay survey
Patients	Indirect intangible benefit	Full control over what data is shared	Perceived service satisfaction	Willingness to pay survey
Healthcare professionals	Resource benefit	Less time needed for treatments through direct access to patient data and bypassing of bureaucracy	Time saved per healthcare visit	Measurement in a pilot trial or simulation
Healthcare professionals	Resource benefit	Time saved by avoiding the need to contact the multidisciplinary care team for medical patient history or examination results	Time saved per healthcare visit	Measurement in a pilot trial or simulation; healthcare professional interviews
Healthcare professionals	Resource cost	Time spent on learning usage of new data sharing protocols	Time spent	Measurement in a pilot trial or simulation

Decisionmaker guidance document

Step 1: Clarify baseline questions

The scenario?	The preferred time horizon?	Data sharing mechanisms already available?	What is the evel of observation?	What is the expected level of market penetration?	Who are the impacting and affected stakeholders?	What is the mode of reimbursement for healthcare visits and medical tests?

Step 2: Determine meaningful impacts and its variables

Stakeholder	Impact name	Target group and total number in your setting	Measurement tool / method	Input variables	Cost or benefit?	Indicator formula (how exactly the impact is monetized)	Data source

Step 3: Do the math

Value (SER) added from investing in interopEHRate protocols = value of health service with interopEHRate protocols – value of health service without interopEHRate protocols

Step 4: Take decision to fund or discard interopEHRate for your scenario

Limitations and Challenges

Quality of data input:

much stakeholder estimates rather than being measured empirically (**uncertainty)**

>> **sensitivity analysis** employing Monte Carlo Simulation

False negative:

Negative SER or ROI not necessarily indicate negative overall impacts, but **structural issue**

Risk of bias:

- Selecting irrelevant, non-specific impacts (**reliability**)

- The impacts are moderated or modified by other impacts that are not selected for the (S)CBA (**validity and specificity**)

Thank you!

Q&A time.

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