eHealth for Safety

Impact of ICT on Patient Safety and Risk Management

eHealth for Safety addresses the contributions which ICT applications make to patient safety and risk management in healthcare. An important focus is on tangible benefits for European citizens and healthcare providers. The study identifies priority issues, interviews experts and stakeholders, and develops concrete recommendations for future R&D activities.

Objectives of the Study

Evidence suggests that in advanced healthcare systems medical errors are killing more people each year than breast cancer, AIDS or motor vehicle accidents together. About one in ten patients admitted to a hospital is unintentionally harmed. ICT can make a vital contribution in reducing errors, thereby saving lives and enhancing efficiency – and improving the quality of care for European citizens.

eHealth for Safety has the following overarching goals:

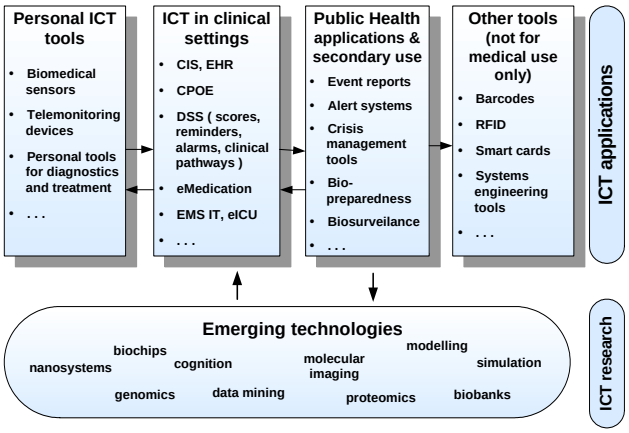
- *Identification of key issues*, topics and challenges where ICT applications can have a high impact on improved patient safety
- *Development of a 10 year vision and concrete recommendations* for RTD measures (within the EU's 7th Framework Programme and for longer term research activities)

ICT can in a comprehensive way contribute to higher patient safety across European health systems

These two goals translate into a *three-phase approach* consisting of baseline research including a thorough literature review, followed by an empirical survey, and finally the development of a synthesis report as well as a roadmap for further research. Identification of good practice cases will form part of the study.

Study Description - Methodology

The study starts out by reviewing the state of the art in the wider (eHealth) patient safety and risk management domain, structuring the field and identifying key issues. Topics to be discussed include personal ICT tools, ICT in clinical settings, public health applications, general ICT tools as well as lessons to be learned from applications in non-medical domains. *Emerging technologies* will also be taken into account as the figure below shows:



Outcomes of this first phase will be discussed by selected high-profile experts in a workshop. The results will feed into the design of a survey and an information gathering instrument. In the second phase (empirical analysis), these tools will be

Pilot case study: Improving medication handling through structured prescribing pathways - Wirral Hospital NHS Trust, UK

At Wirral Hospital NHS Trust the introduction of structured, ICT-supported medication handling pathways drastically reduced errors in the prescription of specific high risk drugs. For instance, an error rate of 82% in the prescription of low molecular weight heparin (identified by an audit) was eliminated. Similarly, in paediatrics structured pathways led to reductions of specific error rates from 26% to just 4% for paediatricians and from 76% to less than 7% for non-paediatric specialists. Furthermore, the introduction of an automated dispensing system reduced the risk of medication errors while electronic prescription improved the legibility and completeness of prescriptions. Moreover, the use of ICT applications supporting work processes freed staff for clinical activities at the bedside.

Source: Case study originally prepared for the *eHealth Impact study*

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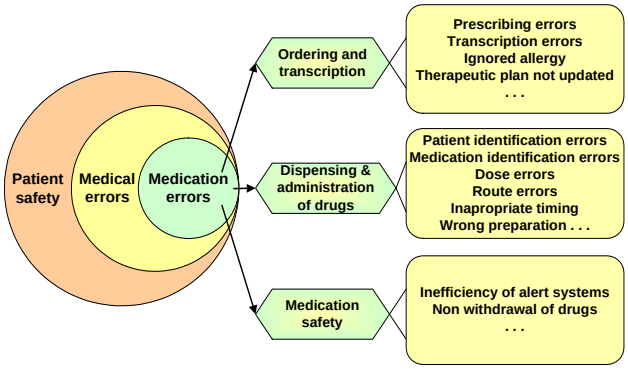
applied to an enlarged and carefully selected target group of experts and competence centres in the EU and at the global level. A web-based consultation interface will be applied, complemented by personal interviews and site visits.

Specialised patient safety ICT applications are a complex subject, and each issue has its own specific subtopics. Medication errors, for instance, include a variety of related issues that all need to be taken into account, as the figure below illustrates:



The third phase will validate and further refine the outcomes of the study process: a concluding workshop will allow for further discussions and will also provide an opportunity to disseminate the results of the work conducted.

Expected outcomes

The study identifies priorities for improved and new ICT applications to further enhance patient safety as seen by both clinicians and experts. Recommendations will be derived on how to integrate them into EU research activities like the 7Th Framework Programme and other support programmes. In doing so, ***eHealth for Safety*** contributes to ensuring that European citizens reap the benefits of improved safety through ICT.

The study will deliver the following results:

- A structure and model of the (eHealth) patient safety and risk management domain
- A literature review of the global state-of-play in ICT-based patient safety and risk management approaches and tools
- An empirical survey of experts and patient safety institutions in the EU 25 plus selected other countries on approaches to patient safety and risk management, levels of ICT use and priority fields for further research.
- Identification and short descriptions of good practice cases from around the world
- A vision and roadmap for concrete steps in RTD towards improving patient safety and risk management in healthcare, with the support of ICT tools and services.

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