Development of Indicators to Monitor Availability and Use of EHR, HIE and PHR Systems

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Abstract. This panel discusses various aspects of providing constructive feedback to the development and implementation process of eHealth technologies. Most countries have high-level policy documents on eHealth, but few have models for providing evidence of management of eHealth infrastructure and application systems. Even fewer have arrangements that systematically measure effects of eHealth systems on the health care of patients and citizens. During this session the panelists will present dimensions and categories of evidence used to support strategic eHealth decisions in the Nordic countries. They will also discuss differences, similarities, and efforts to develop common Nordic indicators to monitor adoption, use, progress, and effects of national eHealth system implementations.

Keywords. eHealth policy, Strategy, Indicators, Implementation, Evaluation

Introduction

Most countries have high-level eHealth policy documents and roadmaps and an increasing number have now published more detailed documents outlining concrete policies and strategies to achieve eHealth goals. Fewer have reported activities on evaluation defining implementation objectives and measures of achievement, but more realize the need for evaluations to assess the effects of eHealth policy implementations [1-2].

In the Nordic countries a group of researchers has worked on developing a joint set of indicators that can be used to monitor the availability and use of eHealth technologies in the Nordic countries. The work is a continuation of workshops and panel discussions at MIE and MEDINFO conferences from 2009 to 2011 [3-4]. At the workshops the participants have elaborated aspects of an idea to have a common data set for monitoring information systems implementations to facilitate international comparability. The comparability can either serve the purpose of international benchmarking or comparison of the quality and outcomes of specific strategic initiatives. Because measures based on indicators inevitably will have a significant structural component, the comparison of strategic initiatives can only be done between countries with rather similar structures as in the Nordic countries.

The data being collected by the group includes indicators on key functionalities of Electronic Health Record systems (EHR), Health Information Exchange (HIE), and
Personalized Health Record systems (PHR). These areas correspond to the issues central to similar work in the OECD [6]. It is an OECD ambition to develop a strategy to employ common measures in all the member countries, while preserving continuity of each nation’s measurements, and to build up an action plan to develop shared measures and approaches to meet high-priority policy needs.

Indicators are according to OECD categorized in four areas of increasing complexity:

- Adoption of eHealth systems
- Modes of use
- Critical success factors
- Outcomes or impact

For many OECD countries it will be difficult to provide data on more than the first two levels, but in the Nordic countries eHealth systems have been in widespread use for a relatively long period and there is a long tradition for collecting data for a variety of purposes.

The desired national level data can be obtained e.g. by surveying representative samples of users, by harvesting data from administrative logs or in real-time [7].

Outline of the panel

**Objectives:** to 1) present dimensions and categories of evidence used to support strategic decisions in the national eHealth system design, implementation and redesign, 2) discuss differences, similarities, needs and efforts for national indicators to monitor adoption, use, quality, and effects of national eHealth system implementations 3) suggest measures needed to generate an agreement on a minimum international dataset.

**Panel presentations:** The first presentation will introduce the subject and outline the history of indicators internationally and provide an overview of the current status. The second presentation will present the Nordic organisational and methodological approaches to obtaining common indicator data. The third presentation will present the most recent data from Finland, Sweden, Norway and Denmark. The fourth presentation will outline how the data can be fed back to the strategic level of national decisions and thus complete a learning cycle.

**Discussion:** We know from experience that establishing indicators on an aggregate level can be quite controversial, which is the prerequisite for a lively debate.

**Addressed audience:** The panel is intended for those interested and involved in large scale eHealth research, development and use: policy makers and eHealth authorities, developers and researchers of national eHealth systems in pursuit of national evaluation activities in different phases of the system life cycle.

**Expected results and educational goals of the panel:** The results of the panel presentations and the succeeding debate will benefit policy makers, developers and researchers in pursuit of evidence-based management of national eHealth systems. Participants will learn about planning and carrying out large scale national monitoring and international comparison and evaluation activities.
References


