

The National information structure for eHealth in Sweden

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Abstract

The National Board of Health and Welfare has been commissioned by the Swedish government to develop a generic National Information Structure. The Information Structure consists of three models: The generic Process-, Concept- and Information models. The National Information Structure will form the foundation for development of ICT solutions that support process oriented care and will also be used as a basis for forming a regulatory framework specifying the content, form and structure of information. It is our view that the specialisation and implementation of the generic models in eHealth solutions will contribute to improvements of the quality of the services delivered to patients. The foreseen benefits include better cooperation in the clinical work, systematic follow up, clinical decision support and enhanced patient safety. It will provide and enable effective use of secondary data to perform management and evaluation of patient outcomes.

Keywords:

Information structure, process model, concept model, information model, semantic interoperability.

Methods

The National Board of Health and Welfare has been commissioned to "take a national, strategic responsibility to make health and social care information more unambiguous, easier to follow-up and available". This work is undertaken in two parallel projects, The *National Information Structure* and the *National project for an interdisciplinary terminology* (including the translation of SNOMED CT). The national information structure provides the basic prerequisites to ensure that relevant information concerning the individual is available throughout the care process. A common information structure also enables process analysis at individual as well as aggregated levels. To include all aspects of health and social care the project started out by identifying and describing the core health and social care business process at a generic level. Four stakeholder groups consisting of patients and next of kin, health and social care personnel, directors and researchers and ICT suppliers, were involved to ensure that all these perspectives were included in the development. The generic models describe the value adding chain in health care and social care, focusing on the value that is created to influence the health state of an individual and the type of activities performed to achieve those values. The basic concepts are described in con-

cept models and the information needs in the workflow were identified. The main focus is information needed by different parties – information that has to accompany each individual within the processes for planning, decision making, analysis, quality improvement, research etc.

Results

The iterative way of building the models as well as involvement of stakeholder groups with different perspectives is essential in forming generic models that can be used in both health and social care. National coordinations and regulations are vital in a decentralized system, to make it possible to ensure information supply within health and social care. The generic models are now being used successfully in different county councils in Sweden. They are appropriate for their purpose – a basis for creating specialised models for different purposes or to use as a pattern for describing processes and information needs with the aim to develop new ICT systems.

Conclusions

ICT systems are essential in making information available in a safe and efficient way to improve communication. Problems related to interoperability are not mainly technology problems – the problem is the lack of common rules for what kind of information should be registered and the lack of structure in registered data. The information structure is the base for primary use in the process for a specific patient as well as for secondary use in follow up and knowledge management of the clinical processes. It is our view that the implementation of the national information structure in eHealth solutions will improve the quality of the delivered services in health care - with benefits including improved clinical decision support and enhanced patient safety. It will also enable effective use of secondary data to perform management and evaluation of patient outcomes without the need for resource consuming separate data collection or registration. The national information structure is a foundation for developing ICT systems that support a shift to a process oriented health and social care.

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