Disturbing or facilitating?
On the Usability of Swedish eHealth 2013
On behalf of the Swedish Ministry of Health and Social Affairs, the signed organisations have analysed the usability of current eHealth systems from the perspective of healthcare and social service professionals, resulting in the attached report.

The reason behind the report is that the intended effects of Swedish eHealth systems have not been attained due to inadequate usability, as shown by the latest review commissioned by the Ministry of Health and Social Affairs (Gartner 2012).

The purpose of the report is to shed light on current problems, solutions and research in the area. We hope that the report will provide a foundation for further development of eHealth. Project manager of the report was Isabella Scandurra, who holds a doctorate in medical informatics. Based on the results of this work, we firmly believe that the usability of eHealth systems can be enhanced by:

- improving the cooperation between responsible authorities to achieve efficient development, governance and implementation of eHealth
- ensuring that there is expertise and commitment regarding eHealth at all levels of management
- actively involving health and social care enterprise and professionals in the development of eHealth
- initiating nationally coordinated efforts in the development, governance and use of the National Information Structure and the National Interdisciplinary Terminology to eliminate duplicate recording of data.
- standardising and regulating vital sets of information, e.g. medical alert information
- ensuring resources for development of a robust and reliable IT infrastructure
- supervising eHealth systems with increased stringency and proactiveness and in collaboration with relevant authorities.
Summary and recommendations

EHealth systems, i.e. information technology (IT) applied in the health and social care sector, can enhance efficiency, improve quality of life and strengthen innovativeness in health and social care. However, to achieve maximum benefit of eHealth systems, it is required that the systems actually support health and social care professionals in their work to focus on health as an effect of the care given. Today, technology in health and social care is often regarded as an obstacle to provide good healthcare in an efficient way.

Organisation of health- and social care is vital
The Swedish National Strategy for eHealth in Health and Social Care (2010) identifies usable and accessible information, as well as decision-making support for staff as important priority areas. In a review (RiR 2011:19), the Swedish National Audit Office came to the conclusion that the eHealth strategy has not been able to obtain the benefits from the efforts made; still, authorised health and social care professionals do not have access to “the right information at the right time” through their IT systems. The organisation of health and social care is crucial for the exchange of information, and there are presently many difficulties in the cooperation between health and social care actors in Sweden. The report by Gartner (2012), commissioned by the Ministry of Health and Social Affairs, indicated that the professionals primarily identified a need for improvement of the usability of eHealth systems to increase their utilisation.

Improved integration between health and social care providers
Representatives of the professions’ organisations in the Consultation Group for National eHealth in health and social care performed a joint initiative in the autumn of 2012 to create the project Usability of Swedish eHealth Systems in 2013, which was funded by the Ministry of Health and Social Affairs. The aim of the project was to collect and highlight lessons learned and examples of best practice as a basis for an improved integration of health and social care providers and their IT support, as well as answering the following questions:
- Which problems do users experience today?
- Which solutions do users regard as most important?
- What do we know about usability based on previous research improvement projects in eHealth?

EHealth systems must follow work processes
In order to gather material for this report, representatives of health and social care staff (i.e. users), researchers in the area of usability in health informatics, and representatives of the suppliers of IT systems have participated in seven workshops. The users stated that the eHealth systems of tomorrow must
follow the work processes considerably better. The systems must provide overviews, take little time to assimilate and navigate and give the user a sense of control, in contrast to present work where the users need to add manual check-points in and between systems, on both information and documentation. The systems need to be adjusted to the particular task in question and the circumstances. Duplicate recording of data and constant log-in/log-outs are issues that must be prioritised and dealt with immediately. In the health and social care in the municipalities, access to mobile and situation-based eHealth systems and tools must improve substantially.

Information must follow the care recipient
Usability in current eHealth systems must be improved to guarantee patient safety and support a person-centred health and social care as well as optimal use of resources. The users point out that there is a need for digital tools and systems where the information follows the care recipient across care provider boundaries and where the presentation of information is adapted to the users’ professions, situations and previous choices or preferences. Certain types of health and social care information must be structured uniformly, e.g. support for medication management to reduce the risk of errors in the medication supply chain, and vital information in order to guarantee support for decision-making in time-critical situations.

Ten issues to prioritise
The development of eHealth is always business development and must be integrated into improvement work in health and social care. To meliorate this, the committee for the project Usability of Swedish eHealth Systems in 2013 highlight the following ten issues. The issues describe what needs to be prioritised on the basis of a usability perspective to utilise the potential of eHealth systems.

1. eHealth systems must be managed, evaluated, supervised and continuously optimised in relation to usability needs of the enterprise that is to be supported. There is a need for more collaborative efforts to integrate work processes and eHealth systems into a joint matter.

2. Increased participation of usability experts, health informatics specialists and users is required in the development and evaluation of eHealth systems. Each eHealth project must have representatives from the care professionals involved in its management.

3. All health and social care professionals must have a basic understanding of the opportunities offered by eHealth, as well as adequate knowledge of how the local eHealth systems should be used and how work processes match eHealth
systems. **Training** and enhancement of informatics skills must be prioritised in the education and then continuously in employment. Education of Health informatics must be greatly expanded and also be connected to sector-independent knowledge in the area of informatics.

4. **Technical prerequisites** to document and access information must be met at the point of care. The need is particularly great in the social care sector where access to technical support is low and mobile work is common.

5. The **technical infrastructure** must be sufficiently powerful and reliable enough that the user can rely on it. Single-sign-on with session management must be implemented so that users can perform their work without unnecessary interruptions. The technical environment must be developed in order to make sure that response times are kept at minimum. The IT environment is becoming increasingly complex, partly as a consequence of greater requirements for exchange of information between health and social care providers. To handle this the care providers’ must coordinate their organisations for operation and administration of eHealth systems more efficiently.

6. Health and social care staff must be able to move between different eHealth systems and yet be able to find vital
information quickly in time-critical situations. This requires the presentation of certain types of health and social care information to be **structured and standardised graphically**, while individualisation must be provided at the same time, based on e.g. role, activity and situation.

7. Eliminate **duplicate recording of data**. A set of information is to be registered only once and communicated automatically in existing or aggregated form to other systems. The work on the National Interdisciplinary Terminology and the National Information Structure as well as implementing automated transfer of data must be sped up.

8. Important **information must follow the care recipient** across health and social care provider boundaries to facilitate person-centred health and social care. Unnecessary legal obstacles must be eliminated, while eHealth systems must at the same time be developed so that they can act as support in the efforts to **follow legal** and **ethical** requirements regarding care information flows across health and social care provider boundaries.

9. **Research** on the usability of eHealth systems must be strengthened and the knowledge applied. More usable systems lead to improved data gathering, which in turn can provide improved feedback to the care staff and valid data for research.

10. eHealth skills are a **strategic development resource** that must be present at all levels of management in health and social care. Understanding of usability is the key to benefit, and essential for good and reliable health and social care.

Download the entire report (currently only in Swedish) from the website of one of the participating organisations or from www.storandeellerstodjande.se
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The report “Disturbing or facilitating? - On the Usability of Swedish eHealth 2013” has been produced in an interdisciplinary project with users from health and social care organisations and researchers in usability and health informatics. The report can be used as a knowledge base and a guide in work aiming at improving existing eHealth systems as well as in procurement and development of new eHealth systems in health and social care. The report can be downloaded from the website of one of the participating organisations or from www.storandeellerstodjande.se Currently the report is available in Swedish.

According to the international standard, usability is defined as "The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use." ref. ISO 9241-11