

Nursing Care and eHealth

Introduction and objective

The current trend towards the digitalisation of information – in seemingly every domain of modern life – is driving our society’s evolution. The use of information and communications technology (ICT) is set to fundamentally change nursing practice, because access to and use of that information opens many new perspectives hence opportunities, not only for nurses but also for the patients being cared for. The patients of the future will have access to all their personal health data. Will the nurses of the future have to act as counsellors who help patients make sense of those data? Indeed, thanks to computer systems which enhance decision making by clinicians and managers, nurses will have far greater access to information. This will reinforce the true essence of caring in an ever more complex healthcare environment, via better quality, safety, continuity and cost-effectiveness of care.

This document’s objective is to explicitly set out the points which nurses should consider in order to make the changes brought about by eHealth positive ones for clinical practice.

Context

Nursing is an ancient profession – societies have always needed carers. The increasing professionalisation of nursing care is occurring with a background of technological evolution, economic constraints, demographic pressure and an information tsunami.

A definition of eHealth: the integrated use of information and communications technology for creating, organising and supporting a network involving every process and actor in the healthcare system (eHealth Suisse, 2017).

Nursing care and digitisation

Technological progress has always affected humans. Progress in information technology will affect us far more than we might think, particularly in the field of nursing. Some examples of this, with informational and technological facets, will concern both nurses and patients:

- Virtually unlimited data storage and access to information and knowledge.
- The ubiquity of information – available everywhere at the same time – will make information mobile.
- Continuity of information as support to the continuity and safety of care.
- Data re-use is an aid to decision-making, interaction, research, automatic learning (deep learning), etc.
- Data interoperability – a corollary principle of re-use – and technological automation will ensure information systems move ever closer to the point of care.
- Usability and good ergonomics are indispensable to the adoption of new technologies and to information quality.
- Artificial intelligence (AI) has the potential to transform care practices and reduce errors significantly.

However, no matter how sophisticated the tool, IT can never replace the nurses' capacities for critical thinking and humanism.

The fundamental concepts of nursing care

In order to face the challenges of future technological and economic changes, the nursing profession will have to rely on certain fundamental concepts:

- Patient-centred care.
- Care based on the philosophy of modern humanism.
- Continuity of care.
- Clinical judgement made in a complex environment.
- Patient empowerment through mediation (communication by professionals to patients) and patient education, both of which are essential to informed consent.
- Remote care services.

Thoughts and conclusion

The art of nursing is becoming a subtle balancing act between the competing demands of human beings, organisation and technology. Many of the physical tools at the disposal of nurses have been around for a long time: syringes, catheters, ECG machines, glucometers, etc.

Today, the miniaturisation and connectivity of information technologies have multiplied their possible uses. For example:

- 1) Robots are already helping to lift disabled patients and when combined with AI they are also becoming companions for the elderly.
- 2) Every individual's smartphone may soon control a range of different biosensors and give information on a range of their personal medical data. The control over medical information is shifting: patients will be the masters of their own data and healthcare professionals will have to request these data.

These technological advances will allow nurses to better accompany, support and empower patients in their personal health planning.

In their daily practice, nurses will benefit from unlimited access to knowledge and, thanks to AI, constant support for the analysis of complex data.

This realistic and positive outlook should not obscure the potential risks linked to the transfer of technologies in clinical practice. Both the literature and the media (whether specialist or not) warn of the problems induced by the digitalisation of human activities. The question of Digital Health's intrinsic risks (data protection, information storage, privacy, etc.) is not a technical one (see the specialised literature); it is a question of behaviour and individual responsibility. The paradigm shift introduced by Digital Health will have to be taken into account in every domain linked to nursing care. The present document's recommendations are by no means exhaustive, but they do aim to be sufficient for each of the groups below to begin thinking about the development of their profession's future responsibilities.

Recommendations

For nurses

- Master the technologies: above all, this requires a mastery of nursing.
- Keep thinking critically: one must not only be able to work with intelligent technologies but also to think critically about their results or conclusions.
- Reinforce nursing relationships with patients so as not to lose that link because of technology.
- A new role as counsellor: patients will have access to information and knowledge. Nurses will facilitate the patients' understanding of that information.
- Communication: new technology requires the use of standardised language, and interdisciplinarity imposes the adoption of professional terms for communication. Communication with patients, however, must remain simple and comprehensible.
- Writing: learn to type.

For front-line nursing managers

- Develop the capacity to understand indicators and to translate data into meaningful information for the team recording the data.
- Maintain a culture of cooperation and cross-fertilisation to bring out the full potential of using information technologies and making goals transparent.
- Know the patients' medical records as well as the nursing staff in order to ensure a high level of supervision of care.
- Create a daily motivational framework based on the use of clinical data for communication and case management.

For nursing executives and leaders in the profession

- Integrate the information system's approaches via institutional governance.
- Integrate trained computer specialists at every level of the organisation, from management assistants to "super-users".
- Put framework conditions in place which facilitate and promote proactive behaviour by nurses; adopt a transformational leadership style and manage via trust.
- Develop and share a vision of eNursing that becomes the foundation for interprofessional exchange. The patient is central, and each patient is the subject of unique but shared information.
- Develop data-based guidance that will improve the quality, safety and ergonomics of the work of nursing teams.
- Develop a culture of innovation to prevent the obsolescence of human nursing staff in the face of technological change (informatics, genomics and communication).

For trainers and teachers

- Train student nurses so that they are just as able to cope with changing technologies (informatics, genomics, communication) as more experienced nurses, by changing their practices while retaining a strong professional identity.
- Train nurses on clinical semiotics, analysis and prospective interpretation.
- Integrate theoretical approaches and concepts from the field of computer science into curricula (systems theory, information theory, semantic theory, etc.). The use of a standardised professional language (for semiotics, nursing diagnoses, classification, etc.) is a key element in the development of nursing care because each word reflects a concept and thus the knowledge attached to it.
- Train nurses, at every level of their studies, on the culture of information (the impact of technologies and the critical interpretation of data).
- Train nurses with regard to their potential future roles as information mediators and health coaches.

For experts in nursing care and researchers (development of care)

- Promote scientific and critical thinking in nursing care: because technology is in perpetual evolution, this is the only way to ensure that nurses use new tools in a well-informed manner.
- Share a vision of the nursing profession based on good practices and technology in order to accompany changes in nursing care and rapid technological change.
- Identify and explore the challenges which technologies represent in daily clinical practice so as to translate them into research questions.

For experts in technology

- Get training in the specialised field of health informatics.
- Accompany management groups into the new technological era via a systematic analysis of the different processes that may change with the advent of new technologies.
- Integrate reference nurse clinicians into the development of new technologies.
- Systematically evaluate the impact of introducing new technologies.
- Develop tools to integrate structured, narrative, quantitative and qualitative data and information input.

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A comprehensive document on this topic, as well as its associated references, are available in French, German and Italian on the website (www.asi-sbk.ch).

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Swiss Society for Medical Informatics

The Swiss Society for Medical Informatics welcomes this document and recommends that its members and health professionals take these recommendations into account.