

How nursing professionals can – and must – influence and shape the digital transformation

# eHealth and Nursing – a critical stance

The digital transformation affects us all. It strikes us at the «epicentre» of our nursing work, namely in our human-to-human interactions. We look not only at its achievements and advantages, but also at its aspects that remain problematic in everyday practice. In the following article, we show how the digital transformation can be shaped and used in the best possible way, to the benefit of our profession.

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The Commission «eHealth and Nursing» focuses on questions concerning the digital transformation of healthcare and helps to shape it. Digital transformation can be understood as processes, ways of working and thinking, as well as services, that are shaped by technological developments and the existence of digital data. It not only shapes our profession, our everyday practice and society, but it is also shaped by all those in nursing who are actively involved in its us-

age. However, social, economic, legal and political developments also influence digital transformation.

Digital transformation concerns us all, we experience it every day and it is not a new phenomenon. Sometimes we have the impression that we are being «pushed» or even «chased» by it. It is complex and operates on various levels, for example: Communication, space-time availability and information pro-

cessing. However, the more we utilize it, the more we can make use of its advantages and enjoy its possible simplifications and efficiency gains. This also applies to everyday clinical care, ranging from home care to the long-term setting. A clinical information system (CIS) is an obvious example. Access to this is possible simultaneously for all involved and authorised health professionals, both from within a hospital or institution and from outside agencies.

The health data of patients must be collected in a consistent, complete and valid manner and in the required format.



DEFINITION

## Digital transformation

The Commission «eHealth and Nursing» of the SBK focuses on questions concerning the digital transformation of nursing and helps to shape it. Digital transformation can be understood as processes, ways of working and thinking, as well as services that are shaped by technological developments and the presence of digital data. It not only shapes our profession, our everyday practice and society, it is also shaped by all those in nursing who are actively involved in its usage. However, social, economic, legal and political developments also influence digital transformation.

Delving into the depths of an archive is no longer necessary. The time-consuming deciphering of medication orders or handwritten reports is also a thing of the past. Automated interaction checks for medicines warn health professionals directly, in cases of a potential risk. CIS offers transparency for interprofessional cooperation and allows examination results (e.g., ECG, laboratory values or CTG) to be analysed directly, even by therapists or consultants who are geographically distant from one another. The vital signs of monitored patients can be sent directly to the CIS. Gone are the days of the tedious transmissions of measured values.

Technical and semantic standardisation has entered the operational phase. The paradigm «collect once – use many times» is gaining ground.



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Despite the numerous achievements and advantages of CIS, several aspects are still problematic from the nursing perspective. The following explanations show how current problems can be solved.

### Usability

- Data are increasingly being recorded digitally in clinical practice, but often in an unsuitable form (e.g., comprehensive continuous text). Manual entries are considered more error-prone and if they are entered with a time-lag, they are not available for timely data exchange or analysis. In addition, the more text that is entered manually into the documentation, the less information can be re-used in the care process.

Therefore, wherever possible, data should be recorded in a comprehensive and structured manner.

- Data collection has increased aimlessly, and it is hardly questioned which data is truly needed (keyword «data graveyard»). To use data appropriately, systematic guidelines for its analysis and further usage are needed. These guidelines would clarify which data should be used and for what purpose, for example, in supporting the care process or quality assurance, or for financing or personnel management. Additionally, it should be delineated on what basis, by whom and how these data should be documented.
- Data quality is often poor, which has a negative impact on interoperability, data reuse and analysis (keyword «nonsense (garbage) input data produces nonsense output»). To ensure reliable results and interoperable processes, it is necessary to obtain consistent data, as per the following points: Data free of duplicates and contradictions, complete data, valid (credible) data, data that is collected in the required format (e.g., temperature must be notated with a decimal point), up-to-date data (e.g., data that is digitally available on time for the survey period).

### User-friendliness:

- CISs are complex and often lack a quick overview or a simple process regarding how relevant information for everyday practice can be viewed efficiently. This is a challenge not only for software manufacturers, but also for those responsible in nursing and management, as they must select and demand such requirements for an CIS (e.g., by means of requirement catalogues).
- Nursing professionals are seldom involved in the parameterisation of specialised applications and are not informed enough about such innovations. To acquire such knowledge would require adequate training that could be completed flexibly (e.g., short training courses, e-learning, self-study, a personal contact person – including timely communication).
- Technology allows previous processes to be optimised. It is important that

digitalised processes do not correspond to «paper processes». Too few «paper processes» are «screened» and critically examined by the nursing staff themselves; therefore, digitalisation can contribute to increasing the efficiency of a process. However, for this to occur, processes must be linked to other processes and automation must be used. Traditional «routines» with «notes» are to be avoided; the direct digital recording of patient data saves time and prevents transmission errors. This also applies to mobile solutions, which are still not used frequently enough.

- In most practices, document systems in a CIS cannot be used intuitively by clinical staff. This results in time-consuming training and incorrect usage. For example, guidelines or directives regarding a certain measure are needed when they are planned, and a system change should not be necessary (e.g., «no going out of the nursing process, into the intranet and back into the nursing process»). Therefore,

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## NURSING AND EHEALTH

**SBK position paper**

In 2019, the SBK Commission «eHealth and Nursing» published a position paper on the use of information and communication technologies. The aim of the document is to highlight the aspects that each nurse should consider when performing their different roles in order to enable a positive digital development with regard to clinical practice. The paper includes specific recommendations for professionals in different positions - nurses and front-line nursing managers, nursing executives and leaders in the profession, education professionals, nursing experts, researchers, as well as experts in technology.

The position paper is available at [www.sbk-asi.ch](http://www.sbk-asi.ch) >Pflegethemen >eHealth

wedmov/PantherMedia



Nursing professionals need to formulate their requirements for technology and work more closely with manufacturers and companies on issues of usability, ease of use and reuse of data.

attractive or intuitive IT applications are needed, that logically and clearly support the care process.

**Reuse of data:**

- **Coding and financing:** Most documentation systems are still predominantly administratively driven. Data must be collected in the clinical setting in addition to coding and billing purposes. This data should be derived automatically whenever possible, for example, the CHOP-99.C nursing complex treatment cases or the Swiss-DRG tariff structure.
- **Risk assessment:** The reuse of already recorded data should become standard, as redundancy prevents nurses from core tasks such as caring. Furthermore, the reuse of data enables automated classification (e.g., CHOP and TARMED codes or risk calculations of deteriorations in condition, such as sepsis).
- **Classification:** Data are collected, but hardly ever used systematically for

the care process and outcome evaluations. Regarding this purpose, the reuse of data is also key to efficient data usage. For example, the aim is to obtain clinically relevant information to automate the identification of risks, the calculation of scores (pressure ulcers, falls or care dependency), the planning of therapies and preventive measures as well as outcome measurements.

**Interoperability:**

- Unfortunately, double entries are still very prevalent. For example, an action/measure is documented in the system, but must be entered again as a service for staff planning. By investing in a one-time parameterisation with automation, time resources can be gained. A time expenditure of 10 minutes per nurse per day generated by missing parameterisation with automation, illustrates how this investment would be amortised in a very short time (source).

- **Media discontinuities** are often encountered. Not only between different institutions, but also within an institution where different, non-integrated systems are used. The medication process, for example, is particularly critical here, as prescriptions are often still entered manually for internal transfers (e.g., from the operating room to the department). This can lead to medication errors with patients, which would then also have a negative impact on the continuity and quality of care.
- **Process interoperability**, such as the automated transfer of treatment-relevant data when a patient transfers from hospital to home care or a nursing home, is largely lacking. The current technical status of many institutions primarily allows reports to be generated, but interfaces to communicate with one other do not exist. In this situation, the manufacturers and persons responsible for processes, are again called upon to remedy this weakness.



The above list is not exhaustive, but important problems and their solutions in everyday practice are highlighted. We have a great deal of unused poten-



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tial regarding the digitalisation and technologisation of our profession. However, reaping the benefits from digitalisation will not occur by itself. These

solutions must be determined and implemented. Who does this for our profession? Nobody. We must design it ourselves. Otherwise, computer scientists and software companies will continue to be the drivers of the digital transformation. We, the users, the nursing professionals, must actively participate in the technological development, testing, implementation and evaluation. It is high time that we, nursing professionals from practice, management, teaching and research, actively become involved and participate in this decision-making process. We must place our demands on the technology. Digitalisation is not an IT project, but instead an organisational project. We must be prepared to exchange the old with the new. We must analyse and critically examine our processes in order to optimise them through digitalisation. Process optimisation can never be achieved through digitalisation and technology alone, but requires changes also in organisational and leadership

culture (including further development of competences and roles). The changes brought about by the digital transformation also require adaptations in other care and financing models, for example: Telenursing from the hospital (Hospital@Home), cooperation between hospital and home care or outpatient clinics, or applications financed by the basic insurance. We additionally need to work more closely with manufacturers and companies regarding issues such as usability, user-friendliness, re-use of data and interoperability.

Let's not forget that the «digitalisation journey» has only just begun. In order for the benefits of increasing digitalisation and technologisation to be felt in practice, we recommend that nurses from practice, management, teaching and research, as well as manufacturers, implement the above aspects and recommendations discussed in this e-Health position paper (SBK\_Pflege\_eHealth\_eng.pdf).

We are convinced that digital transformation can strengthen the autonomy of our profession, enable us to act actively, demand critical thinking, deepen person-centred caring, and promote a safe and self-determined way of life. However, this can only occur if we commit ourselves to it, and help to shape this digital transformation process. It requires our participation.

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**Literature**

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