

“Next Generation Healthcare Infrastructures: Firing, Hiring and Reskilling staff”

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EHR Healthcare Infrastructures

Which generation of Electronic Health Records could we be said to have today? Since the 1960s HER been seen as an opportunity to improve healthcare quality, problem solving, documentation and administration. However, ‘the wave did not break’ until the beginning of the 2000s, when EHRs were introduced widespread in Europe and the USA (Berner, Detmer, & Simborg, 2005) (Simborg, Detmer, & Berner, 2013). Only at that time had computers developed to a level that made them economically feasible, interconnected and user-friendly to a degree that made their introduction into healthcare attractive. Then it turned out that implementing and realizing the benefits of EHRs was not only technical, but also organizational.

Since their introduction in the 2000s, the advantages and disadvantages of EHRs are widely debated. On the positive side, immediate accessibility of information, integration of separate medical records, integration of different IT-systems, reduction of medicine errors, and the better healthcare governance through secondary use of data are mentioned. On the negative side, concerns about slowdown of physicians’ and nurses’ work, fragmentation of information, new kinds of errors and increased workload for generating data for secondary purposes have been raised (Greenhalgh, Potts, Wong, Bark, & Swinglehurst, 2009).

As several studies have shown the implementation of EHRs requires considerable work way beyond interface design and ensuring up-time, and involving numerous work practice and organizational issues (Deutsch, Duftschmid, & Dorda, 2010) (Ludwick & Doucette, 2009). Implementing and realizing benefits from EHRs is a socio-technical issue (Berg, 1999; Greenhalgh, Morris, Wyatt, Thomas, & Gunning, 2013; Greenhalgh & Stones, 2010).

Hence, the challenges of EHRs are about creating the next generation of healthcare infrastructures.

A case in point: The HealthcarePlatform

In May 2016, the implementation of the Danish version of the US-based EHR EPIC in the Capital and Zealand Regions in Denmark was initiated. Presently, 1½ year or a bit more after its launch at the first hospitals, the HealthcarePlatform is reported to have led to financial loss, longer waiting times for patients, slowdown of work, need for increased IT support staff, and physicians getting ill.

Financially, a 7% loss in 2017 as compared to 2016 has incurred for the Capital Region, amounting to approximately 730 mio. Danish Kroner (equivalent to 121 mio. US\$ or 98 mio. Euro)(Politiken [daily

newspaper in Danish], November7,2016). The saddening result can be attributed to a combination of less treated patients, because the EHR slows down healthcare staff's work, and less accurate reporting of diagnoses, which form the basis of reimbursement through the system of Diagnosis-Related Groups (DRG). Both the slowdown of work and the inaccurate reporting of diagnosis can be linked to the firing of medical secretaries in large numbers, who previously transcribed physicians' dictates of notes and did the final reporting of DRG-codes. Having fired in 2016 and 2017 more than 300 medical secretaries who were deemed superfluous since physicians would enter data themselves, the Capital Region partly redirected its decision and planned to rehire 55 medical secretaries again in 2018 to help out physicians and increase DRG reporting (Politiken, December10,2017).

Longer waiting times for patient due to receive treatment has resulted in at least the death of one patient, and patients being send to other regions for treatment.

Increased IT support staff seems presently to have become permanent: 165 students from civil engineering are employed to help healthcare staff work with the HealthcarePlatform: In case of problems they are to arrive within 5 minutes and help out. Initially introduced as a temporary measure with 30 students during the initial implementation of the HealthcarePlatform in May 2016, the 'hypercare' IT-support has been enlarged and extended (Information [daily newspaper in Danish], February7,2018).

Repetitive strain injury (in the elbow) has become an increased problem for physicians in the regions that have implemented 'the HealthcarePlatform', because of the increase of 'clicks' necessary (translated from Danish 'Sundhedsplatformen'). According to the survey 21% of residents experience pain in muscles or joints as compared to 10% in regions that have not implemented the HealthcarePlatform. Some residents are now supported by assistants (e.g. medical secretaries) to be able to carry out their jobs (Ugeskrift for Læger [popular medical journal in Danish], February15.2018).

These developments and challenges may be a matter of 'shake-down' phase problems (Häkkinen & Hilmola, 2008), and go away as the HealthcarePlatform is redesign and customized, healthcare staff become more skilled in using the EHR, and the hospital organizations readjusted. This is what the Regions' and the HealthcarePlatform project's management head argue anyway. However, it seems presently that implementation the HealthcarePlatform is a matter of firing, hiring and reskilling staff as well as developing the necessary infrastructure around it.

EHR infrastructures: New roles, competences and functions

The transformation of the healthcare infrastructure in the two Danish regions would seem to reflect issues that are found elsewhere as well. Looking to the USA where EHR adoption has increases tremendously during the last 10 years (Adler-Milstein et al., 2015; Jha et al., 2009), especially in connection with the HITECH Act of 2009 (Adler-Milstein & Jha, 2017), similar patterns can be observed.

Shuib et al (2017) for example claim that "... the implementation of EHRs did not come without its fair share of criticism. Previous literature illustrates 25–33 percent drop in physician productivity, decreased patient satisfaction, and physician concern over an increased amount of time doing computer tasks to go along with other concerns such as poor usability, time-consuming data entry, less time for face-to-

face patient care, learning billable coding, and degradation of clinical documentation by trying to force it into structured fields.” (Shuaib et al., 2017: p2). Many other articles report similar challenges.

However, here I would like to focus on one aspect of the development of next generation EHR infrastructures: the new skills, roles and occupations that emerge. As the citation suggest, EHRs do not only entail that physicians – in the USA and Denmark – have to learn new skills such as billable coding and structured documentation, but also a change in the overall skill mix of healthcare staff. Skill mix changes are cause by various factors, but IT implementation is one of them (de Bont et al., 2016) (Tsiachristas, 2015) (Nancarrow & Borthwick, 2005).

One example, is the firing-hiring of the medium-skilled medical secretaries in Denmark has parallels to developments in the USA: Here, medical scribes have emerged as a new occupation of approximately 100,000 people who are low-paid, low-skilled and hired to carry out documentation for physicians to improve throughput and lessen their workload. Most often their rise in number is attributed to the implementation of EHRs. Similarly, a new occupation of Clinical Documentation Improvement Specialists is emerging, and their primary task is to ensure that billable coding is correct and optimal (Kruse & Taillon, 2011). The emergence of staff to accumulate, filter, visualize data for management and governance purposes is a similar development.

Next Generation Healthcare Infrastructures

Developing the next generation of EHRs will entail reducing the number of clicks, optimizing workflows, making speech recognition (finally) succeed (?), increasing speed and decreasing downtime of EHRs. However, it will also entail finding balances between narrative and structured physician and nurse notes, allocating tasks of documentation such as coding and writing notes, and providing IT support for the core healthcare professions. Is will, as already stated, be socio-technical challenge and entail a transformation of not only the EHRs, but also of the infrastructures of which they are part.

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