Preparing for the implementation of the Epic EPR in Norway drawing on experiences from Denmark

Gunnar Ellingsen

UIT – The Arctic University of Norway

Tromsø

The Epic EPR

- Epic is an integrated suite of software with functionality ranging from patient administration, through systems for physicians, nurses, pharmacists, radiologists, lab technologist, and other care providers, to billing systems, integration to the primary health sector, and a facility for granting patients access to their own data.
- Being originally developed for the US market, Epic has only recently been implemented in Europe.

Epic in Denmark, Finland and Norway

- Denmark: 2016
- Finland: 2018
- Norway: 2021

Research questions

- How did the Danish hospitals prepare for go-live and how did the experiences after go-live match their expectations?
- How did experiences from the Epic implementations in Denmark inform the Norwegian preparations?

Method

- Selected project documents are publicly available
- Business case and minutes from key meetings.
- The health authorities do some assessments which are available in public reports.
- The Norwegian case is based on 4 interviews of top management in the Health Platform conducted in October 2018.

The Danish Case: Herlev and Gentofte Hospital (HGH) at the Capital Region

- Contract signed in December 2013
- Epic went live at HGH on May 21, 2016
- HGH had 949 beds and 6449 staff
- Stage 3 on EMRAM
- EUR 375 million

Expectations

- Eliminate paper records and replace many existing clinical information systems with one integrated electronic patient record

- It was expected that the main benefits of Epic would be more efficient patient administration and clinical processes.

Adaptation and configuration

- To achieve these benefits Epic had to be adjusted to match the Danish healthcare context. These adjustments involved changes in the user interface as well as the underlying functionality.

HGH experienced a number of problems after go-live (2016)

Status report to the board of patient safety, Capital Region, 12. august 2016

- Referrals, admission- and discharge reports were not sent correctly
- The identity of unnamed newborn babies was difficult to establish because they appeared as 'Unknown', that is, without their mother's social security number.
- The Epic displays in the emergency department caused problems for the staff, who had difficulty gaining an overview of the patients and their status.
- The integration between Epic and some of the medico equipment malfunctioned, so data were not transferred from the equipment to the patients' records in Epic.
- The integration with the national medication chart had errors, such as occasional duplication of medical orders, thereby creating uncertainty and workarounds.
- Many blood-test orders remained unsent because they did not comply with new requirements to their content, often without the physicians understanding why the order had not been sent.

Delayed training

(Report from the office of the Auditor General, 2018)

- 8 weeks implementation schedule
- *T*he use of Epic started two weeks later than planned, that is, six weeks before go-live. The compressed schedule was caused by the delayed completion of training materials and, in turn, caused problems completing the training of all staff.
- The delays were caused by on-going adjustments to Epic. In the end, adjustments to Epic continued after training had started and many users received training on a version that was different from the system they met at go-live.

Lack of critical technical tests

(Report from the office of the Auditor General, 2018)

- Tests were conducted a week before go-live because the features to be tested were delayed.
- The tests were complicated by known errors that hadn't been fixed and they identified new errors, including 20 in the categories critical and severe. These 20 errors were not fixed until after go-live.
- The test of whether Epic produced the same data for reimbursement as the old systems was conducted the day before go-live and revealed problems; it was decided not to compare the data produced by Epic with those from the old systems.
- In addition, the functional test of whether Epic fulfilled the specified requirements was postponed until October, five months after go-live.

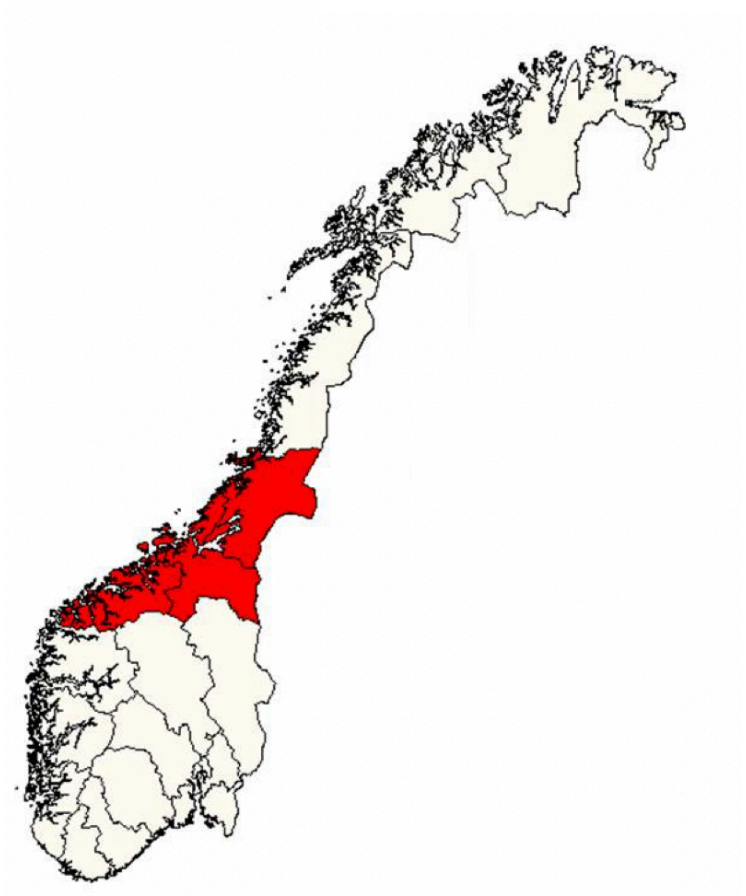
The benefits estimation

(Report from the office of the Auditor General, 2018)

- An expected productivity dip after go-live of only three weeks
- The basis for this optimistic expectation is unclear

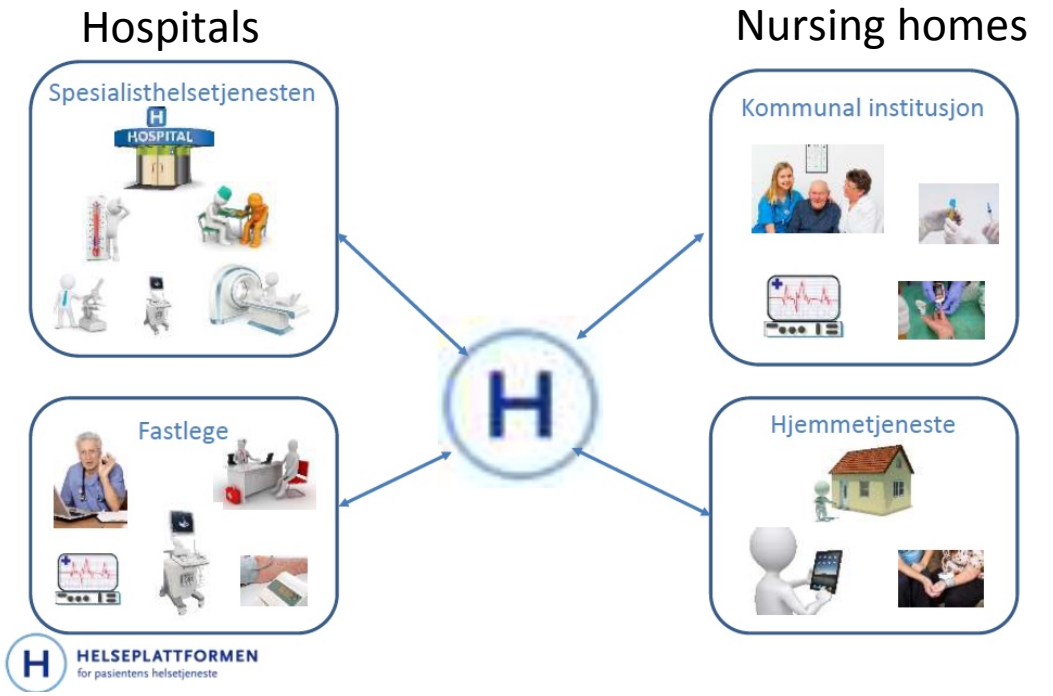
- As much as 18 months after go-live productivity had not yet returned to baseline

The Norwegian Case: The Health Platform programme in Mid-Norway



- The programme aims at acquiring and implementing Epic for the whole health region.
- The contract is planned to be signed in 2019 and the first implementation are planned in 2021.
- There are 3 hospitals whereof the largest is located in Trondheim with approximately 1000 beds and 10500 employees.
- The cost of the programme amounts to EUR 270 million

Goals in the programme



- Improve collaboration between the stakeholders in the healthcare service
- Reduced time spent documenting
- A common EHR for the whole health region in Mid-Norway.
- The 84 municipalities have the option to buy in to the solution

Replacement and integration

- The Health Platform has identified 80 current ICT systems that will be replaced by Epic.
- There are also 160 integrations of a national character that will be developed.

- What are the key concerns?

Organising participation to create ownership and get the right functionality

- *"When we started the acquisition project, we involved 400 clinicians from the entire healthcare service in Mid-Norway, small and large municipalities and hospitals (…) they participated in 301 workshops and described what was good with the current ICT systems, their current challenges and what was missing"*

- The outcome of these workshops became the basis for the requirement specification including 4000 specific requirements.

Ensure participation of the 84 municipalities in the region

- *A challenge is that the programme is very hospital-run. It is the Health Authority Central Norway that owns the programme. Even if Trondheim municipality participates, the main effort is to acquire an EPR for central Norway, and we feel that we must ensure that the municipalities are taken into account*
- *We must ensure that the 84 municipalities "buy in" to Epic as early as possible in order to create stability around the solution (…) we involve user-representatives from the municipalities in the acquisition process. The purpose of this has been to ensure the users that Epic can be adapted to their needs*

Negotiating demands with Epic

- *“We had a very thorough dialogue with Epic in the spring of 2018. In this period, we experienced that they really improved their understanding of what we wanted. In this situation, we also experienced that they brought with them know-how and knowledge from Denmark and Finland that was useful in Norway”*

Dealing with the users' requirements

- *Then the vendor [Epic] went home and started to consider all our requirement and realized that they would end up with a quite large development project, and where they to a little extent had confronted us with functionality that they already have in the system.*

- *And then they came back us and showed us what they had and said: "If you want the offline functionality that would mean THIS many development hours, but what we can offer you now are some adaptations here and now. If you can tell us on this screen what you want differently we can change it to the meeting tomorrow" (...) the professionals in that field said that this was good enough*

Configuration requires “physician builders”

- The capability in Epic to configure the system, does not only extend to Epic personnel. Similar, to the Danish case, designated clinicians are supposed to be heavily engaged in configuring and building the Epic systems. i.e. designing functionality for their practice. In the Epic world, these are called “physician builders”

A rigid implementation schedule

- *"They have a very rigid and tight project plan. They have philosophy of: let's just get the solution up and running and let's build the capability in the organization to understand the solution and its possibilities"*

- *"After that you run optimizing processes continuously, which you as a customer manage yourself … actually you are building the system yourself (...) you don't have to call a vendor who has no time to do it"*

Establishing a decision structure

- *The Danes didn’t manage to take decisions to the right time. And if that happens to a large extent, then Epic will use their foundation (default) system instead …And then you are off track*

- *"Now we are in the process of establishing a decision structure (...) that is, involve people from the line organizations that can respond to all the questions within a 10 days notice. Epic will probably raise something between 8000-12000 questions when they start the implementation"*

Long-term effects and business plan

- *“In comparison to the Danish case, the Health Platform has no business case that promotes concrete economic gains (…) Our ”business case” rather points to quality related to patient safety and patient safety*

- *“But if we do things right then there is a potential for efficiency- and economic gains”*

Concluding discussion

1. Compared to Danish case, the Norwegian case has a larger transformative potential, but the organizational complexity is higher.
2. An uneasy position between Epic and the clinicians (widespread user participation and tight deadlines)
3. The uncertainty around an extensive formal decision structure
4. The recruitment of physician builders
5. Standardisation for the short-term vs flexibility for the long-term
6. Less promotions of measurable benefits (economy and efficiency) in the Norwegian case