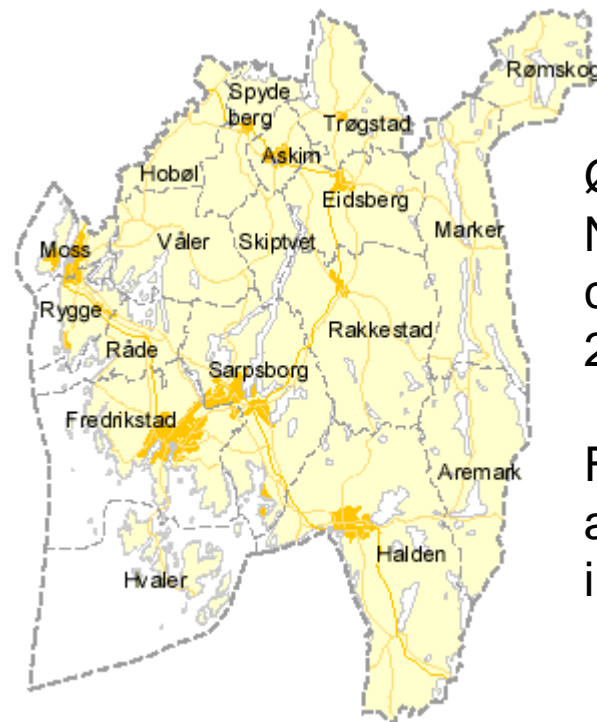


Automation of medicine logistics in an emergency ward

Sykehuset Østfold Helseforetak
Fredrikstad Hospital
NORWAY

SAIRAALATEKNIIKAN PÄIVÄT Seinäjoki 2009
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Østfold county, Norway



Østfold is situated in South of Norway and contains 18 local councils. Approximately 260.000 inhabitants.

Fredrikstad city has approximately 72.0000 inhabitants.



Sykehuset Østfold HF

Østfold Hospital has approximately 5000 employees and it has 2 emergency wards:

- **Fredrikstad**
- **Moss**

Moss receives medical patients from 5/18 councils. All other patients and patient categories are received at the emergency ward in Fredrikstad.



Fredrikstad emergency ward

The emergency ward received approximately 26.000 patients in the last year.

The ward is divided into the following:

- Observation-/ treatment rooms - 12 beds
- 3 emergency rooms - 7 beds
- TRIAGE - 1 bed
- Out-patients department - 2 beds
- Isolation room - 1 bed



Fredrikstad emergency ward

- We also have a co-ordination nurse who has responsibility for the department, SOS and secretaries.
- There are 85 nurses working over a 3 shift rotation
- In 2008 the TRIAGE system was introduced.

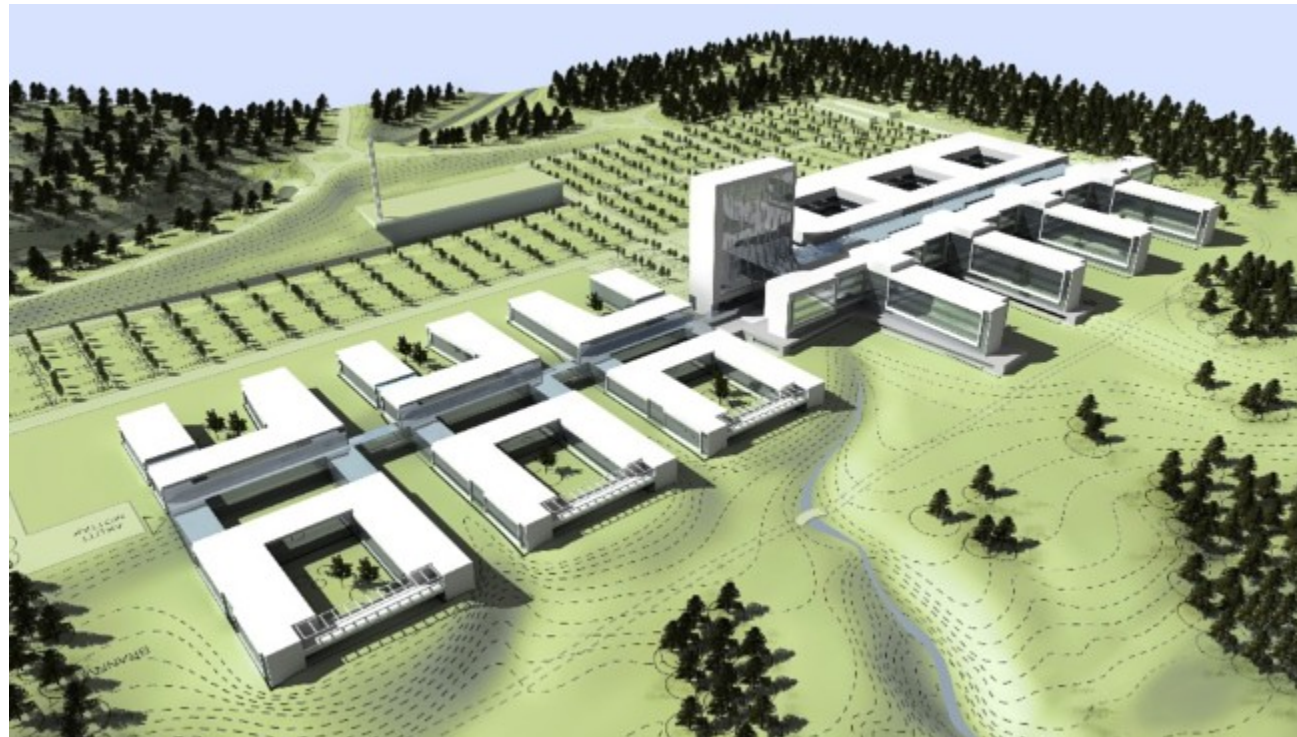


Background

- Fredrikstad Hospital wanted to obtain knowledge and experience of different solutions for the handling of medicines within the new hospital in Østfold.
- Security of drugs, but also to improve our dispensing methods from the pharmacy to the patient.
- Cooperation project about "*development of the hospital environment*" between SØ and VGR. (Vestra Gøtalandregion)
- Decision of a new hospital in December 2008.

New hospital in Østfold 2014

**Drawing
of the
plans of
the new
hospital in
Østfold,
KALNES**





Working plan for the project

(started 2006)

1. Surveyed medicine dispensing routines in SØ
 - a. Work progress
 - b. Routine/ procedure/documentation
 - c. Interview of the employees

2. Prepared specifications for tenders, where integration towards DIPS patient journal and the pharmacy system FarmaPro was an important requirement

3. Carry out public tender and negotiate a contract with one supplier.

Medicine logistics

Why look at medicine logistics?

- Too expensive
- Time demanding (use too much time)
- Source of error
- Non value-creating



Important specification to the supplier

- The solution must help the emergency ward to improve quality of the process from ordinance to the delivery of the medicine.
- A faster and more secure process so that the correct patient gets the correct medicine and it reduces the number of mistakes linked to the handling of medicine.
- Less waste in the supply of medicine and an improved economy.
- Less use of time with ordering medicine for all health personnel.
- An easier way of ordering medicine between the hospital Østfold and the Pharmacy to provide a better delivery system through an electronic ordering system





Integration

- After tendering we chose **Health Tech** as the supplier of the medicine cabinet. They had the best offer on price, integration towards DIPS and a great presentation of the product they will deliver.
- The installation consists of hardware and software from **Health Tech**
- The Project was carried out in close co-operation with the supplier, the emergency ward and the hospital pharmacy.
- The Software was adapted to local routines and great importance was attached to optimal configuration of the cabinet.
- Some of the medicine, for example Class A –is stored in the dispenser as single doses while other medicine is stored in drawers with many products.
- Also included is a refrigerator with an electronic lock.





Functions

- The solution is integrated with an electronic patient journal system, DIPS.
- All patients registered in DIPS, will appear on the medicine cabinet screen.
- The users log on with a magnetic card and a personal password.
- Admission card can be used to log on.
- All medicine can be picked directly from the cabinet.
- Use of single-dose increases effectiveness.
- All use of drugs are automatically registered by the medicine cabinet.



Our medicine cabinet





Re-filling

- The pharmacy automatically receives orders twice a week.
- The medicine cabinet is integrated with the Pharmacy software- Farmapro.
- The pharmacy supplies the medicine products and the products that are not used are returned in a separate container and the pharmacy disposes them.
- The functioning of the cabinet requires close and good cooperation between the hospital pharmacy and the emergency ward.



Cabinet drawer



Single - dose drawer



Negative Experiences

- Initially the integration between DIPS and the cabinet was a little unstable
- Unstable logging on with card
- Unsure users



Positive Experiences

- Automatic order reservation
- Order replenishment from hospital pharmacy.
- Drug account is written as a report.
- Quality improvement – less errors and good documentation.
- Medicine cabinet is placed centrally in the ward.
- Increased safety.
- You can print out various reports.



Are the objectives achieved

- Better control of class A drug
- Increased safety
- Timesaving for the pharmacy
- Timesaving for drug control
- Timesaving for the nurse
- Account

Time study

Old medicine room:

- Prescription *35* seconds
- Select medicine *180* seconds
- Control of another nurse *40* seconds
- Administering drug to patient *180* seconds
- Signing the prescription *10* seconds
- Total approximately **7.5** mins

New medicine Cabinet:

- Same amount of time
- *120* sec
- Control of cabinet
- Same amount of time
- Same amount of time
- Total approximately **5.5** mins





Account for the last 6 months

	July	August	September
2007	81 400	68 329	65 499
2008	54 137	54 300	65 784
	27 262	14 029	284
	October	November	December
2007	66 803	80 728	83 469
2008	61 260	81 734	78 534
	5 542	1 006	4 935
Saved:			50 478 NOK



What did the users say?

- Mixed impressions.
- Immediate stress with different types of problems.
- New way to get medicine – earlier we had a small medicine chest in the emergency rooms.
- Increased safety
- Less registration errors
- Saving time by not writing manually the use of Class A drugs
- Saving time by not having to search for medicine in our old medicine room.

Evaluation of HealthTech

- The company has carried out their deliveries/ activities under the terms of the existing agreement.
- The company has delivered the project to the price as agreed.
- Errors that were revealed within the approval time, were corrected instantly. Excellent service.
- The company should have taken more responsibility for the training of the users. At a later stage an e-learning program was introduced



Advice to others

Project phase:

- Use a lot of time for the training of the users.
- Have plenty of advanced and well trained users
- Plan the inventory carefully.
- Attach great importance to good cooperation with the hospital pharmacy.
- Think about all the different needs and functions on your ward.

Operations phase:

- Do not underestimate needs for *advanced and qualified staff*
- compulsory learning (E-Learning) of all substitutes and new employees.



Project Conclusion

**Almost everything ran according to the plan.
We started to use the cabinet 16.05.2008 with a
grand opening ceremony**

