



Outline of the presentation

- **The healthcare service and nursing care**
- Research questions, setting and cases
- Results - papers
- Contributions, implications and conclusion

The Healthcare Service

- Healthcare services growing in complexity
 - Need to cooperate and coordinate work across disciplinary and institutional boundaries.
- Ambitions: Integrated care, Shared care, Continuity of care
- Electronic Patient Record (EPR)
 - Main materialisation of the ongoing efforts of streamlining healthcare services
 - Anticipated effects such as low-cost and high quality still far from being realised in hospital settings

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Nursing care - the connecting practice

- *"it is nurses who weave together the many facets of the service and create order in a fast flowing and turbulent work environment"* (Allen 2004, p.279)
- Nursing - traditionally a narrative practice
- Formalisation of nursing care through the (EPR-based) nursing record
- So far - nurses compliance to a more structured record rather low

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Nursing and the EPR

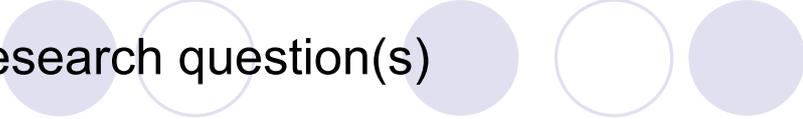
- Introduction of EPR for nurses in Norwegian hospitals still in an early phase
 - *“There does not exist any overview on how far we have come in the implementation phase. There are huge differences [between the different hospitals]. I think a lot of hospitals have started the transformation and believe a lot will be done this year”*
(email response from a representative from the Norwegian Nursing Organization - 11 January 2007)
- First introduction of EPR-based nursing record at St.Olavs hospital in 2004 - Perfect timing for me

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Research question(s)

- Explore the role and function of the nursing record in practice and how the relationship between tools for documenting and work-practice changes when the formalized EPR-based nursing record is being implemented in particular nursing practices.
 - How is nursing documented and communicated in practice?
 - How is the nursing record used across time and space, such as with other professionals and across institutional boundaries?
 - How is the EPR-based nursing record being integrated with the existing work-practice?

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Research setting

- Department of Rheumatology at St. Olavs University Hospital in Trondheim

... EPR-implementation in Trondheim delayed several times...

- Department of Special Psychiatry at the University Hospital in Tromsø

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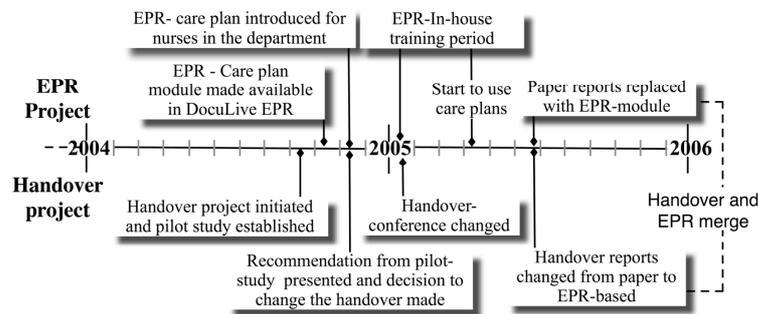
Research setting

	Trondheim	Tromsø
Hospital level figures		
1 Healthcare region	Mid-Norway	North Norway
2 Hospital name	St.Olav Univ. Hospital	Tromsø Univ. Hospital
3 Number of employees	8700	4500
4 Number of beds	1360	619
5 Inpatients per year	60 000	29 000
Units where I did my fieldwork		
- Type of disorder	Rheumatic	Psychiatric
- Type of treatment	Medical and surgery	Environ. therapy and medical
- Number of employees in total (approx)	25	50
- Number of nurses (approx)	20	45
- Number of patients per year (approx)	650	60
- Average hospitalization-length	8 days	6-8 weeks
The project and the nursing module		
6 E P R module (replace paper record)	Yes	Yes
7 Underlying doc. model for the system	VIPS	12 function areas
8 System / Vendor	Siemens DocuLive	DIPS
9 Main functionality	Reports and nursing plan	Reports and nursing plan
10 Integrated classifications schemes	None	NANDA and NIC

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Trondheim case - Dept of Rheumatology

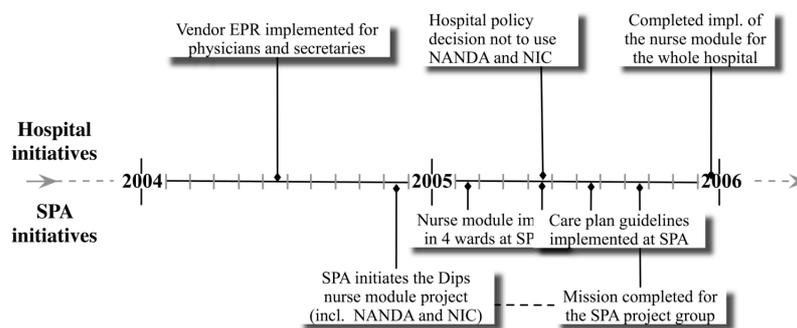
Two interrelated projects



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Tromsø case - Dept of Special Psychiatry

The local nursing project at SPA in the context of the larger hospital project



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Research results - seven papers

1. Berntsen K., Munkvold G. and Østerlie T. (2004) Community of Practice versus Practice of the Community, Knowing in Collaborative Work, in *ICFAI Journal of Knowledge Management*, 2(4), pp. 7-20.
2. Munkvold G. (2005) Practice-Based Knowledge Integration, in David Schwartz (Ed.): *Encyclopedia on Knowledge Management*, IDEA Group Inc., 2005, ISBN 1-59140-573-4.
3. Munkvold G., Ellingsen G. and Monteiro E. (2007) From plans to planning – the case of nurse care plans. *Group 2007*.
4. Munkvold G., Ellingsen G. and Koksvik H. (2006) Formalizing work – reallocating redundancy, in Proceedings of the 2006 20th anniversary conference on *Computer Supported Cooperative Work (CSCW)*, November 2006, Banff Canada
5. Munkvold G. and Divitini M. (2006) From storytelling to reporting - converted narratives, in *Proceedings of MCIS'06, the Mediterranean Conference on Information Systems*, October 2006 Venice, Italy.
6. Ellingsen G., Monteiro E. and Munkvold G. (2007) Standardization of work: co-constructive practice, *The Information Society 23*, pp.1-18.
7. Munkvold G. and Ellingsen G. (2007) Common Information Spaces along the illness trajectories of chronic patients. *European conference on Computer Supported Cooperative Work (ECSCW)*, 2007.

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Paper 1

Berntsen K., Munkvold G. and Østerlie T. (2004) Community of Practice versus Practice of the Community, Knowing in Collaborative Work, in *ICFAI Journal of Knowledge Management*, 2(4), pp. 7-20

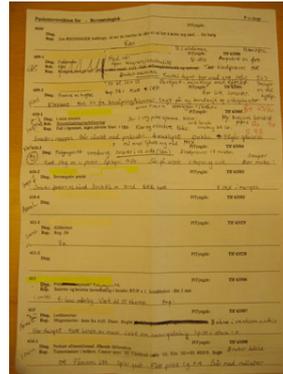
- The result of a common need to make sense of the literature
- Discuss practice oriented theories on knowledge sharing across time and space
- The paper exemplifies:
 - how practice oriented theories differ in their perspective on knowledge and working
 - practice-oriented approaches that conceptualize the material aspects of knowledge

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Paper 2

Munkvold G. (2005) Practice-Based Knowledge Integration, in David Schwartz (Ed.): *Encyclopedia on Knowledge Management*, IDEA Group Inc., 2005, ISBN 1-59140-573-4.

- Department of Rheumatology
- Explore the material aspects of knowledge integration
- The patient list as a coordination device
- Several mechanisms for integrating knowledge
 - tinkering
 - enacting
 - storytelling and circulating

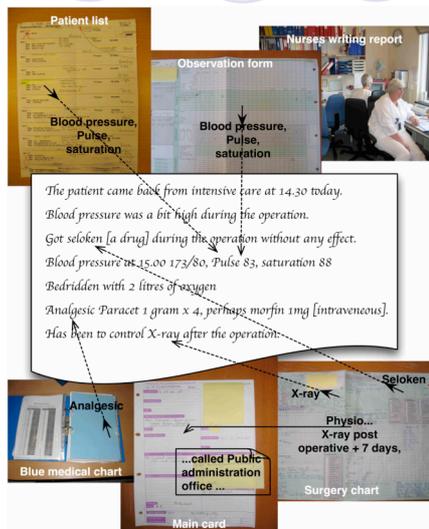


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Paper 3

Munkvold G., Ellingsen G. and Monteiro E. (2007) From plans to planning - the case of nurse care plans. Group 2007.

- Department of Rheumatology
- Planning as process
- The *distributed* nature of plans
- Redundancy



Paper 4

Munkvold G., Ellingsen G. and Koksvik H. (2006)
Formalizing work – reallocating redundancy, in Proceedings of the
2006 20th anniversary conference on Computer Supported
Cooperative Work (CSCW), November 2006

- Department of Rheumatology
- Formalisation of the handover conference and introduction of the EPR
- Redundancy and informal routines moved
 - to another time
 - into different artefacts
 - old artefacts that now were used / annotated differently
- Informal routines- the initial problem -became part of the solution in order to make the new formalized practice work.

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Paper 5

Munkvold G. and Divitini M. (2006) From storytelling to reporting - converted narratives, in *Proceedings of MCIS'06, the Mediterranean Conference on Information Systems*, Venice, Italy

- Department of Rheumatology
- Same case as in paper 4
- Handover conference as an occasion for sensemaking
 - Tailored stories in the old oral handover conference
 - Smaller isolated narratives attached to the places in the trajectory where navigation was carried out in the new written handover practice

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Paper 6

Ellingsen G., Monteiro E. and Munkvold G. (2007)
Standardization of work: co-constructive practice,
The Information Society 23, pp.1-18.

- Dept of Special Psychiatry/Psychogeriatric ward
- Introduction of the nursing plan with an embedded classification scheme
- Invisible work of fitting categories
- Transformation of categories
- Nursing plan as tool for resource management
- From implications for design to an arena/-network based perspective on interventions

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Paper 7

Munkvold G. and Ellingsen G. (2007) Common Information Spaces along the illness trajectories of chronic patients. *European conference on Computer Supported Cooperative Work (ECSCW), 2007*

- Dept of Special Psychiatry/Psychogeriatric Ward
- Nursing plan used less than expected and in particular in close cooperative settings
- Nursing plan promotes the nursing perspective as medical cardex for physician
- A perspective on how to conceptualize Common Information Space where various perspectives are accounted for is developed by drawing on the notion of trajectories.

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The papers contribution to the research questions

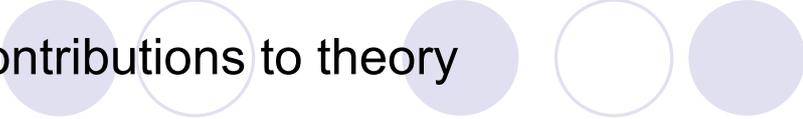
	Paper 1	Paper 2	Paper 3	Paper 4	Paper 5	Paper 6	Paper 7
RQ 1: How is nursing documented and communicated in practice?	Dark Grey	Black	Black	Light Grey	Light Grey	Dark Grey	Dark Grey
RQ 2: How is the nursing documentation used across time and space, such as in interaction with other professionals and across institutional boundaries?	White	Light Grey	Dark Grey	Dark Grey	Dark Grey	Light Grey	Black
RQ 3: How is the EPR-based nursing record being integrated with the existing work practice?	White	White	Light Grey	Black	Black	Black	Dark Grey

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Contributions to theory

- A perspective on the nursing record as achieved in practice
- The reciprocal relationship between formal and informal representations of work and how these transform over time
 - e.g. process change from tailoring to navigation
 - e.g. reintroduction of redundancy
- A common information space as not physical/virtual common place, but rather that it encompasses several disconnected trajectories.

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Implications for practice

- Integrate new systems into the existing assembly of material and human entities
- From a focus on merging entities to a focus on embracing multiplicity
- Attend to the non-common information that should remain local to the various professionals
- Balance between rationale aims and practical applicability when designing and implementing EPRs

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Implications for Method

- Follow the whole implementation process (and thus be able to follow how things evolve over time)
- Operating on various arenas together with different stakeholders - making the research practically relevant

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Conclusion and recommendation for further work

- Thesis explores in detail efforts of introducing the electronic-based nursing module by following the whole process
- Cases in this study are limited and applicability of findings to e.g. acute care more tentative
- More research needed that follow the whole process of implementing a system
- Look closer at how work unfolds across disciplinary and institutional boundaries

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