Empowering Nurses by Making Electronic Patient Records Collaboratively Available

... or ...

The role of ethnography in the design and implementation of large IT systems

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The role of ethnography

- Existing work practices (prior to system implementation)
- New IT
- New work practices (after system implementation)

1. Ethnography informing design
2. Ethnography evaluating IT use
The task-artifact cycle  Carroll et al., (1991)
A new role for ethnography

A sustained iterative design approach inspired by Carroll et al., (1991); Orlikowski and Hofman (1997)
Collaboration: Vendor (CSC); regional EPR unit; acute stroke unit; researchers (evaluation)

- Fully integrated EPR (243 screens, 300K patients, 26M records) configured during 5 workshops with clinicians
- EPR in real use 24 hours a day in one week
- All Clinicians used EPR (no paper records used)
- ‘Back-office’ using Wizard-of-Oz techniques
- 38% (183 out of 482) design ideas emerged during 5 days of real use
Nursing handover
From oral information to collective investigation
Empowering nurses  Murnane (2005)

- Most physicians in attendance inspects the patients periodically and act on a ‘snapshot’ of the patients’ medical status

- Nurses represent a more continuously monitoring and interacting with the patients

- The emerging collective investigations stimulated mutual learning situations that ‘empowered’ the nurses interaction with physicians

- Case ‘vignette’:
  - An older woman with symptoms of having had a stroke in her brain
  - Observed by nurses and seen by physicians in attendance
  - Investigated at nursing handover prior to team conference and ward round
  - At the team conference the physicians acknowledge the nurses’ investigation and change the patients’ diagnosis to an acute kidney malfunction
Physicians

- I-1: Sodium chloride is installed for slow infusion over night
- I-2: Infusion increased because of increasing creatinine
- I-3: Attempts catheterization, but without success. Contact made to the gynecological ward
- I-4: More sodium chloride because of possible dehydration

Nurses

- Observe little urine out
- Discuss catheter problems (H1)
- Discuss bladder dysfunction (H2)
- Investigates stroke scores (challenges H2)
- Doubts H1 and H2 and suspect a new H3 (kidney failure)
- Forwards results of their investigation to team conference
Results

- New requirements for designing the EPR user interface to support collective investigation
- Different role for the nurse team leader during handover (from gatekeeper to floor manager)
- More active and salient role for nurses during team conferences
- Motivated nurses to obtain more structured documentation to indicate relevant observations in EPR user interface for team conferences
Implications for ethnography

- From a descriptive observer role to a ‘Participatory Design’ role (Simonsen and Kensing, 1997)

- Focus on unanticipated change (support vs. constraints) and on informing further design

- Intensive and short-termed observations required, ’quick-and-dirty’ or ’rapid’ ethnography (Hughes et al., 1995; Millen, 2000)

- Situations to observe must carefully be selected and prioritized (a.o. to compare ’before-situations’ with ’after-situations’)

- Special awareness ascribed to the limitations, constraints, and biases due to the pilot implementation (learning curve, maturity of IT and organization, “being-in-a-study effect”, etc.)