Rapid Roaming User Access and Workforce Efficiency in Aged Care

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Nurses 65% workforce

Nursing shortage increasing as population ages\(^1\)

Patient outcomes\(^2\) and job satisfaction correlate with time nurses spend with their patients.

Reducing non value-added time for nurses thus has the potential to not only increase nursing workforce efficiency, but also to increase job satisfaction and improve patient outcomes

\(^1\) Buchan and Aiken 2009 \quad \(^2\) Neddleman et al 2002 NEJM 246(22):1715-1722
What Nurses Do in Acute Care

Studies of 767 medical and surgical ward nurses (USA)

- **Value adding activities:** about 60% time
  - 25%-75% time in direct clinical care
  - Indirect care 7-37%

- **Waste activities** 7-10% time
  - looking for people & things, waiting, walking

- **Walk 2.4 -3.4 miles per 10-hour daytime shift**

Wasted Time Using electronic Medical Records

- Non Value Adding time in electronic records includes logging on and off, and navigating through the record.
- Auditor general requires individual, unique logons for security and audit purposes.
- Study at RPA Emergency Department – Logging on 3 min, 20 plus times a day (Intel and Cisco, 2007).
- Clinicians either continually log on and off or use generic logons.

This is not functional.
CHIsL: Rapid Roaming User Access

- Benchmarking 2007- St Olavs, Norway- 26 sec to log on. Still not functional and clinicians used generic logons.
- Some quicker proprietary systems now available, but significant expense for new IT systems.
- Requires introduction of new infrastructure and change computers to think clients

- **Aim sub 10 sec to log on, instant log off, using generic hospital systems.**

- Developed CHIsL
About CHIsL

- CHIsL is software that can be installed on existing computers to make them act as thin clients.
- Increased speed of access for accessing terminal services or Citrix sessions.
- Decreased computing demand => can be run on older devices, saving cost.
- Health services can evaluate and migrate to the system gradually as they have save the funding on peripheral devices and add to their central server power.
Rapid Roaming Access: the study

- Victorian Department of Human Services - Workforce Innovation grant 2009
- Time and motion study of Nurses (RN1) and Personal Care Attendants (PCAs) with and without rapid roaming access
- Samarinda Aged Care
  - Mixed low and high care facility
  - 40 Beds
  - Very advanced in use of ICT
  - Use RFID, Vocera, & ICare electronic medical records
- Aim: To support high quality care and reduce inefficiencies
Rapid Roaming Access: the study

- Baseline time and motion data. 6 days RN1 and 7 days PCA activity.
- 1 additional day without generic logins for an RN1.
- Implemented CHIsL and Terminal Services.
- User sessions running on the back end servers, and existing laptops and desktops acting as thin clients.
- 2 days RN1 and 3 days PCA data collected post implementation. More data collection underway.
- Initial data presented here.
Findings

RN1 - over 500 tasks per day
- Communications 30%
- Medication 26%
- Records 21%
- General 13%
  (Finding things, people. Walking between tasks)

Steele C, Connor T, Smolenaers F 2009
- 85% time in Value Adding activities
- 56.5 min per day NVA activities
  - Electronic medical records (17.2 min)
  - Walking between tasks (17.9 min)
  - Other (18 min)
Non Value Adding Time in Electronic Records: the risks

Non Value Adding Electronic Record Activities of Nursing RN1 Aged Care

- **unique login**
  - Logging into clinical application: 30.00%
  - Logging onto computers (1st time): 20.00%
  - Logging onto computers (after 1st time): 10.00%
  - Opening resident related documents: 10.00%
  - Re-entering lost data due to time out: 10.00%

- **generic logon**
  - Other electronic record keeping: 10.00%
Using CHIsL

- Total NVA time reduced from 15% to 10% of shift
- Potentially avoidable NVA time on electronic medical records ↓ from 4.6% to 1.9% of shift
- Number of times accessing electronic records ↑ from 6 to 10 times per shift
- Time saved was used in increased communication - handover and patient related communications with other staff
Non Value Adding Time in Electronic Records

Non Value Adding Electronic Record Activities of Nursing RN1
Aged Care

- Logging into clinical application
- Opening resident related documents
- Other electronic record keeping
- Logging onto computers (after 1st time)
- Re-entering lost data due to time out
Staff comments

- “Able to stop work on the computer and return without loosing any information. Its great!”
- “Good for scheduled tasks, to be able to do easy charting throughout shift”
- “Great not to loose an assessment that is half completed if called away from the computer”
Next Steps

- Further collection of data at Samarinda
- Analysis of other VA and NVA activities
- Examine the relationship between nursing activities and funding model
- Use baseline data for other interventions over time
- Install and evaluate at acute care services
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