



PURPOSE

The purpose of this research is to evaluate the implementation of a clinical information system in one home care agency in the province of Ontario. The study investigates nurses' perceptions of barriers and facilitators to adoption of the electronic clinical information system, and evaluates changes in organizational culture, evidence-based practice, and quality of care over three years.

BACKGROUND

Implementation of an electronic health record (EHR) system is generally believed to improve the quality of patient care by increasing the availability of patient healthcare information and by assuring consistent implementation of evidence-based standards of nursing care. Due to the variability of systems and clinical users, there is little agreement on common trends that predict successful EHR implementation. A BlackBerry hosted application was developed that enables wireless recording of homecare nursing visit data as well as documentation of clinical data such as Health Outcomes for Better Information and Care (HOBIC).

RESEARCH METHODOLOGY

Design

A mixed method design utilizing surveys, corporate data collection, and qualitative interviews is being used over three years.

Setting

One home health care agency in the province of Ontario.

Sample

Pilot: one site office of the home care agency N=47 (survey); N=15 for semi-structured interviews.

Longitudinal: all site offices of the home care agency N=656; N=15 for semi-structured interviews.

Data Collection Method

Pilot: On-line questionnaire and semi-structured interviews. Participants provided with consent and access to online questionnaire (Questionnaire for User Interface Satisfaction, modified).

Semi structured interview conducted via telephone.

METHODOLOGY CON'T

Longitudinal: Three points in time (2011, 2012, 2013).
On-line or paper questionnaire, semi-structured telephone interviews, and organizational quality indicators.
Questionnaire: User Interface Satisfaction Questionnaire, Alberta Context Tool, Attitudes towards Research Utilization, Attitudes towards Electronic Documentation.
Time 1 data collection completed May, 2011.

RESULTS

Pilot

n=2 for questionnaire; n=1 for interview.
All participants female; diploma highest level of education; mean number of years in organization 5.9; mean number of years in nursing 11.6; average age 45.

Questionnaire

| | Mean (SD) |
|---|-----------|
| Ease of reading characters on the screen | 8.5 (.71) |
| Helpfulness of highlighting on the screen | 8.5 (.71) |
| Clarity of sequencing of characters on screen | 8 (1.4) |
| Consistency of terminology | 8.5 (.71) |
| Clarity of messages on screen | 8.5 (.71) |
| Assessment information logically linked | 8.5 (.71) |
| Ease of learning to operate the system | 7.5 (.71) |
| Tasks performed in straightforward manner | 8 (1.4) |
| Overall experience using the system (wonderful, satisfying) | 5 (0) |
| Overall experience using the system (stimulating) | 6 (0) |

Table 1: Satisfaction with Features of Technology/Software 1 (low) / 9 (high)

Interviews

Three themes identified: hardware, network, context.
Hardware: Quick access and easy to navigate ; very little information fits on screen; hard to read and find information.

Network: issues in rural areas.

Context: Good IT and managerial/leadership support , except for weekends; Do not currently use for entering clinical (i.e., BP/BS still documented on paper).

Longitudinal Time 1

Questionnaire: No preliminary data available.

Semi-structured interviews: n=9; all female; 7 RN supervisors, 1 RN frontline staff; 1 RPN.

Themes

Patient Outcomes: Thorough assessment improves identification of potential client problems

I think the assessment "triggers" questions. It's a more thorough way of doing things and I think it will improve patient outcomes in the future.

Nursing Workflow: eOBC affects natural workflow

A change in practice is required because the eOBC has a specific flow which is not how I do things.

Nurse-Client Therapeutic Relationship:

Technology perceived as a barrier

It's just with the older population, you feel a little disassociated from the client when your doing it on the phone I find.

RESULTS CON'T

Communication: Improved ease of communication with other staff nurses and managers and timeliness

I don't use the phone a lot. When I email, I get a faster answer from the supervisor.

Ergonomic Problems

Nurses actually have been complaining about physical pain, um, in their arms and neck and thumbs from having to do longer assessments than they would normally do on paper.

NEXT STEPS

Focus Group (internal end-users) Aug 2011; Oct 2012.
Time 2 & 3 data collection (questionnaire); Quality indicators (chart audit) Feb 2012, Feb 2013.
Interviews (external end-users) Feb 2012, April 2013.

ACKNOWLEDGMENTS

This study is part of Healthcare Support through Information Technology Enhancements (hSITE) and is funded by Natural Sciences and Engineering Research Council (Strategic Network Program) and ParaMed Home Health Care.