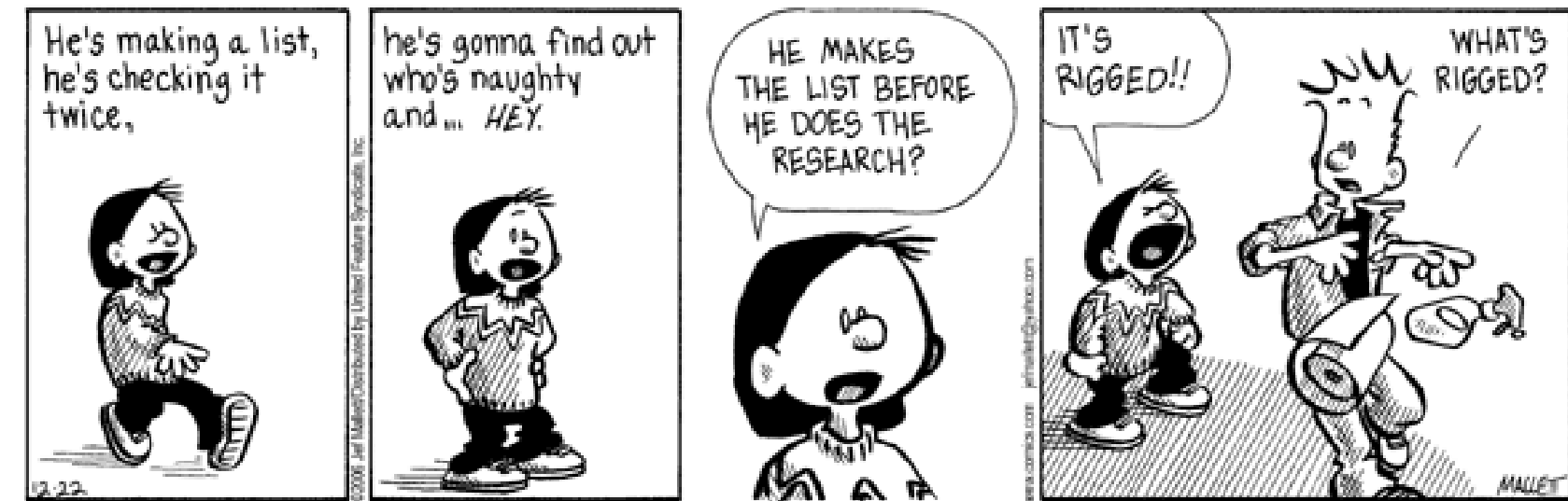


Factors that enhance nurses use of health information systems to support clinical decision-making

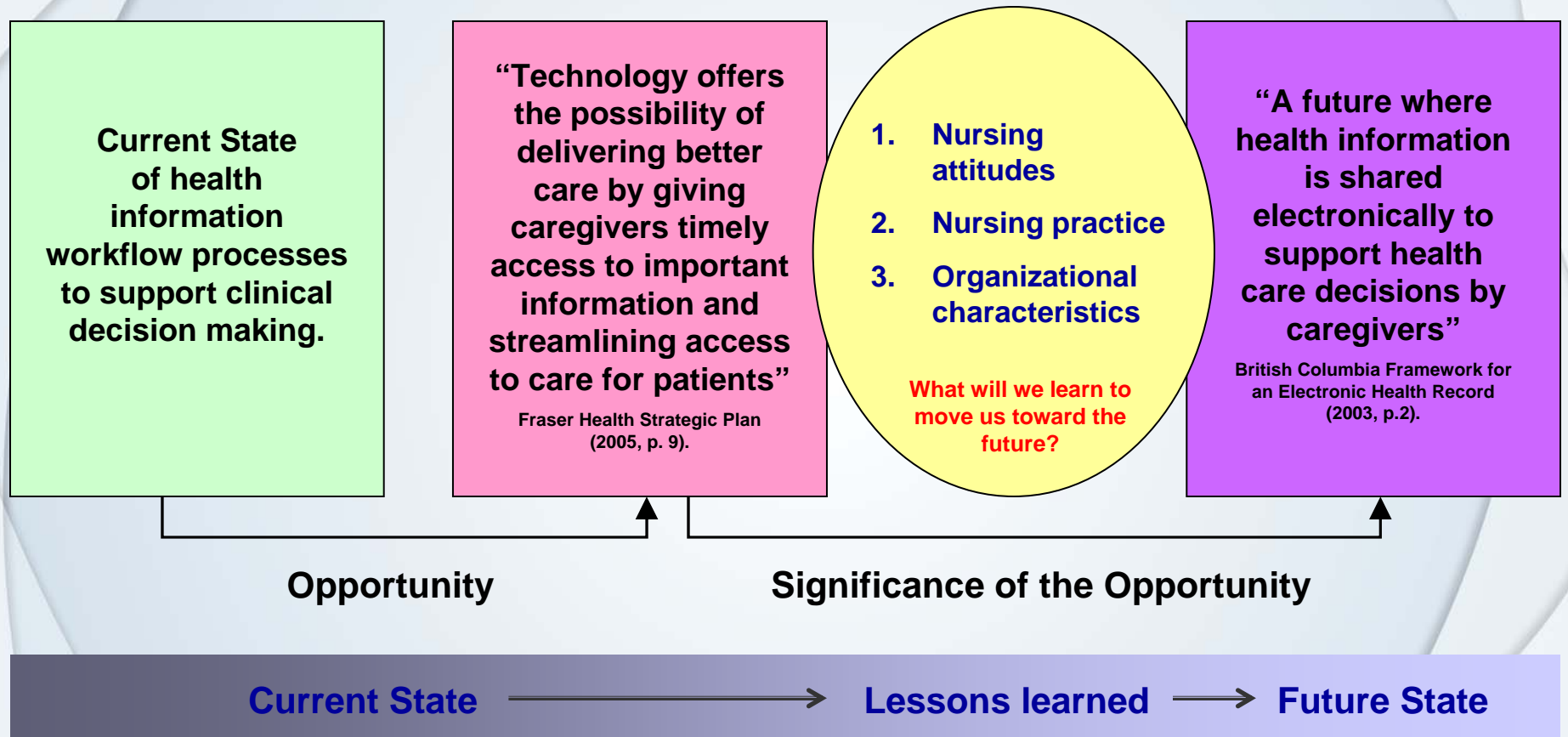
Corey Dalziel, RN, BSN, MA.
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Fraser Health Authority

Research



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Research Methodology



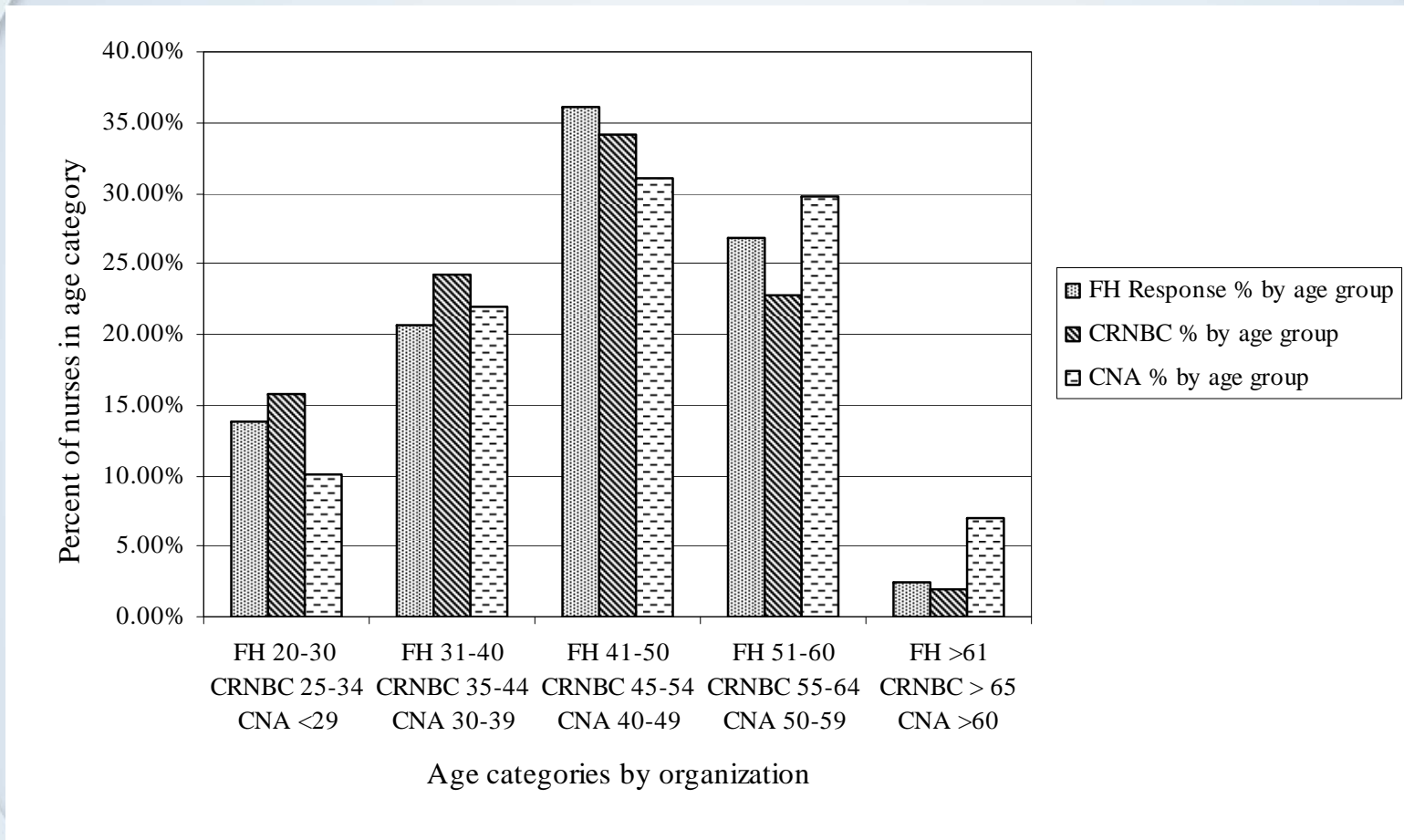
Data Analysis

- Survey data was analyzed using quantitative and qualitative methods
- Data analyzed from the survey was presented to the focus groups for further qualitative data
- Focus groups were then asked, “if you had 15 minutes with the executive to tell them what you need to make the shift from paper-based patient charts to electronic health records, what would you tell them?”

Participants

- Survey questionnaire
 - 4800 nurses invited to participate
 - Paper and SurveyMonkey ©
 - 250 respondents for 5.21% return rate
- 2 focus groups
 - 8 participants at BUH & 4 at LMH
 - witnessed, taped and transcribed
- Compared to CRNBC and CNA statistics
 - good mix of age, years of experience and program specialty
 - higher than Canadian average for bachelors prepared nurses

Participants - Age



The age demographic showed reasonable representation to nurses from across British Columbia and Canada.

Participants – Years of Experience

Years of experience	FH response rate
under 5 years	14.64%
6 to 10 years	13.39%
11 to 15 years	10.04%
16 to 20 years	11.72%
21 to 25 years	16.32%
26 to 30 years	18.83%
31 years or more	15.06%

Table 5 *FH respondent years of experience.*

Participant – Clinical Specialty

Clinical specialty	FH response rate
Cardiovascular	6.33%
Child Youth Services	6.74%
Critical Care	10.13%
Emergency	11.39%
Hospice / Palliative	1.69%
Medical	16.46%
Mental Health	2.53%
Neurology	0.84%
Orthopedics	0.84%
Perinatal	8.02%
Renal	3.38%
Sub-Acute / Geriatrics	10.97%
Surgical services	14.77%
Ambulant care	3.38%
Administration / Management	2.53%

Table 6 *FH respondent clinical specialties represented.*

Participants – Highest Education Level

Highest education level completed	Fraser Health response rate by education demographics	2005 CNA education demographics
Diploma	48.95%	66%
Bachelors degree	41.42%	32%
Masters degree	3.77%	2.40%
Doctorate	0.00%	0.10%

Table 7 *FH respondent education level compared to CNA education demographics.*

Findings – Nurses attitudes

- Within the survey the nurses demonstrated an overall positive attitude towards computers
 - However, the focus groups painted a less positive picture of computers (illiterate, lack of confidence)
 - Focus group expressed the need to advance clinical systems within FH to increase use / attitudes / practice
- Areas affecting nurses attitudes include:
 - Questions about computers being part of nursing work? (1)
 - Nursing are very concerned about time away from patient care (2)

Nursing Informatics

According to CNA NI is defined as,

“a specialty that integrates nursing science, computer science, and information science to manage and communicate data, information, and knowledge in nursing practice. Nursing informatics facilitates the integration of data, information, and knowledge to support patients, nurses, and other providers in their decision making in all roles and settings. This support is accomplished through the use of information structures, information processes and information technology”

Staggers & Thompson (2002)

Findings – Nursing Practice

- 83% of nurses surveyed agreed NI is part of their practice
- Nursing informatics competencies
 - Computer literacy (92%)
 - Confidentiality (89%)
 - Communication (88%)
 - Using the health information system (93%)

Findings – Organizational Characteristics

- Leadership modeling NI competencies
 - Computer literacy – educates staff (64%)
 - Confidentiality – ensure staff have own ID (71%)
 - Communication – sends email (93%)
 - Uses a computer during work (92%)
 - Uses the HIS to support patient care (84%)

- Organizational characteristics
 - FH supports the use of computers (89%)
 - Computers are available (88%)
 - I know who to contact for help (85%)
 - If offered, I would attend refresher classes (53%)

Age & confidence

Confidence in using a computer at home by age.	Agree strongly	Agree somewhat	Neither agree nor disagree	Disagree somewhat	Disagree strongly
20 to 30 years (n=33)	85%	12%	3%	0%	0%
31 to 40 years (n=49)	61%	33%	2%	4%	0%
41 to 50 years (n=86)	59%	23%	5%	9%	3%
51 to 60 years (n=64)	50%	31%	11%	3%	3%
> 61 years (n=6)	0%	50%	0%	33%	17%

Table 16 Age variable: confidence in using a computer at home.

(3)

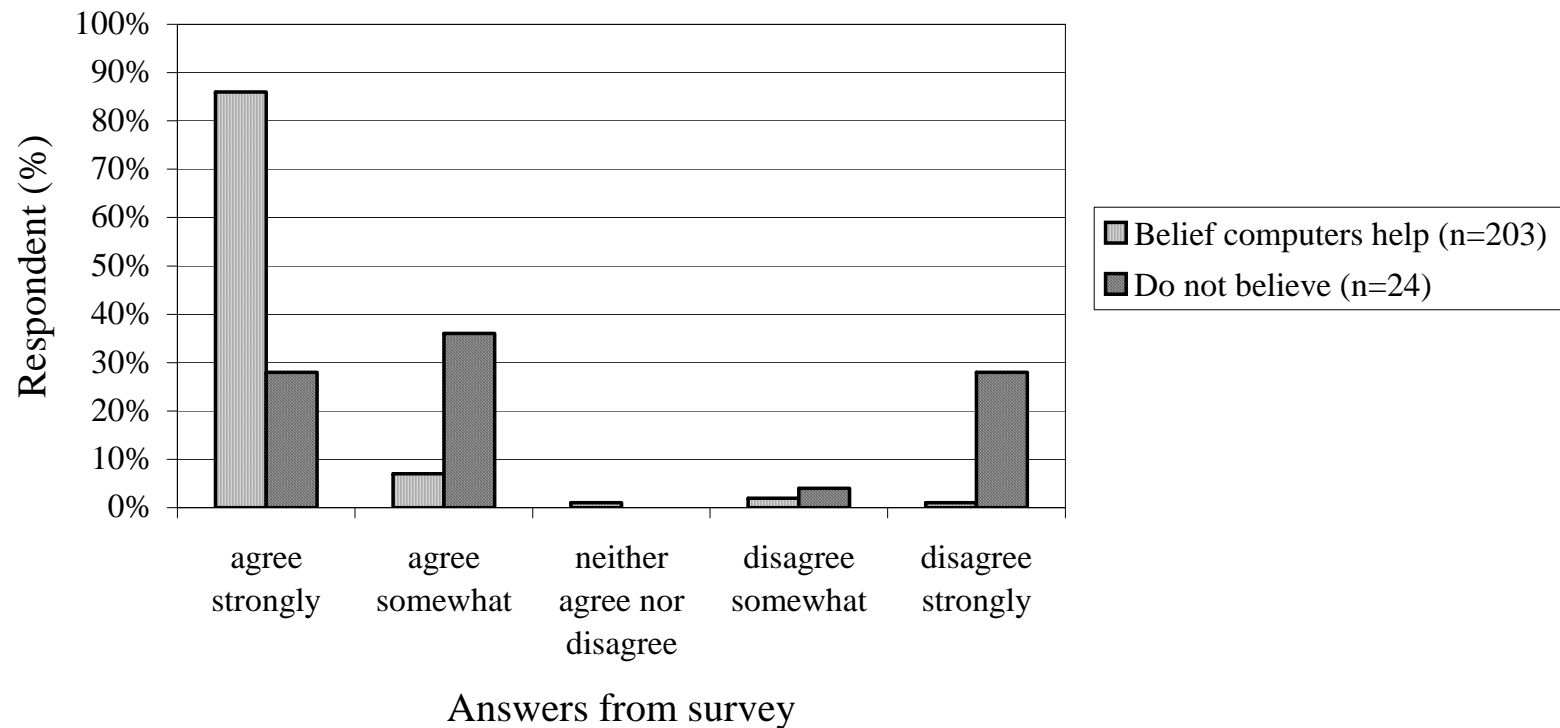
Age & willingness to take computer education

Willingness to attend basic computer education classes by age.	Agree strongly	Agree somewhat	Neither agree nor disagree	Disagree somewhat	Disagree strongly
20 to 30 years (n=32)	12%	18%	12%	9%	45%
31 to 40 years (n=48)	27%	27%	12%	8%	24%
41 to 50 years (n=84)	29%	16%	13%	21%	19
51 to 60 years (n=64)	47%	14%	19%	8%	1%
> 61 years (n=6)	100%	0%	0%	0%	0

Table 18 Age variable: willingness to attend basic computer education.

The power of believing

Belief variable compared to using the computer to look up patient results or enter patient orders



Recommendations

- Supporting the change to eHealth information
 - Communication - internal / public
 - Leadership modeling computer competence
 - Policies & standards to support informatics
 - Support physicians in their adoption of health information systems

Recommendations

- Education
 - Increase access to training including basic computer education and refresher classes
 - Remove approval process to access education
 - 'Closer to home' program
 - Internal communication campaign surrounding ways to get help 'just in time'

Recommendations

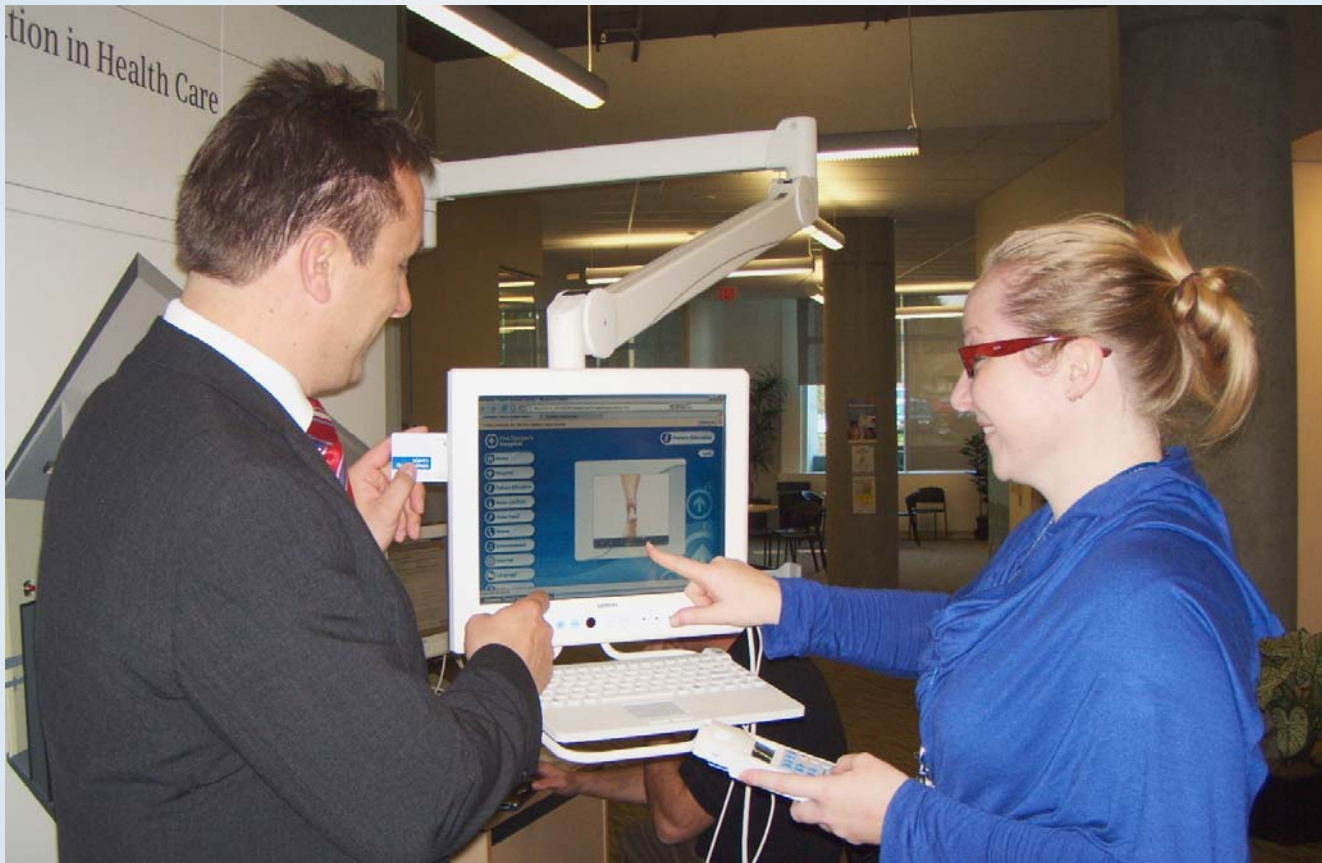
- Nursing / clinical informatics support team
 - Should report to Information Management
 - Requires a Community of practice model
- Computer hardware / technology
 - Simplify sign-on
 - Increase technology devices (PCs) without compromising patient care workflow processes

Recommendations



Increase number of devices by placing strategically or making them mobile

Recommendations



Integrate devices into the patients' bed-head footprint

Recommendations

- Advance clinical information systems
 - Begin implementation of advanced clinical systems including nursing documentation, care planning, bedside medication verification, etc.
 - Nursing documentation should be integrated creating a patient centered multi-disciplinary plan that is viewable within the electronic health record

Lessons Learned

- Communication to 4800 + nurses
- Pilot your survey questions / questionnaire
- Focus group scribes and transcribed reports
- Witnesses to the research process esp. in backyard research



Questions?



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Thank you!