

# An Information System's Contribution to Work Satisfaction: Differing Perspectives Between Doctors and Nurses



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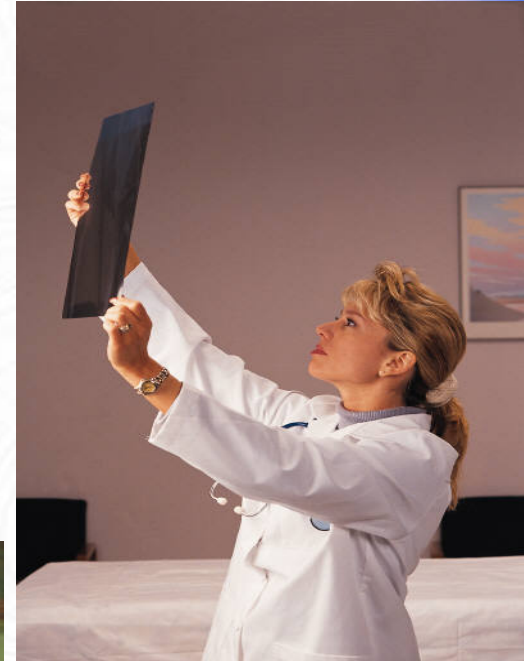
# CONTEXT



# NSW HEALTH LANDSCAPE

- 140 NSW Emergency Departments (EDs) with > 2 million presentations/year
- Taskforce identified lack of metrics for:
  - waiting times
  - access block
  - triage benchmark
- Recommended rapid deployment of computerised Emergency Department Information System (EDIS)
- Installed in 45 NSW EDs (75% activity)

# METHODOLOGY



# STUDY LANDSCAPE

- 5 Sydney metropolitan EDs
- Upgrading datafile version to MS SQL
- 500 person visits daily
- Differences – clinician number, service delivery, initial implementation, workflow integration
- 303 clinicians invited to participate
- 160 clinicians responded (53% RR)
- 74 doctors and 86 nurses

# STUDY INSTRUMENT

- Self-administered and context-specific questionnaire
- Developed from Axford & Carter (1996)
- 10 Demographic categories
- 8 Clustered impact statements related to work satisfaction
- 5-point Likert response scale  
(1 Strongly Disagree → 5 Strongly Agree)
- Agree (4+5), Neutral (3), Disagree (1+2)

# STUDY RESULTS



# MODAL DEMOGRAPHICS <sup>1</sup>

Category	Attribute	%
1. Sex	Female	65
2. Age	30-34 years	21
3. Education	Bachelor degree	43
4. Profession	Nursing	54
5. Experience	> 10 years of nursing	53

# MODAL DEMOGRAPHICS <sup>2</sup>

Category	Attribute	%
6. ED Experience	> 10 years	24
7. EDIS Experience	Preceding 12 months	63
8. EDIS Access	Constantly	45
9. Employment Status	Full-time	61
10. Hospital	A	29

# WORK SATISFACTION <sup>1</sup>

- Social context integral to information system evaluation (Coiera 2000)
- Clinicians generally view data entry as irrelevant to their core activity (Audit Commission 2004)
- The primary role of medical officers and nurses is patient care, and the introduction of technology must assist the flow of work rather than detract from it  
(Berg 2003, Callen et al 2006)

# WORK SATISFACTION <sup>2</sup>

- User-hostile software that does not support work practice will generate clinician resistance
- IS use depends upon the synergy between technology, the user, and their work  
(Callen et al 2006)
- Technology Transfer Acceptance theories such as Davis' TAM and Rogers' DOI useful when attempting to explain why clinicians accept or reject ISs

# POSITIVE STATEMENTS <sup>1</sup>

## Contributes to Work Satisfaction

1. I feel secure in the knowledge that information is not lost or old

- 45% Medical / 52% Nursing Agree

2. I have better access to information

- 44% Medical / 71% Nursing Agree
- $\chi^2$  14.6 p 0.001

# POSITIVE STATEMENTS <sup>2</sup>

## Contributes to Work Satisfaction

3. It organises the relevant information about each patient

- 39% Medical / 63% Nursing Agree
- $\chi^2$  10.2 p 0.006

4. It enables me to use my expertise

- 5% Medical / 47% Nursing Agree
- $\chi^2$  38.3 p 0.000

# NEGATIVE STATEMENTS <sup>1</sup>

## Decreases Work Satisfaction

1. I don't trust the system to be accurate
  - 68% Medical / 67% Nursing Disagree
2. It is very frustrating when learning about the system and how to use it
  - 82% Medical / 68% Nursing Disagree

# NEGATIVE STATEMENTS <sup>2</sup>

## Decreases Work Satisfaction

### 3. It disrupts my thought processes

- 70% Medical / 71% Nursing Disagree

### 4. Our work effort is less visible

- 70% Medical / 63% Nursing Disagree

# WORK SATISFACTION <sup>3</sup>

- Organisational structure and workflow
- Work practice and organisational goals
- ISs:
  - challenge assumptions and beliefs
  - disturb conventional conduct
  - modify practice routines
- Individual reaction
- Concerns – skill elimination, role erosion

# CONCLUSION <sup>1</sup>

- EDIS not viewed as undermining work output despite:
  - Few tangible benefits for clinicians
  - Application having multiple screens and sub-screens



# CONCLUSION <sup>2</sup>

- Nurses have more positive attitudes towards EDIS than medical officers in relation to an association with work satisfaction:
  - Invisible articulation work
  - Professional credibility



# CONCLUSION <sup>3</sup>

- Further research is needed in relation to ISs enabling nurses to use expertise



# QUESTIONS

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