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Safety, quality, innovation – an organisational communication perspective for health IT

Never Stand Still | Faculty of Medicine | Centre for Health Systems and Safety Research

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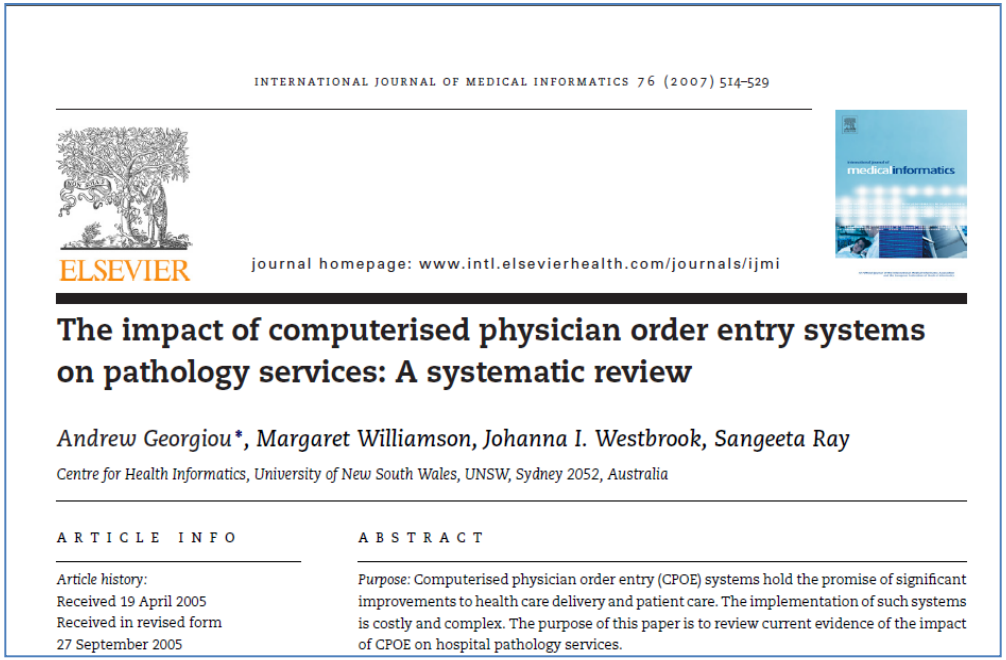
Evidence of the impact of health IT

- The impact on ancillary departments remains under researched and poorly understood.
- Problems of generalisability
- Few studies across multiple sites
- Inadequate emphasis on patient outcomes



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The impact of computerised physician order entry systems on pathology services: A systematic review

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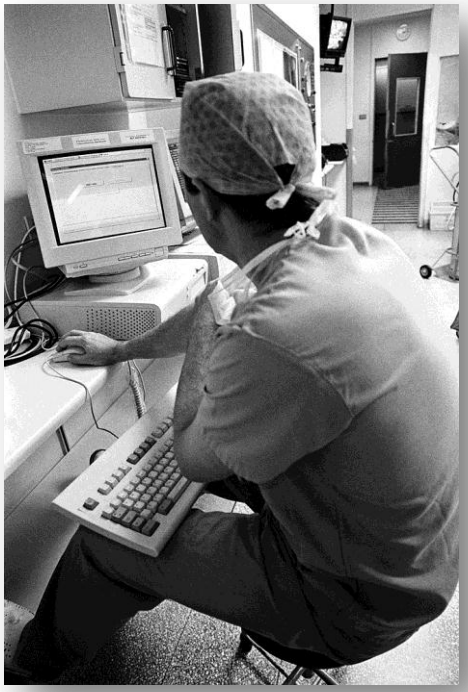
ABSTRACT

Purpose: Computerised physician order entry (CPOE) systems hold the promise of significant improvements to health care delivery and patient care. The implementation of such systems is costly and complex. The purpose of this paper is to review current evidence of the impact of CPOE on hospital pathology services.

Research question

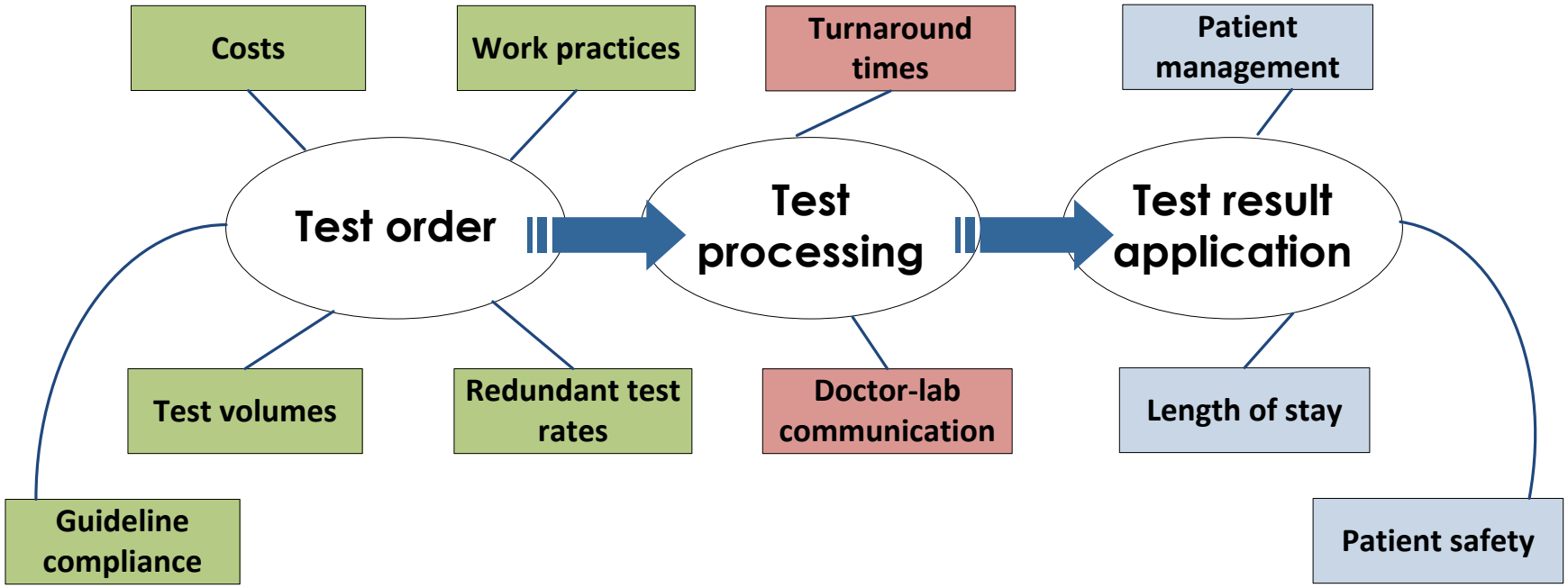


What is the impact on pathology services, their work processes and relationships with other departments, and on key performance indicators?

Design and Setting

- Hospital pathology service that covers 7 major hospitals
- Employs over 300 staff
- Located at a major tertiary referral hospital in Sydney
- Multi-method study (2004 – 2008)

Key performance metrics



Georgiou et al. *Int J Med Info* 2006

Turnaround times and tests volumes

Turnaround time = time from receipt of specimen in laboratory to report of result

Test turnaround time significantly declined Year 1 by 18.6% , Year 2 by 12.6%

	Period	No. of tests	Mean in minutes (95% CI)
All tests	2003	97851	35.35 (35.11,35.59)
	2004	113752	28.77 (28.59,28.95)
	2005	131022	25.14 (24.99,25.29)

Average number of tests per patient did not change:

92.5 assays/pt vs 103.2 (P=0.23)

Westbrook et al, Journal of Clinical Pathology 2006

Results from regression analysis

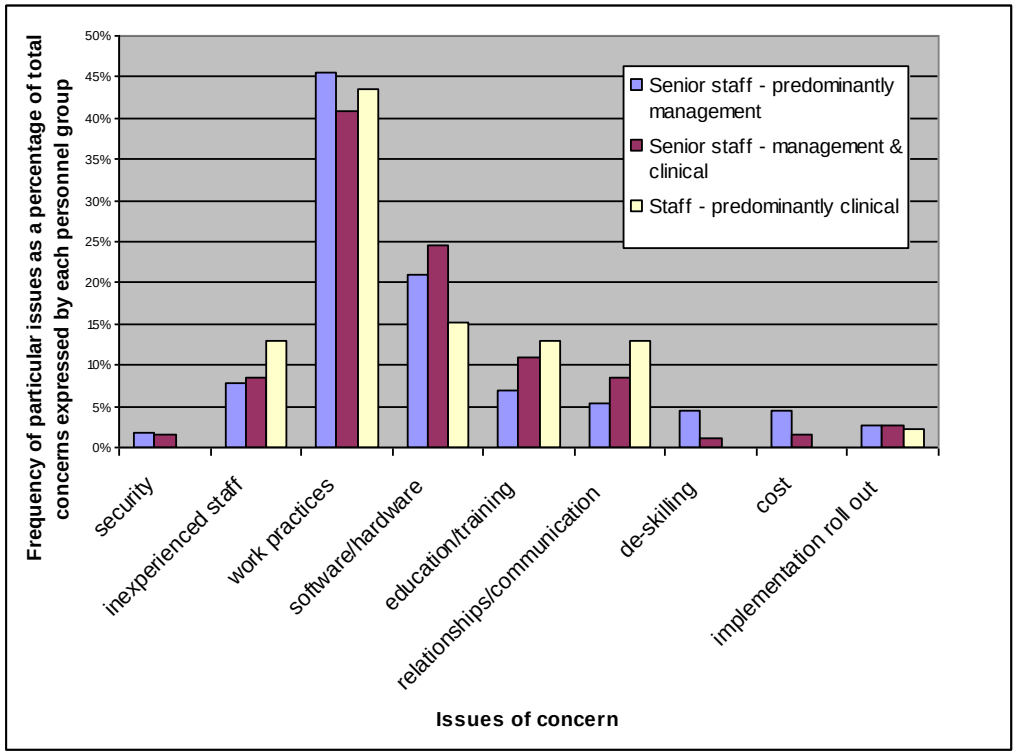
Turnaround time was a significant factor contributing to patients' length of stay in the emergency department. The model accounted for 25.4% of variance (Adj. R^2=0.254)*

Table 3. Results of regression analysis

	B	SE	t	p.
Age	0.003	0.000	6.766	<0.001
Total No. Tests	0.019	0.002	11.874	<0.001
Triage1	-0.422	0.076	-5.551	<0.001
Triage2	0.031	0.034	0.902	0.367
Triage3	0.085	0.025	3.340	0.001
TAT	0.184	0.019	9.764	<0.001
Discharged	-0.419	0.020	-21.359	<0.001
Transferred	-0.020	0.097	-0.201	0.841
Discharge Other	0.256	0.081	3.151	0.002

*Westbrook et al. MIE 2009

What are health professionals concerned about?



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Computerized Provider Order Entry—What are health professionals concerned about? A qualitative study in an Australian hospital

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ABSTRACT

Purpose: To identify the main concerns of a broad range of hospital staff about the implementation of a new Computerized Provider Order Entry (CPOE) system for medication management.
Methods: The study was conducted in a large Australian teaching hospital using semi-

Organisational communications approach to health IT design and evaluation

- Early organisational communication approaches – top down and hierarchical
- Communication is a *constitutive* component of the way an organisation plans and manages its environment
- New health IT can impact on roles, responsibilities, and networks

Georgiou *et al. BMC Medical Informatics and Decision Making* 2012, **12**:68
http://www.biomedcentral.com/1472-6947/12/68

BMC Medical Informatics & Decision Making

RESEARCH ARTICLE **Open Access**

An empirically-derived approach for investigating Health Information Technology: the Elementally Entangled Organisational Communication (EEOC) framework

Andrew Georgiou[1*], Johanna I Westbrook[1] and Jeffrey Braithwaite[2]

Abstract

Background: The purpose of this paper is to illustrate the Elementally Entangled Organisational Communication (EEOC) framework by drawing on a set of three case studies which assessed the impact of new Health Information Technology (HIT) on a pathology service. The EEOC framework was empirically developed as a tool to tackle organisational communication challenges in the implementation and evaluation of health information systems.

Methods: The framework was synthesised from multiple research studies undertaken across a major metropolitan

Organisational disruption – when requests become orders

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When requests become orders—A formative investigation into the impact of a computerized physician order entry system on a pathology laboratory service

Andrew Georgiou[a,*], *Johanna Westbrook*[a], *Jeffrey Braithwaite*[b], *Rick Iedema*[b], *Sangeeta Ray*[a], *Rowena Forsyth*[b], *Anthony Dimos*[c], *Tony Germanos*[c]

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ABSTRACT

Purpose: The purpose of this study was to identify the key implications of the implementation of a computerized physician order entry (CPOE) system on pathology laboratory services

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The frustrated order

Communication disruption – synchronous v asynchronous

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of Pathology & Laboratory Medicine

Safety and Efficiency Considerations for the Introduction of Electronic Ordering in a Blood Bank

Andrew Georgiou, MSc; Tony Greenfield, MHA; Joanne Callen, PhD; Johanna I. Westbrook, PhD

• The introduction of computerized provider order entry (CPOE) systems is associated with major changes in work processes. Implementation strategies need to consider how the technology will affect and be affected by the organization in which it is being installed. The aim of this study was to examine the potential effect of the introduction of a CPOE system on key work processes in a hospital blood bank by using qualitative data from focus groups, interviews, and participant observation and quantitative data of telephone communication. We found that work practices in the blood bank are made up of a mosaic of collaborative processes underpinned by communication channels to facilitate safe and efficient work practices. The introduction of CPOE systems requires consideration of these channels and of the ways that CPOE may disrupt existing communication processes. There needs to be high levels of staff preparedness to minimize patient risk and optimize performance.

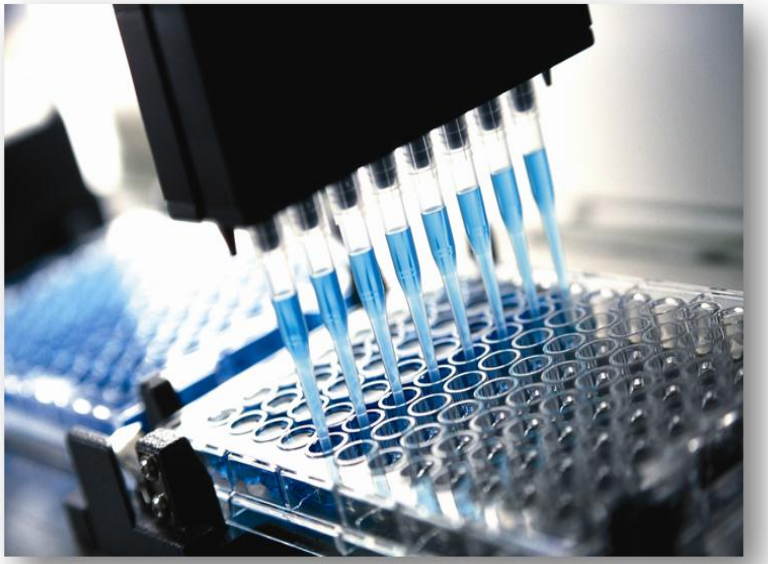
(*Arch Pathol Lab Med.* 2009;133:933–937)

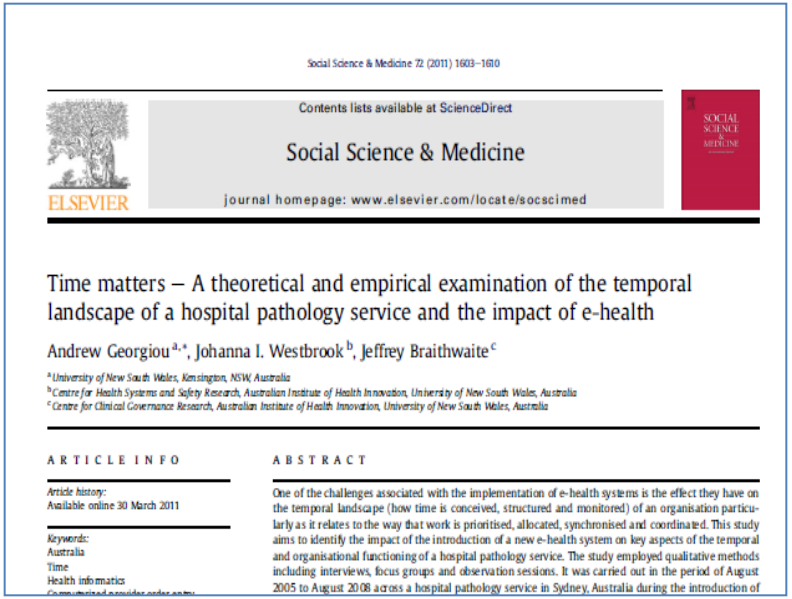
Pathology services have been described as the "hidden science that saves lives."[1] They make an essential con-

The implementation of computerized provider order entry (CPOE) systems provides a possible foundation for enhancing the role of pathology services in the patient care process.[4] These systems enable doctors, and other authorized clinicians to issue orders electronically, leading to efficient order communication and decision support at the point of ordering. However, CPOE introduction can also be associated with important and disruptive changes to laboratory and clinical professionals' work practices and processes.[5] The planning and implementation of these systems requires consideration of how the technology will both affect and be affected by the organization in which it is being installed.[6] This is of particular importance for pathology departments, which consist of a diverse range of services, each with its own unique tasks and requirements.[2]

Pathology services have received limited attention in the research literature on CPOE,[7] with even less consideration of specific pathology departments and their particular organizational and technical features. The blood bank was chosen for study because of the critical role it has in the safety and quality of patient care. Our aim was to describe

Temporal disruption – allocation, duration, sequence and coordination of work





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Time matters – A theoretical and empirical examination of the temporal landscape of a hospital pathology service and the impact of e-health

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ABSTRACT

One of the challenges associated with the implementation of e-health systems is the effect they have on the temporal landscape (how time is conceived, structured and monitored) of an organisation particularly as it relates to the way that work is prioritised, allocated, synchronised and coordinated. This study aims to identify the impact of the introduction of a new e-health system on key aspects of the temporal and organisational functioning of a hospital pathology service. The study employed qualitative methods including interviews, focus groups and observation sessions. It was carried out in the period of August 2005 to August 2008 across a hospital pathology service in Sydney, Australia during the introduction of

Understanding Health IT-innovation

- Health IT contributes to “creative destruction” (Westbrook, 2010)
- Innovation changes the way things work, making it difficult to know what to measure, and how to measure it
- Researchers and evaluators need to look for “the elephant in the living room”? (Denzin, 2011)

Thank you

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