

eHealth for Safety

Global evidence and challenges

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- **External threat: the case of a future great Influenza pandemic**
 - Impact of IT as compared to the great influenza of 1918 (H1N1)
 - Prevention
 - Preparedness
 - Disaster management
 - Planning
 - Tracking
 - Impact of IT for crisis management: transportation, supply chain, education, ...

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- **Internal threat: iatrogenic revisited or the “Medical error” new paradigm**

- **Australia** (1995) ASQHC
 - 18.000 deaths, 50.000 accidents
 - Population : 19 millions inhab.
- **USA** (1999) IOM
 - 44.000 to 98.000 deaths
 - Population : 276 millions inhab.
- **UK** (2001)
 - 40.000 deaths, 280.000 accidents
 - Population : 59 millions inhab.



IOM 1999

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- **Internal threat: iatrogenic revisited or the “Medical error” new paradigm**
 - **Canada**
 - **France (CCACQ DRESS) 2004**

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Needs for change



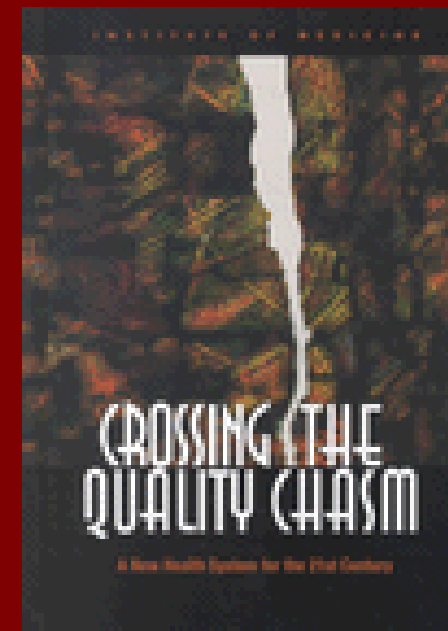
Financial
incentives
Pay for
Performance

Organisation
Prone to
cooperation

Better
communication
Among healthcare
professionals

Patient's
involvement
In the care process

- Healthcare process reengineering
- Management and leadership
- Collaborative built
- Continuum of care
- Quality and Patient Safety Indicators
- Risk Management
- Safety Climate
- Health IT

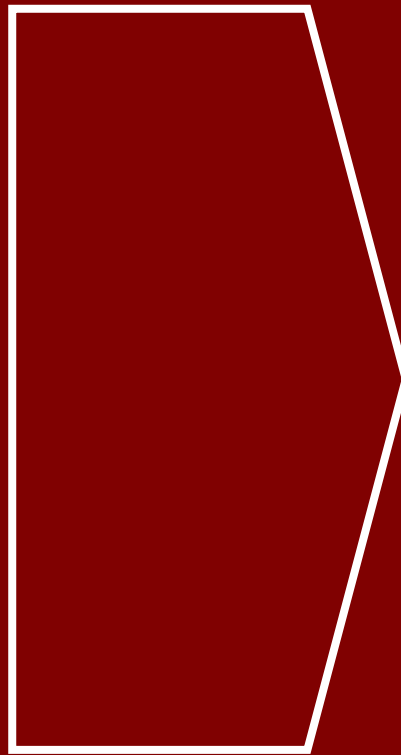


IOM 2001

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Role of ICT

- Information
- Knowledge
- Practice
- Work
- Organization
- Management
- Event reporting
- Epidemiology



- EHR
- PHR
- CPOE
- CDSS
- Mobility
- Simulation
- Education
- Telemedicine
- TeleHealth

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Role of non-ICT measures taken to prevent medical errors

- **Leadership and strategic priorities issues**
- **Safety culture**
- **Teamwork and communication among healthcare professionals**
- **Safety procedures**
- **Medical education**
- **Education and training**

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Priorities of patient care differ between members of the health care team, and verbal communication between team members is inconsistent.

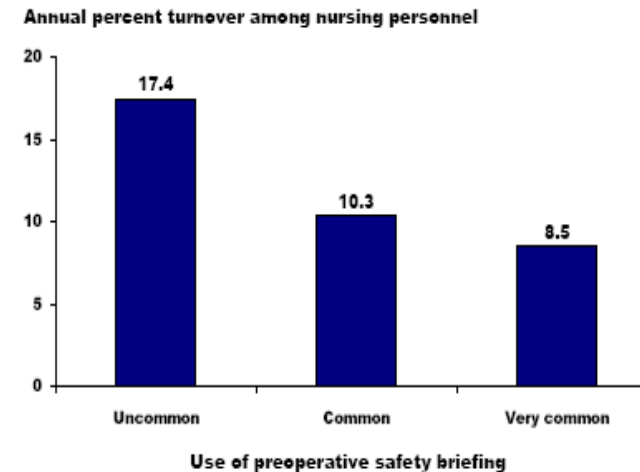
Did we agree?

Agreement on priorities

	<u>Full</u>	<u>Partial</u>	<u>None</u>
RN / MD	13%	57%	30%

Evanoff, 2004

Figure 4. Kaiser Permanente Orange County Service Area: Turnover of Registered Nurses Decreased as Use of Preoperative Safety Briefing Became More Common



Source: Adapted and reprinted from *The Permanente Journal*, vol. 8, no. 2, J. DeFontes and S. Subida. Perioperative Safety Briefing Project, pp. 21–27. Copyright 2004, by permission of the publisher, the Permanente Medical Groups.

Preoperative Safety briefings introduce a Safety Climate and help reduce turnover of Nurses
(Kaiser Permanente, 2004)

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Resistance to change and Challenges

1. The future of Medical Autonomy and the fear of the loss of empowerment and responsibility of professional

- Accountability
- Knowledge
- Turf battle, medical demography
- Cost issues

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	Knowledge ← tasks					
DST/DSS type	EMR/HIS Integrated DSS	Clinical Guidelines	Stand Alone DSS	Score	Calculator	CPOE
Synch to patient encounter (routine)	Yes / No.	Yes / No	No	Yes	Yes	Yes
Users	Physician	Physician	Physician Other profession ? (i.e. Nurse, midwife)	Physician Other profession (i.e. Nurse, midwife)	Physician Other profession (i.e. Nurse, midwife)	Physician Nurse, midwife)

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...“medics” a hitherto unknown type of healthcare professional, would provide the supportive and some of the technical tasks currently performed by doctors. Because a medic-computer symbiosis would usurp all the tasks presently assigned to physicians, doctor would be rendered obsolete... this model is feasible, probable, and a desirable alternative future.

“The Post-Physician Era: Medicine in the twenty-first Century”

Maxmen, New York: John Wiley, 1976. p. 176-218.

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The Internet as a source of lay knowledge and the challenge to expertise:

- Consumerism and issues in access to proven and unproven source of knowledge
- Impact of loss of reimbursement in health consumption

Evolution of the Traditional doctor's patient relationship ?

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2. Centralization and control of information

Bentham's panopticon inspired the design of prisons, hospitals and factories. Medical data centralisation fits in the model.



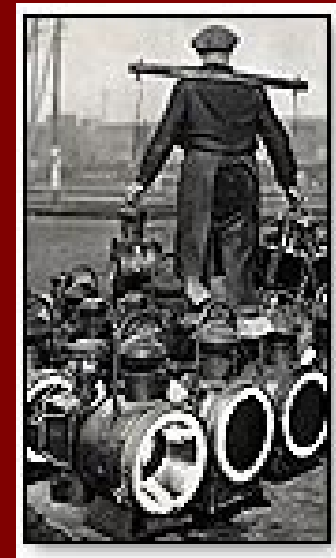
Monitoring of cost and behavior/practice through a centralized collection of data
Justified by a scientific approach (epidemiology, surveillance, penalties,...)

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3. Automation, explicit rationing and accountability

Professional empowerment is based on Knowledge and usually justify accountability at the personal level.

Automation could shift the responsibility from the individual "in charge" to the supervisor of the manager of the system.



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5. Quality and safety of IT : IT can be a risky solution for fighting risk ?

« We waste billions of dollars each year on entirely preventable mistakes »

« In the final analysis, big software failures tend to resemble the worst conceivable airplane crash »

The need for a certification process
For medical software comparable to
Pre-market approval of drugs of medical
Equipments.



*IEEE Spectrum;
Why Software
Fails, September
2005.*

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6. Additional issues to be addressed:

Globalisation and IT: from the local to the global level

- How to avoid an “archipelago economy” based on local innovation versus community healthcare program and public health at a regional or national level (including outpatient services, medical and non medical) ?
- IT and the rest of the world (estimation of IT healthcare market – investment only - : USA 70%, EU 20%, Asia : 15%, rest of the world 5%). Role of IT in the evolution of underdeveloped healthcare systems
- Role of IT in the management of pandemics at a global level (Underdeveloped countries where the outbreak has the greatest chance to erupt, i.e. avian flu and others pandemics)

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Summary

- 1) IT is a key component towards a more safe environment for healthcare (but it's only a component and management and cultural issues deserve the same attention)
- 2) ICT as part of the new paradigm induces a major change in a secular professional culture. Doctors may feel the risk of loss of professional empowerment. This issue should be addressed appropriately and evaluated regularly with appropriate and defined criteria.
- 3) The change will affect the traditional patient-doctor relationship. ICT will foster inter-professional communication and patient's access to medical information.

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- 4) A proper decentralisation/centralisation balance affecting knowledge and data processing should take into account social reactions of the public as well as the professional confidence
- 5) Global distribution of IT advanced solution that will affect Professional and Patient Safety and Quality of Care should be considered at the regional, national and international level
- 6) Medical software should not be a risky solution and development, deployment and follow-up should benefit from a certification/accreditation process.
- 7) Research and Development efforts should contribute to address those issues.

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Thank you for your attention

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