

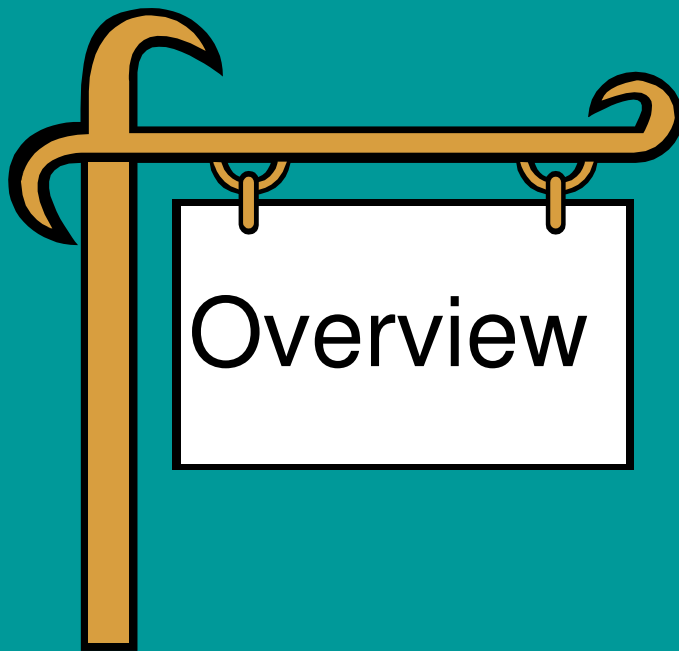


Sharing information – the potential of new technologies

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- **Background**
- Role of ICT
- Delivering the benefits
- Conclusions

evidence-based medicine

efficiency

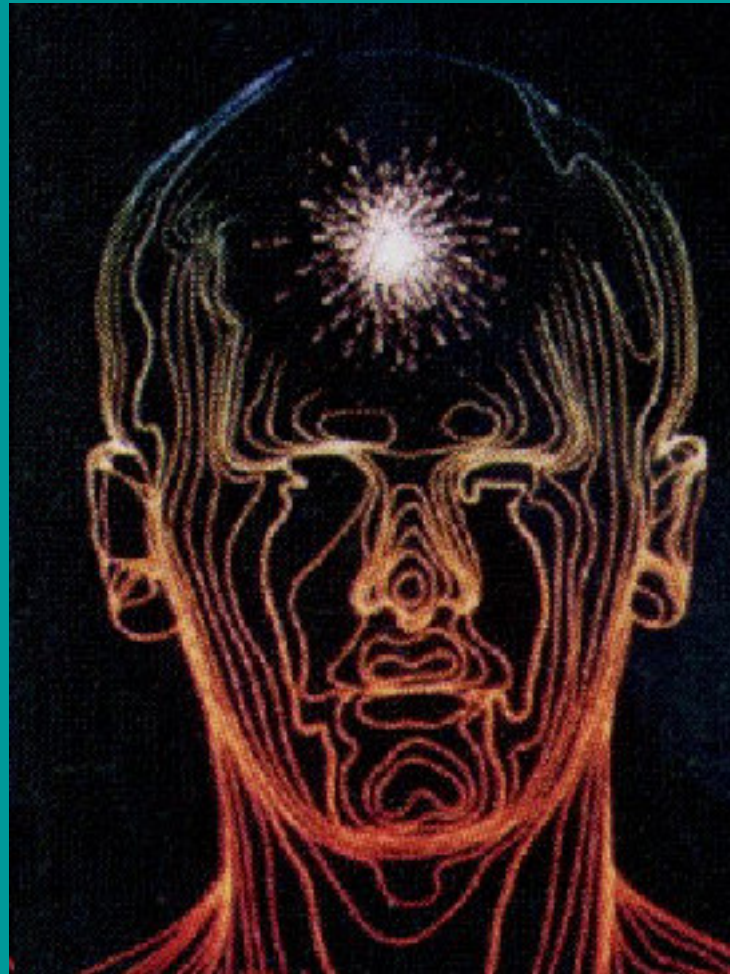
cost containment

demand

teamcare

homecare

patient charter



eHealth

cost effectiveness

shared care

computerisation

clinical audit

genetic medicine

patient empowerment

Inaugural All-Ireland Health Intelligence Conference
7-8 November 2006, Dublin Castle

Information/knowledge explosion



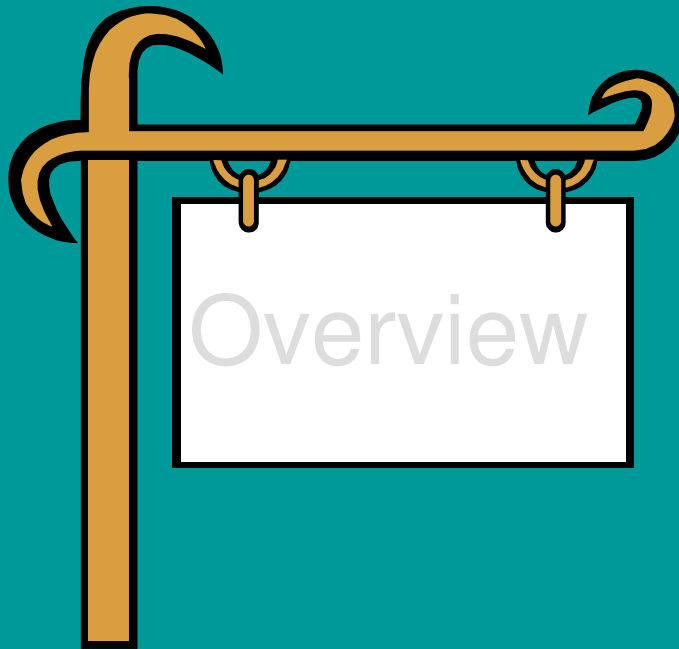
- 24,000 journals
- 10,000 are health related
- “health” returns 2.4 billion hits
- more knowledge created in the past decade than in all of previous human history

From bench to bedside



- *“There are serious ‘voltage drops’ along the transmission line for medical knowledge in the present healthcare system”*

Lawrence Weed



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Report of the Tribunal of Inquiry into the Infection
with HIV and Hepatitis C of Persons with
Haemophilia and Related Matters. *Government
Publications (Ireland) Sept. 2002*

“Medical records should be kept and
maintained in a more satisfactory manner.

During the course of its work the Tribunal
was struck by the unsatisfactory and
incomplete nature of the medical records
which were available in regard to particular
patients.”

An Inquiry into peripartum hysterectomy at
Our Lady of Lourdes Hospital, Drogheda.
Report of Judge Maureen Harding Clark S.C.
January 2006

23.4% of obstetric hysterectomy records (44 cases) for the period 1974-1998 are missing and were intentionally and unlawfully removed from the hospital with the object of protecting those involved in the hysterectomies or of protecting the reputation of the hospital. In 40 of the 44 cases, the birth registers are also missing.

Irish Times 12th May 2004

CORK, IRELAND – The family of a young man who died after vital blood results were missed by doctors because the results had been stuck in his file on a Post-it note....

The court was told the young man should not have died. The test results showed severe hypercalcemia but were stuck on the back of a referral letter. The missing note set off a chain of medical errors.

Require a record which is...



- universally accessible
- communicable
- secure

Electronic records

Record Chooser

Record Structure: AandE Patient ID: Z99444386 OK

Login Information

You are logged in as: dhig Logout

Record Details

Record Structure: AandE
Origin: Dublin
SynExML: Version 2.2

Record Navigator

Record

- [-] Patient
 - [-] Details
 - [-] History
 - [-] Symptoms
 - [-] Vital Signs
 - [-] Physical Examination
 - [-] Systems Review
- [-] Near Site Investigations
 - [-] Urine Dipstick
 - [-] Blood Gas
- [-] CPL Investigations
 - [-] Renal Profile
 - [-] Full Blood Count
 - [-] Glucose Levels
 - [-] Blood Cultures
 - [-] Microscopy
 - [-] MSU (Culture and Sensibility)

Vital Signs

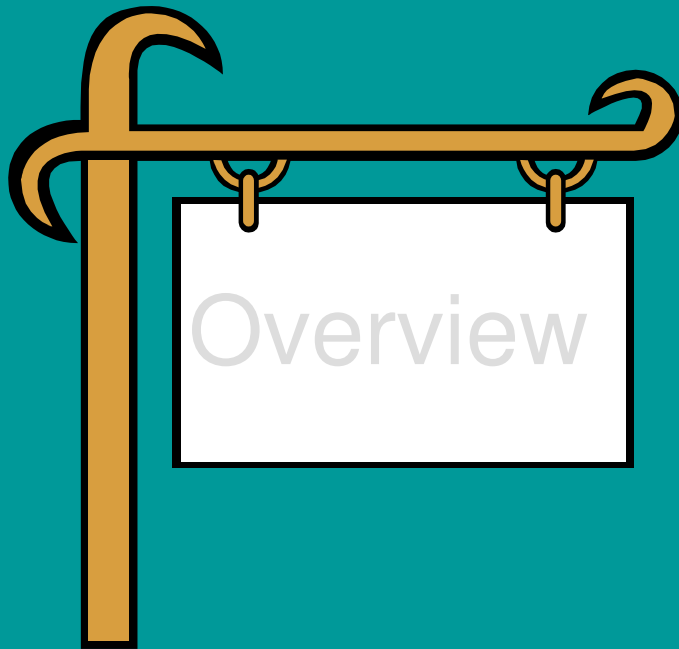
Code	Units	Value	Date Time	Name
bpsys	mm/Hg	110.0	2000-01-02	Systolic Blood Pressure
bpdia	mm/Hg	80.0	2000-01-02	DiaStolic Blood Pressure
pulse	bpm	96.0	2000-01-02	Pulse
temp	C	38.0	2000-01-02	Temperature
pulse	bpm	96.0	2000-01-03	Pulse
bpsys	mm/Hg	110.0	2000-01-03	Systolic Blood Pressure
bpdia	mm/Hg	80.0	2000-01-03	DiaStolic Blood Pressure

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- Available, transferable, shareable
- Support multiple views
- Provide abstraction, reporting
- Support clinical audit
- Enforce standards
- Provide embedded decision support
- Rich source of clinical data for research

Conclusion

- Regardless of whether the medical record is in a paper format or electronic format (or a combination of both) it is essential that there are sound policies in place backed up by appropriate procedures.
- In addition, compliance with policies is a matter that requires positive management engagement supported by whatever technology is appropriate.



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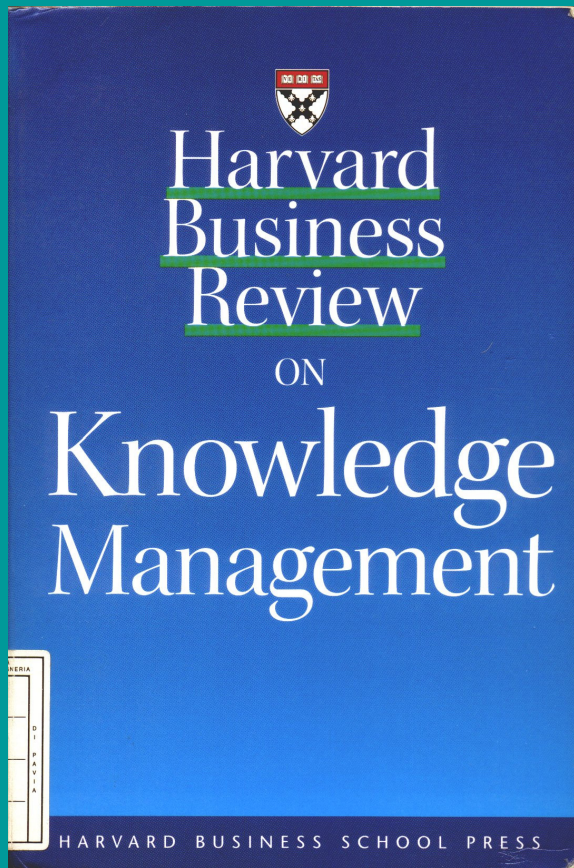
Information at the point of care



“Expecting your doctor to know everything without accessing information is like expecting your travel agents to keep airline and train timetables in his or her head”

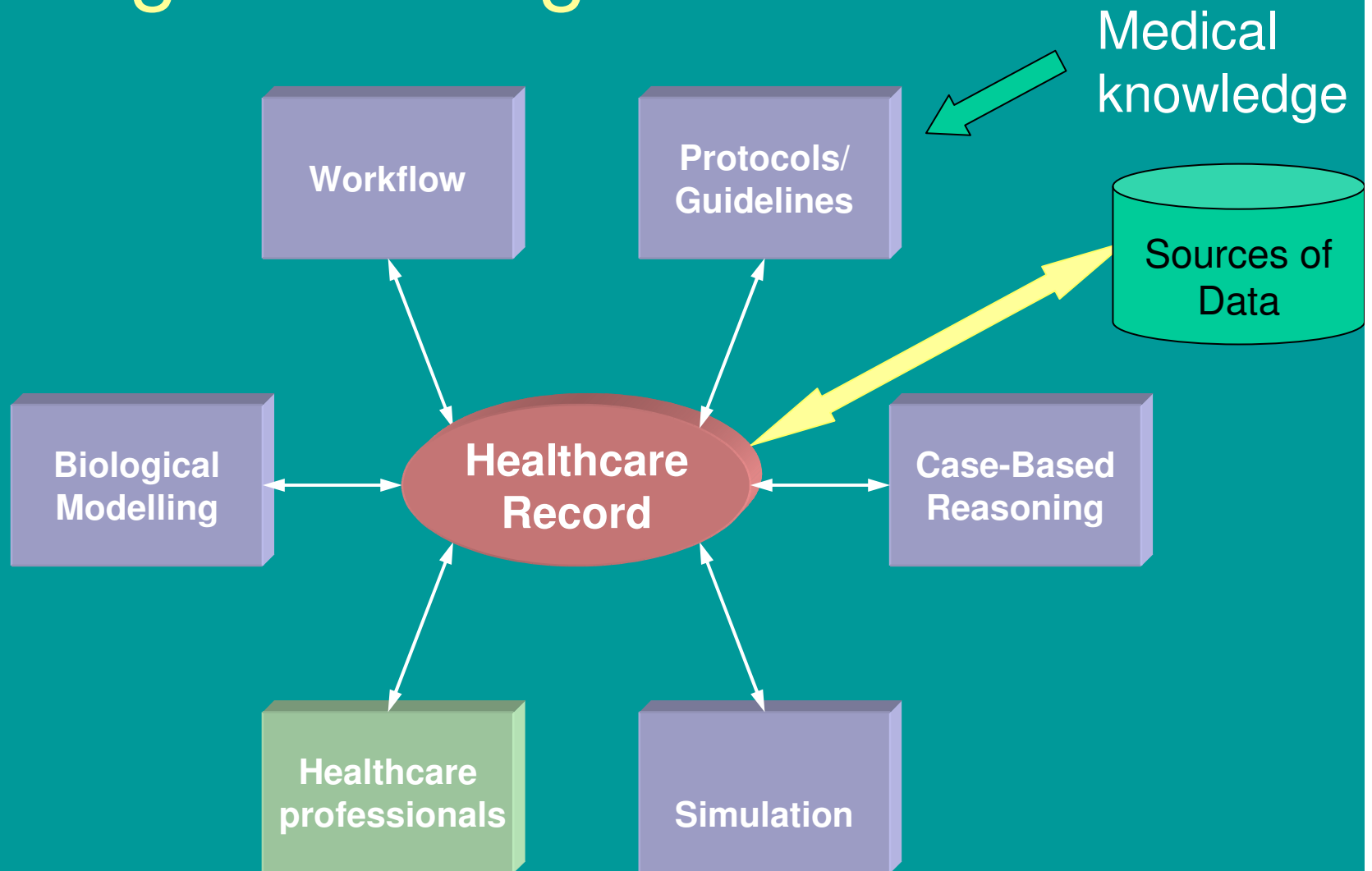
Lawrence Weed

Knowledge Management

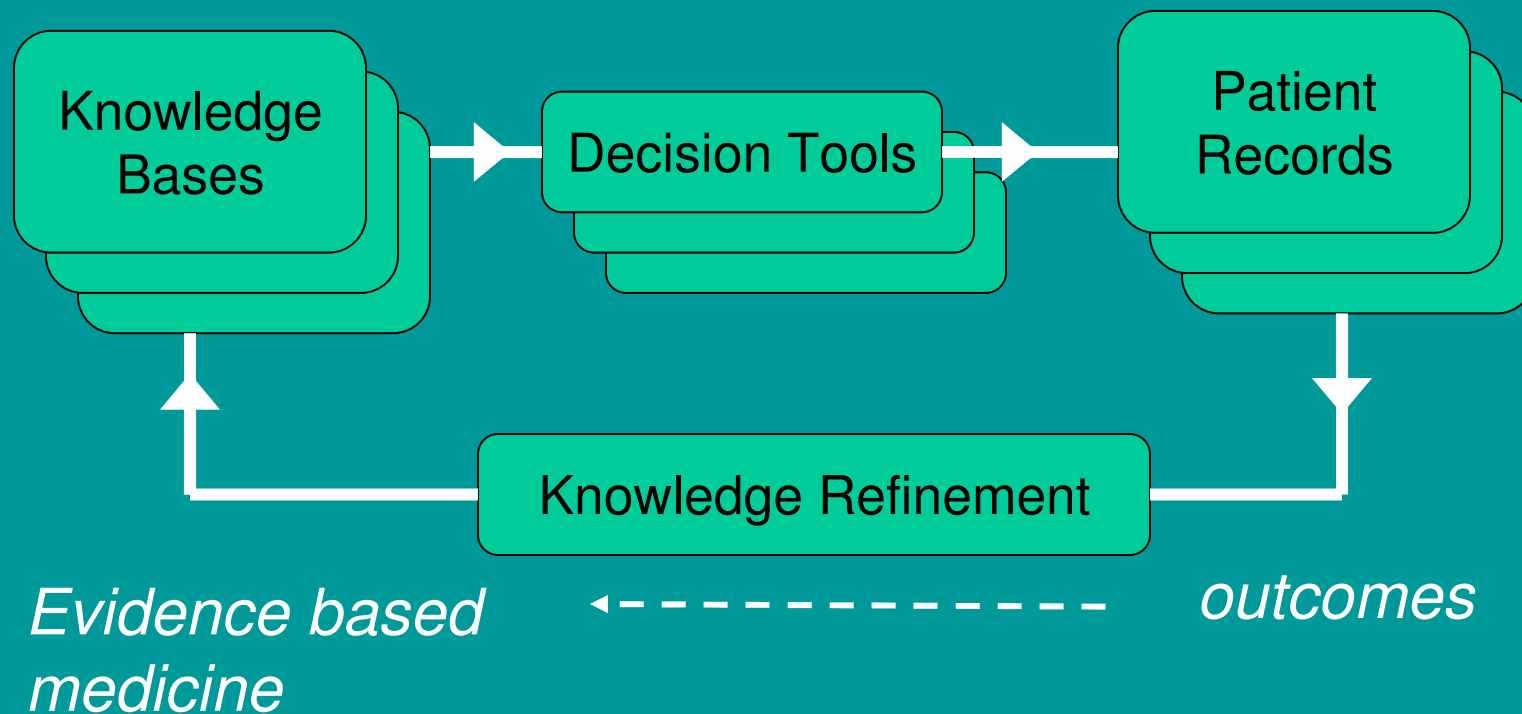


- The goal of KM is to improve organizational performance by enabling individuals to capture, share, and apply their collective knowledge to make optimal decisions ... in real time;
- i.e. to take actions that will affect the outcomes

Linking Knowledge to Records



Knowledge refinement



Guideline knowledge

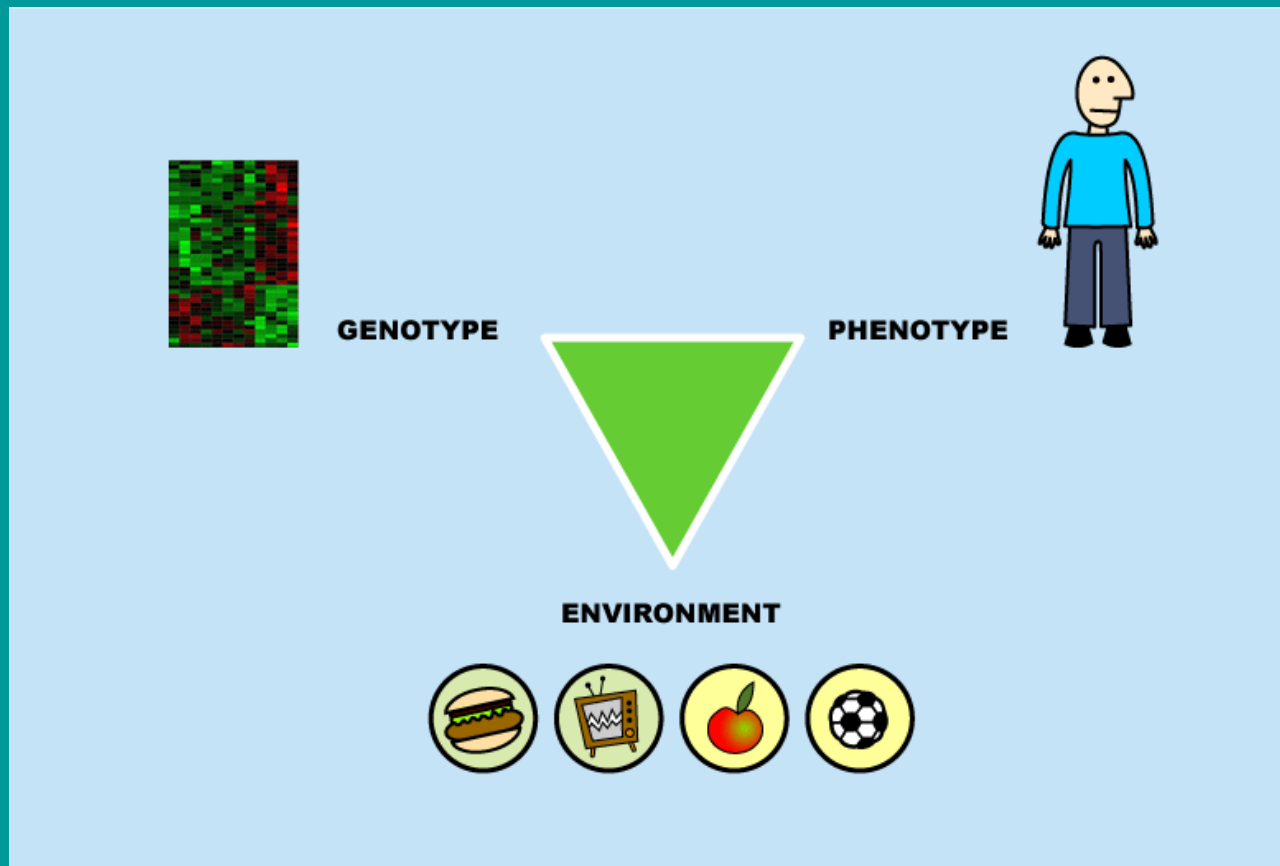


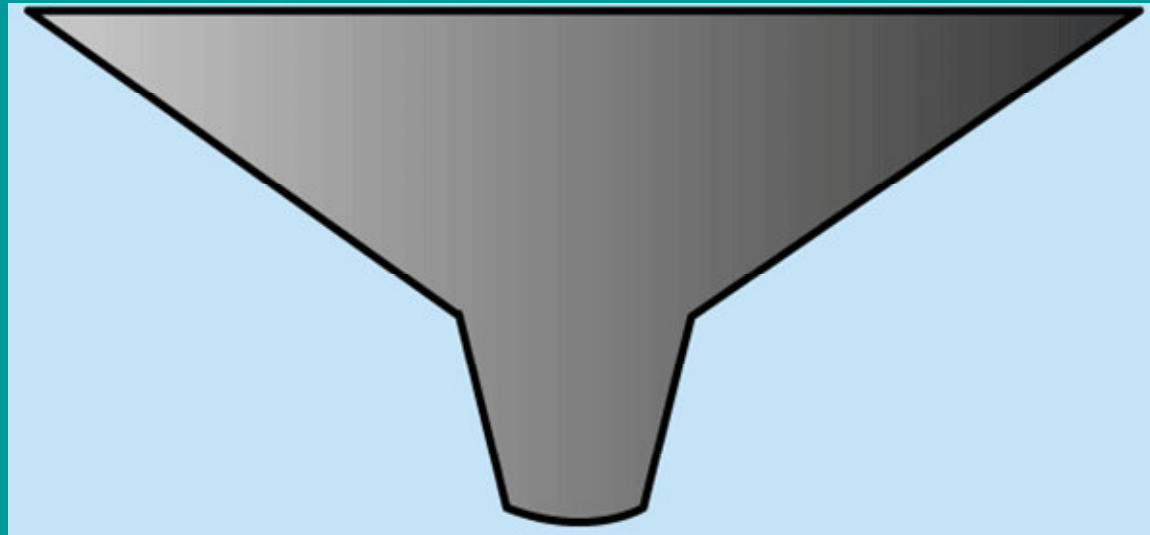
- Clinical guidelines are
 - Recommended practices for managing healthcare in specific clinical circumstances.
 - Evidence-based best practice
- Range from procedural/algorithmic guidelines to declarative ones.

Getting guidelines used

- Guideline-based decision-support needs to be
 - available at the point of care
 - integrated with useful clinical and administrative applications
 - patient records, test ordering, report generation, appointment scheduling
- It should be difficult to work outside of the guideline-based systems.

Supporting research

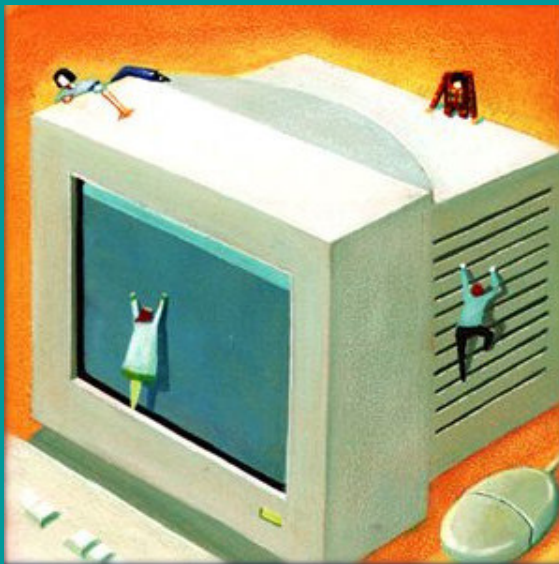




Automatic generation of population-based health records

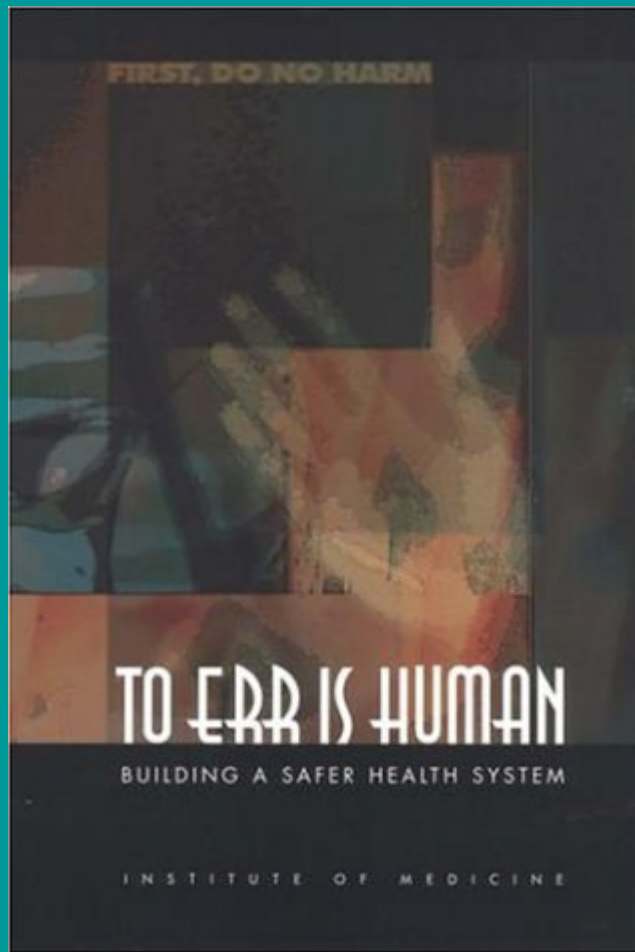
- Protocols encode rules for extraction and conversion
- Workflow engine manages the process

Challenges



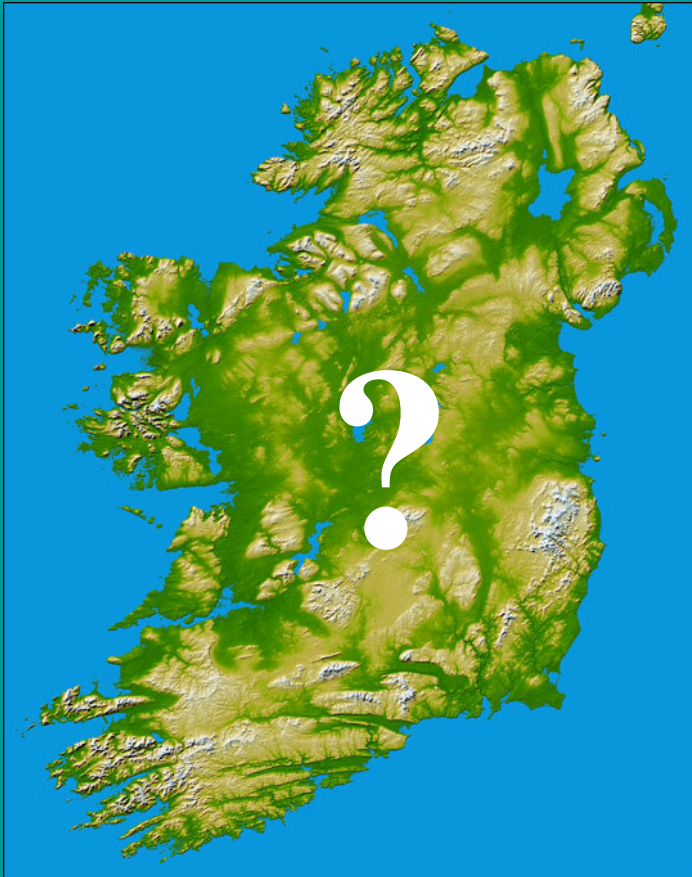
- Technical (some)
- Political
- Organisational
- Cultural

Patient safety



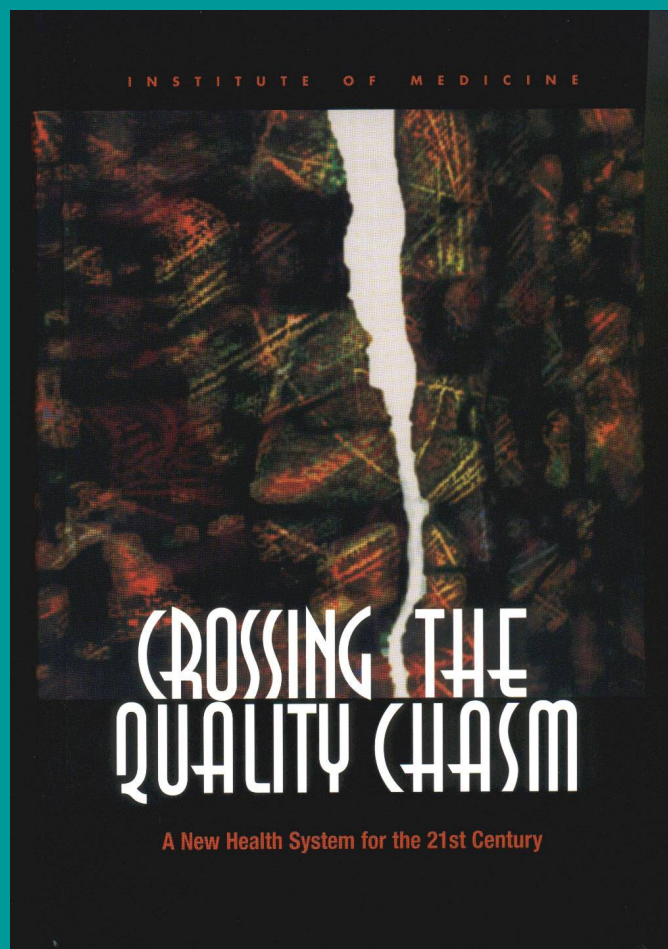
- 98k deaths p.a. in US
- 18k deaths p.a. in Australia
- 10% hospitals admissions associated with adverse events

Ireland



- No data
- *Pro rata* 1200-4000 deaths p.a.
- *cf* 396 road deaths in 2005

The 21st-Century Health Care Systems



- Goals: safety, effectiveness, patient-centeredness, timeliness, efficiency, quality and equity.
- Three guiding strategies: patient-centered, knowledge-based, and careflow-based systems.
- Quality as a system feature.

Luxembourg declaration

Patient safety – Making it happen



- *Health sector at high risk from adverse events*
- *Health lags behind in introduction of systematic safety processes*
- *Almost half of preventable errors are medication related*

E-Prescribing



- 50% of errors preventable
- 50% of preventable errors are drug-related
- 50% of drug-related errors can be eliminated by use of ePrescribing
- Mobile technology
- RFID
- Cost-effective

Conclusions

ICT can

- ensure that health professionals have access to the appropriate information and knowledge at the point-of-care
- ensure quality, increase efficiency, and improve patient safety
- deliver cost-effective solutions

But....

- Standards are critical
- Certification of ICT systems essential
- Users must be fully involved at every stage