Health informatics technology uptake in Australian metropolitan general practice: where were we in 2005?

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Background

- In 1995, an informatician working with one of the largest HMOs in the USA stated that introducing health care information technology was a **“more complex task than putting a man on the moon”.**
- He was reflecting on the difficulties encountered incorporating the technological advances that had occurred in the previous decades within the health care sector.
- Factors retarding the anticipated uptake have included technology immaturity, health administrator focus on financial systems, application **"unfriendliness"** and physician resistance.

Background(2)

- Many patient care technological information systems have been developed since 1995 but with varied uptake.
- These include electronic patient record, patient information systems, physician order entry, decision-support technique and electronic medication ordering.
- A recent development integrates an electronic medical record with patient information systems using a shared-record model.

Background(3)

- In 2005 we conducted a community-based prospective quota allocated trial in patients with rheumatoid arthritis, comparing an electronic personal health file carried on a USB chip and two paper-based personal health files.

- This was a bottom-up approach to facilitate information exchange among health-care providers and encourage patient-consumer participation in the delivery of this health care.
- Outcomes included uptake of rheumatoid arthritis guidelines, **patient and health providers perceptions of patient-held paper and electronic personal health files.**

Background(4)

- Prior to the first patient visit there was limited information regarding the degree of computerisation of general practitioners who agreed to take part in the trial.
- Patients could only receive the electronic portable health file if their general practitioner was able and willing to use it.
- Therefore one of the objectives of this trial was **to determine the uptake of electronic health informatics technologies in Australian metropolitan general practice.**

Methods

- Sydney Metropolitan general practitioners (GPs) were asked to participate in a trial evaluating two newly developed paper and electronic patient-held portable-health files.
- **At trial onset, GPs completed a questionnaire on the electronic health informatics technologies they used for patient-care.**

Results (1) Type of record

- The trial recruited Its duration was 3-6 months. **76 patients, 62 GPs and 4 specialists.**

- Of the 62 GPs that participated **51 (82%) returned the questionnaire.**

- We found that **35% did of general practitioners relied on paper-technology only**, **49% used a combination** of electronic and paper records and **16%** used only electronic records.
- Almost all computers were windows-based PCs.

Results (2) Internet use

- Of the 33 GPs with computers, 82% had internet access and 65% used web-based search tools for decision support, primarily the **Google** search engine.
- A minority of GPs knew of and used NSW Health CIAP (Clinical Information Access Program).
- Other clinical decision support tools used were Medicare Plus Health Information, National Prescribing Service, PubMed, Medical Director and up-to-date.

Result(3)-Medical software

- **Medical Director** was the most common medical software application (82%).
- 64% of these GPs used Medical Director 100% of the time, 21% more than 50% and the remainder use it less than 50%.
- Medical Director was used for prescription-writing by all GPs (only for prescription-writing by 11% of GPs), for generating referrals in 77%, for pathology results in 81%, for using MIMs by 78%, as an immunization facility by 63% and for **medical-record keeping in 51%.**

Result(3)-Medical software (cont)

- All liked MD because it was convenient, 76% liked its security, 64% found it user-friendly, 60% liked the rapid access to information and 56% liked the reminders.
- Other features receiving favorable comment were the patient care plans and patient information/education printouts.
- 72% did not like the MD pop-ups, **48% perceived that MD reduced patient-clinician interaction, 40% felt that it interrupted workflow** and 36% reported that it was difficult to get to needed information quickly.

Discussion 1

- In late 2005 more than half of general practitioners working in metropolitan Sydney used some form of health information technology for the delivery of health care. It is possible that in 2008 this proportion has increased.
- It is not surprising that where technology provides functionality that speeds the doctors' workflow, such as rapid generation of prescriptions and referrals, the adoption rate can be quite high.
- Other facilities that require a routine checklist-like format such as recalls, reminders, immunizations were appreciated and had good uptake.

Discussion 2

- Very few GPs indicated that keyboard data-entry was a barrier, yet only just over half implemented Medical Director, the market leader medical software program at least in this area, for routine medical-record keeping.
- It is interesting to note that the majority of GPs use a combination of paper and electronic modalities in their practice, and that at one-third relied on paper alone. Reasons for this may include application ‘unfriendliness’ for the medical history process.

Discussion 3

- Some of the electronic barriers, such as pop-ups are easily solved by their removal.
- Others, such as interrupted workflow and difficulty getting information quickly may require further re-engineering.
- One early example of reengineering is replacing the Problem Oriented Medical Record (POMR) and the SOAP (Subjective, Objective, Assessment and Plan) note with the Problem Focused Medical Record and the OHEAP **(Orientation, History, Exam, Assessment and Plan)**
- OHEAP starts with an orientation structure that brings forward the timeline, last Assessment and Plan, and Plan Results for each problem along with the patient's historical tables as the starting point of every follow up visit.

Discussion 4

- That **Google was the most common search engine was surprising and disconcerting given our current standard of evidence-based medicine**.
- Although GoogleScholar has access to many new, online journals that are not yet cited in Medline/PubMed, the quality of these sources of information require further evaluation.
- However, Google is a useful adjunct to a search strategy, particular for organizational reports that lie outside the peer-reviewed medical journal system.
- Reasons for use of Google/Google Scholar over Cochrane, Medline/PubMed, Up-to-Date need to be explored.

Conclusion

- Factors that are responsible for retarding the anticipated uptake of health informatics technologies have included technology immaturity, health administrator focus on financial systems, application "unfriendliness," and physician resistance.
- Our findings suggest that **where technology provides functionality that speeds the doctors' workflow the adoption rate can be quite high**.
- However, re-thinking of certain aspects of clinical design work to empower doctors during their interactions with patients is needed.
- **This survey applies to GP practice**

Conclusions

- Where technology provides functionality that speeds the doctors' workflow, e.g. rapid generation of prescriptions, the adoption rate is high. Otherwise, clinical re-engineering needed

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