Information Technology for Clinical Decision Support in Primary Health Care Practices

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Abstract

- This study of New Zealand General Practitioner (GP) practices demonstrates that those surveyed are generally well equipped with information technology (IT), suggesting there is the potential for them to be able to utilize levels of clinical decision support (CDS) similar to each other. However,
- three commonly available technologies used by 80% or more of practices were all found to be used by fewer practices for CDS. This suggests that
- barriers other than the availability of technologies are important inhibitors to the utilization of IT for CDS.

Introduction

- International and Australasian health care organizations are seeking to improve the use of computerised clinical decision support (CDS) in health care[1;2;3].
- New Zealand's primary health care sector is now structured around not-for-profit Primary Health Organisations (PHOs)[4].
- Knowledge of IT infrastructure and its usage by PHO practices would enable their management organisations to formulate appropriate strategies to encourage better use of technologies, and the decision support capabilities they provide.
- This presentation gives preliminary results regarding the IT supporting patient care in primary care GP practices.

Study area

- Where?
  - Medium sized New Zealand Primary Health Organisations (PHOs)
    - PHO Management Services Organisations
    - Contributing General Practitioner practices
- Who?
  - PHO Management Services Organisation
    - Staff
    - Contract holders
  - Contributing General Practitioner practice
    - Doctors
    - Practice nurses
    - Practice administrators
- What?
  - What information technologies (IT) are available in the organisations
  - How the organisations use IT in the support of clinical decision making

Methodology

- A multiple case study of medium sized PHOs was undertaken, consisting of
  - a pilot case study, and
  - two other case study organisations.
- Triangulation[5] was achieved by
  - the use of face-to-face interviews,
  - a postal questionnaire survey of GP practices and
  - the collection of documentation at each case study organisation.

Results 1: Practice use of technologies

Technology	% Practices using technology
Practice Management Systems (PMS)	100
Fax. Machine	100
Printer	100
PCs	100
Healthlink[1] connection	100
Word processing software	100
The Internet/external websites or databases	90
Internal messaging system	90
Spreadsheet	90
Extranet application (e.g. ACC logging)	80
e-mail	80

[1] Secure network for health sector electronic messaging

The table shown here shows the most popular technologies identified as used in the support of patient care by the responding practices.

Results 2: Individual PHO GP practice use of technologies supporting patient care

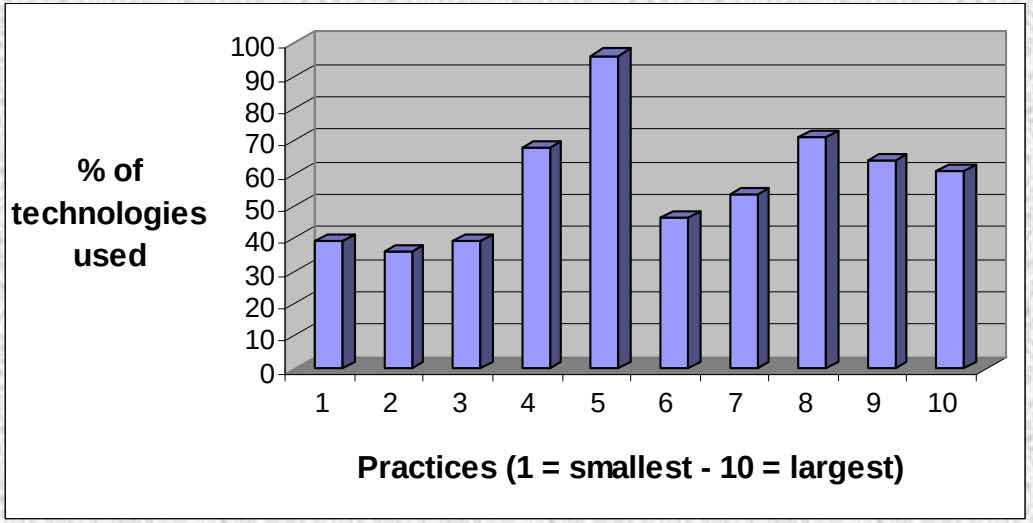

Figure 1, above, illustrates that

- individual practices used between 35.7% and 96.4% of the technologies identified as being present in similar practices belonging to their PHO, and
- all but the three smallest practices used more than 40% of the technologies, but otherwise there appeared to be little evidence that increasing practice size corresponded to increased technology infrastructure.

Results 3: Practice use of three technologies

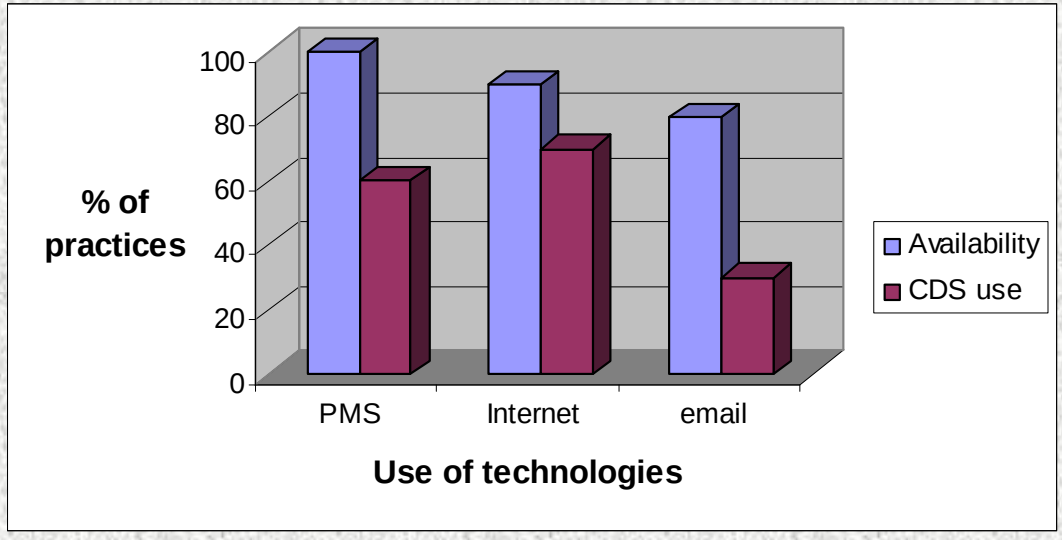

Figure 2, above, illustrates that

- practice management systems (PMSs), the Internet/external websites or databases, and e-mail were used by 100%, 90% and 80% of practices respectively. However,
- when asked about their use of the same systems in the support of clinical decision making when caring for their patients, the percentage of practices found to use the systems in that way was smaller.

Discussion

- This study shows that the respondent practices are using a wide range of available IT technologies. However,
- three of these technologies (the PMS, the Internet and e-mail) which were used by a high proportion of practices were found to be utilised by fewer practices for CDS. This suggests that
- beyond a certain point IT infrastructure ceases to have as much influence on systems use than other factors, i.e. once technology saturation is reached, other factors become responsible as barriers to adopting the technology for CDS.
- Such additional barriers may include resource and clinical issues such as time, cost, training, credibility, and skills in using CDS programmes, and less importantly, technical and systems considerations[6;7;8].
- These findings are re-enforced by this study which also illustrates that
- actually having access to popular technologies within an organisation or even within one practice does not necessarily guarantee either their general use, or use for CDS.

Conclusions

- The results demonstrate that within one organisation, GP practices can have similarly high levels of IT in some areas which should enable them to achieve similar levels of CDS to each other, by utilising available technologies. However, there is evidence to the contrary.
- In order for primary health care managers and practices to improve CDS a detailed knowledge of practice IT infrastructure and how it is used, together with a clarification of barriers to the use of available technologies for CDS, would be beneficial.

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