

The Use of IS for Clinical Decision Support by Primary Health Care Practices in a Medium Sized PHO

Results from a Pilot Case Study

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- Overview:
 - Introduction to the study
 - Previous work
 - Current research
 - Research methodology
 - Development of the survey tool
 - Survey and results
 - Discussion
 - Conclusions
 - Acknowledgements
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Introduction

□ Study area:

- IS support for clinical decision-making in primary health care
- Health professionals, in particular General Practitioners (GPs), working in New Zealand Primary Health Organisations (PHOs)

□ Aim:

- To explore how IS support access to information needed for clinical decision making by health professionals working in the PHO environment
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Previous work

A previous case study of 6 GPs in 2 practices found that:

- GP's have a number of unmet information needs during consultations *
 - IS support for clinical decision-making during consultations could be improved by:
 - better use of existing systems, and
 - increasing IS support at the MIS, DSS, and AI/ES levels
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Current research

- Case study research of three medium sized PHOs
 - Study areas:
 - Level of Information Technology / Systems (IT/S) sophistication
 - Use of Information Systems (IS) in the support of clinical decision making (CDM)
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Research methodology

- Literature review
 - Case studies of 3 PHOs (including 1 pilot study)
 - Face-to-face semi-structured interviews
 - with 5-8 PHO management service staff
 - in 3 GP member practices (GP, practice nurse and administrator where possible)
 - A postal questionnaire survey of all remaining GP practices within each PHO
 - Examination of documents collected at the case study locations
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Development of the survey tool

- Literature contributed to a draft questionnaire^{1,2,3,4,5,6}
 - Ethics committee approval
 - Massey University Human Ethics Committee, and the
 - Central Regional Health and Disability Ethics Committee
 - Draft questionnaire
 - Development
 - Pre-testing
 - Further Ethics Committee approval
 - Questionnaire sent to GP practices in the pilot PHO
 - Iterative further development
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Pilot study questionnaire responses

- 43.5% response rate (10 respondents)
 - 60% completed by clinicians; 40% by practice administrators.
 - Practice staff numbers: 3 - 21
 - GP full time equivalents: 1 - 5
 - All practices used computer systems (from two brands of Practice Management Systems)
 - 80% used the most predominant system found in New Zealand GP practices
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Questions reported on in this presentation

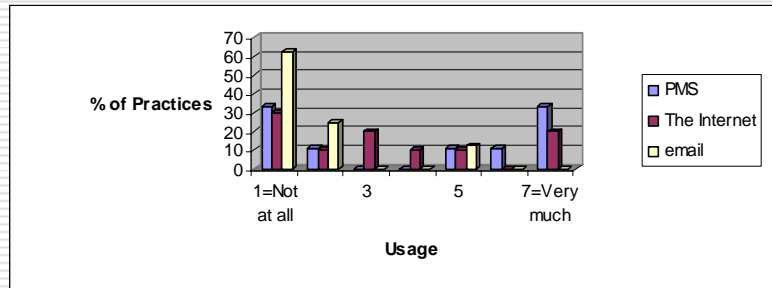
Questions relate to the use of IS in the support of CDM:

- Question 1: How much do practices use their PMS, the Internet, and email in the support of CDM?
 - Question 2: How much are existing software tools are used by practices to support CDM?
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Questions reported on in this presentation cont.

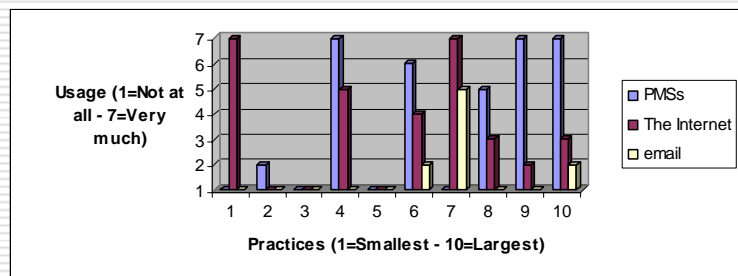
- Question 3: To what extent do practices feel their computer systems provide specific types of support for CDM?
 - Question 4: What/how important are the perceived barriers to the improved use of computer systems for the support of CDM by GP practices
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Question 1 results



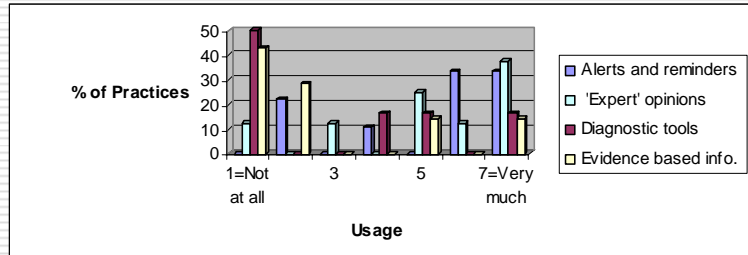
Percentage of Practices Using Popular IS for Clinical Decision Support

Question 1 results cont.



Usage of Popular IS for Clinical Decision Support by Practices

Question 2 results



Percentage of Practices Using Clinical Decision Support Tools

Question 3 results

Clinical decision support features	% Practices Rating 'Not at all' (1)	% Practices Rating Low (2,3)	% Practices Rating Moderate (4,5)	% Practices Rating High (6,7)
Identify patients lost to follow up or overdue for recommended interventions	0	22.2	55.6	22.2
Combine knowledge with patient information to help in keeping abreast of the patients health status	0	50.0	12.5	37.5
Provide knowledge relevant to the particular clinical situation	0	50.0	25.0	25.0
Provide decision support automatically as part of the workflow*	14.3	42.9	28.6	14.3
Alert one to contraindications or potential problems by checking planned actions against patient information and generally accepted clinical knowledge	0	62.5	25.0	12.5
Bring information to the point of clinical decision making*	12.5	50.0	12.5	25.0
Provide actionable recommendations*	12.5	50.0	25.0	12.5

The Extent Respondents Consider their Practice IS Provide Clinical Decision Support Features

Question 4 results

Perceived Barrier	% Practices Rating 'Not at all' (1)	% Practices Rating Low (2,3)	% Practices Rating Moderate (4,5)	% Practices Rating High (6,7)
Time	11.1	0	33.3	55.6
Cost	11.1	0	55.6	33.3
Training	22.2	0	44.4	33.3
Credibility	12.5	12.5	25	50
Skills in using clinical decision support programmes	12.5	12.5	37.5	37.5
Knowledge of appropriate systems/tools	11.1	33.3	22.2	33.3
Security	22.2	22.2	44.4	11.1
Privacy	33.3	11.1	33.3	22.2
Flexibility/ease of adjustment	33.3	11.1	33.3	22.2
On-going system support	44.4	0	22.2	33.3
Software	44.4	0	44.4	11.1
Hardware	22.2	33.3	33.3	11.1
Content (type, level of detail)	33.3	22.2	33.3	11.1
Functionality	44.4	11.1	33.3	11.1
System speed	33.3	33.3	22.2	11.1
Format (appearance)	55.6	22.2	11.1	11.1

Perceived Barriers to Practices Improving their Use of IS to Support CDM

Discussion

- Use of PMS, the Internet and email, for CDS:
 - Wide differences in their use
 - Non-users might benefit from incorporating some additional use of these technologies into their routines.
- Use of clinical decision support tools:
 - Some practices find certain tools useful, while other practices may not be using them
 - The potential exists for increased utilisation of available systems to encourage the use of these tools.

Discussion cont.

- Provision of specific decision support features by practice systems:
 - varied in the opinion of the respondents, but
 - it is possible that some systems are not being utilised fully.
 - Barriers to increased use of IS for CDS:
 - Resource and clinical issues such as 'Time', 'Cost', 'Training', 'Credibility', and 'Skills in using CDS programmes' are considered to be moderate /important barriers, each with more than 75% of respondents
 - Technical and systems considerations appear to be secondary barriers
 - These results highlight areas upon which management service organisations could focus attention.
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Conclusions

- There are wide differences in the use of existing technologies for the support of CDM by the practices studied
 - A proportion of practices could benefit from incorporating some additional use of broadly based IS and CDS tools into their routines.
 - Some practice systems may not be utilised fully and could already have the potential to provide more CDS features if set up differently or extended.
 - Three of the most important features indicating of the ability of CDS systems to improve clinical practice² are not provided at all in some practices and are generally low ranked in the study.
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Conclusions cont.

- Practices face a number of barriers to the improved use of their systems in the support of CDM with the most highly rated barriers being non-technical in nature.
 - The variation in practice responses may indicate that a 'one size fits all' policy in support or barrier removal might not be appropriate
 - These findings could be of use to PHO management service organisations in the planning of future CDS initiatives.
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THE END

GPs unmet information needs: Expressed at both study locations

□ Patient information:

- Fast access to genealogical information during the consultation

□ General / administrative information:

- Fast on-line access to general/administrative information



GPs unmet information needs: Expressed at either one or other study location

- A way to track laboratory reports
- Previous hospital notes with Read codes, in electronic form
- Ready access to ACC numbers
- Ready access community card status
- Ready access administrative information
- Other professionals' records (old) – electronic
- Integration with hospitals - to stop duplication of tests and have accurate information on patients without being reliant on paper or the patient's memory.
- On-line information – to follow patient progress while in hospital.
- Electronic discharge summaries.
- Electronic emergency department summaries.

□ Clinical information:

- Internet resources available quickly during consultation
- Internet resources researched by third party – summarised results presented
- Would like to know where to go for clinical information on the internet
- Anatomical line drawings available quickly during consultation – electronic
- Improved medication database (e.g. won't do some generics).
- Would like patient information pamphlets to download. (Without Jetstream it takes too long to do it during the consultation).

□ General / administrative information:

- IPA website
- Electronic forms for: Community services, diabetic clinic, sleep disorder clinic, etc.
- Fast access to community services card numbers
- Improved electronic addresses / telephone book
- Better access controls

