

Knowledge Linked into Clinical Software (KLICS): a pilot evaluation of a GP decision support tool

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'Knowledge Linked into Clinical Software (KLICS)' is a prototype decision support tool for general practitioners (GPs) developed by NPS to provide clinical information resources linked to electronic prescribing software (ePS) programs: Medical Director 2 & 3, Best Practice and MedTech32. The KLICS window appears beside ePS (see Figure 1). When values entered into selected ePS fields are changed, searches of clinical information are automatically triggered. Fields include:

Medical Director™ 2:

- Reason for prescription
- New history item
- Reason for contact

Medical Director™ 3:

- Reason for medication
- Reason for prescription
- New history item
- Reason for contact

Best Practice™

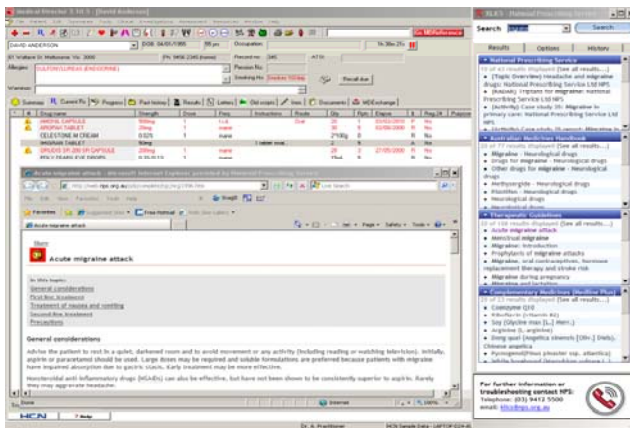
- Past medical history
- Medication review
- New prescription

MedTech™ 32

- New patient classification—once a classification is selected

Clinical information resources available through KLICS include NPS resources, Australian Medicines Handbook (AMH), Therapeutic Guidelines (TG) and complementary medicines information from Medline Plus. Manual searches can also be conducted.

Figure 1. KLICS as it appears on-screen



Aim

To evaluate KLICS' usability and acceptability in the general practice setting

Method

- Pilot conducted November 2009 - May 2010 with 40 GPs**
- A multi-method design includes: **electronic logs** provide objective data to measure the extent of use; **pre- and post-surveys** indicate change in the use of information and KLICS' usability; and **qualitative interviews** examine how KLICS fit with GPs' consultation workflow and to explore reasons for non-use.
- 40 GPs completed the pre-survey. The post-survey is currently in the field.
- 6 GPs who had **used KLICS** were interviewed face-to-face in their rooms
- 4 GPs who had **not used KLICS** were interviewed by telephone.

Selected results of log-data analysis

Table 1. Top 10 'trigger' terms, 16/10/09-6/05/10

Search page	Page views		Unique page views	
	N	%	N	%
Prescription	192	19.47	162	18.26
Depression	132	13.39	132	14.88
Results given	131	13.29	107	12.06
Hypertension	112	11.36	104	11.72
Immunisation	92	9.33	68	7.67
Asthma	89	9.03	84	9.47
Referral	83	8.42	83	9.36
Pap smear	56	5.68	55	6.20
Hypercholesterolaemia	51	5.17	50	5.64
Notes review	48	4.87	42	4.74
TOTAL	986	100.00	887	100.00

Table 1 shows the 10 'trigger' terms that returned the most page views. 'Search page' represents the terms GPs entered into ePS fields that triggered the KLICS search. 'Page views' is the number of times it was viewed; 'Unique page views' is the number of GPs who viewed it. One limitation identified is ePS fields such as *reason for contact* currently trigger searches on non-clinical terms (eg 'results given [to patient]'), providing little information that was useful.

Next steps:

- Post-survey results will provide further information on the use of KLICS, how it was used and problems experienced by a wider range of GPs
- Findings will inform the development of KLICS for further testing and identify its potential for broader distribution.

Interview results

KLICS: automated versus manual searches

- Of the 6 GPs who used KLICS, 2 trialled both search functions; one was shown how to use it at interview and trialled it the following week. Three GPs trialled manual searches only, as a technical fault prevented automated searches.
- The 3 GPs who trialled both manual and automated search functions preferred manual searches, as they **could search on 'questions' they asked themselves as they were making clinical decisions. These 'questions' are not recorded in clinical software; thus, the automated 'trigger' search function yielded few 'answers':**

"A classic example might be changing an anti-depressant. I'm not going to type in the notes "currently taking escitalopram, I want to put her on sertraline, what do I do?"

Why didn't GPs use KLICS?

The 4 non-users reported reasons associated with lack of time, rather than deficits in the tool. The self-installation of KLICS was a barrier to these GPs.

What did GPs think of the information?

- 5 GPs found useful information via KLICS. However, this was related to the quality of the information sources, rather than KLICS itself.
- 3 GPs suggested the inclusion of clinical guidelines would be an appropriate additional to a tool designed to support clinical decision making.
- While complementary medicines information was considered the least useful source, 2 GPs appreciated having access to this evidence to show patients:

"My patients know I'm not very positive about a lot of complementary medicines, but I like to impress on them that I've got reasons why, that I've actually got the resources there to show them if a thing works or not."

How did KLICS fit with GPs' consultation workflow?

- The 5 GPs who recorded patient notes during consultations found KLICS fitted well with their workflow. All of these GPs searched KLICS manually.
- One GP who recorded notes after consultations found KLICS fitted poorly with his workflow and largely abandoned its use.
- 3 GPs referred to KLICS in training and discussion with registrars:

"My registrar had a patient with a low B₁₂ and he said 'oh, I know what this person needs. They need a B₁₂ twice a week for 2 weeks and then every week for 2 weeks'. I said 'where did you get that from? The person only needs the injection once every 3 months'. So then I went...into KLICS and showed him."

Conclusions

KLICS is a novel means of providing rapid and easy access to quality information. Further development will improve technical aspects and the performance of triggers, and to determine the inclusion of additional resources.