A PILOT STUDY OF AN ELECTRONIC CANCER DECISION SUPPORT TOOL (ECDS) IN UK GENERAL PRACTICE

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## Aim

To evaluate the feasibility of an electronic cancer decision support tool (eCDS) in general practice.

Background

Developed in collaboration with BMJ Informatica, eCDS is designed to support GPs in their clinical decision-making when presented with a patient who has a cancer risk.

The eCDS tool is:

- Based on algorithms developed by Willie Hamilton (eRAT[1]) and Julia Hippisley-Cox (QCancer®[2]).
- Displays patient risk for a specific type of cancer, based on information in their patient record including symptoms, medical history and demographic data.
- Covers lung, colorectal, ovarian, pancreatic and oesophago-gastric tumour sites.
- Runs alongside a GP's IT system.
- Has three main functions; prompts, a symptom checker and a population risk stratification tool.
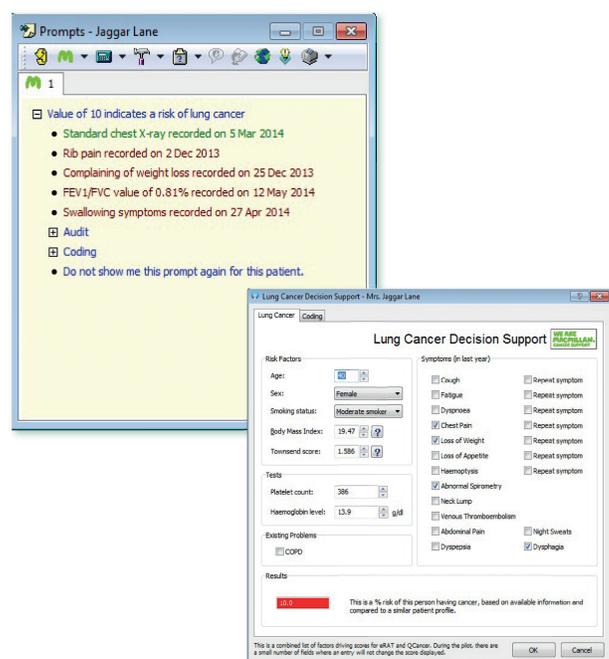
eCDS functions

- **Prompt** – For each patient with a cancer risk >2%, a prompt appears with the patient's tumour specific risk score and the reasoning behind it.
- **Symptom checker** – This is a tumour-site specific template with a list of potential symptoms for the GP to select. A live risk score is calculated incorporating information from the patient record.
- **Risk stratification** – This tool calculates the risk level for each patient in a practice, and allows the practice to review their population in order of risk for each cancer type.

> *It did open me up to a possibility that this patient may have cancer even with very strange, vague symptoms.*

GP from England

Methods

Piloted in 439 GP practices across the UK, covering 22 rural & urban areas. Practices were given access to either eRAT or QCancer® versions of eCDS to use in patient consultations. Data were collected via:

- **Experience tab:** Optional use of an experience template in the symptom checker function of the eCDS tool. Allowing GPs to record patient management data and their experience of using this function.
- **Semi-structured interviews:** To explore GP's views on barriers, facilitators and integration of eCDS into clinical practice. GPs were recruited on a self selecting basis.
- **Focus groups:** Held with patients from patient representative groups on implications of eCDS for GP-patient consultations, communication of risk scores and involvement in their own healthcare.

> *We have just detected our first patient with lung cancer. This patient would not have been referred without this tool being in place.*

GP from Scotland

Results

During this pilot, eCDS was used on 1,539 patient records with a total of 259 GPs (59%) completing the experience tab. Semi-structured interviews were held with 28 GPs and six focus groups were carried out with 31 patients.

19% of patients would not have been referred without use of the CDS tool

46% of patients had a CDS risk score that did not match the GP's perceived risk

31% of these patients' risk score was higher than the GPs perceived risk

43% of patients had further action taken as a result of the CDS tool being used

20% were referred

23% required investigation

From analysis of these data it was found that:

- The symptom checker was more likely to influence the GPs' decisions to investigate rather than refer. Investigations were carried out in 28% of occasions compared with referrals in 10% of occasions (p<0.01).
- In lung cancer risk patients, the GP decided to investigate in 40% of cases, compared with 15% of cases where the GP referred the patient (p<0.01).
- The qualitative focus groups demonstrated that the majority of participants would want to be informed of their risk score and eCDS could build rapport between patient and GP.
- In a third of patients the eRAT and QCancer® algorithms produced different categories of risk, with lung cancer risk incurring the most variation. This is likely due to the vague nature of lung cancer signs and symptoms.

Discussion

eCDS was shown to:

- **Prompt GPs to investigate** signs and symptoms in patients with a risk of cancer.
- Raise **awareness** of cancer signs and symptoms and remind GPs of the risk.
- Encourage GPs to **focus on vague or non red flag symptoms** and was particularly useful for patients who may have less easy to detect cancers, such as lung cancer, which GPs have identified as having challenging symptoms.
- Provide evidence that GPs underestimate the risk of cancer in patients, and help to identify and **flag up the low risk** but not no risk patients to the GP.
- Provide a safety net for GPs by highlighting patients where there is a risk of cancer.
- Encourage GPs to **'Think Cancer'** and provided them with the support and confidence to prioritise patients for referral or investigation.
- Facilitate the discussion of cancer between the GP and patient.

Conclusion

The evidence demonstrates that eCDS is a feasible tool to support clinical decision making during a 10-minute GP consultation, as well as providing evidence to inform future rollout plans.

Implementation

The tool has been downloaded in over 1,250 practices across the UK.

Macmillan Cancer Support are currently working with the main GP IT software providers to develop integrated versions of eCDS. For more information on this please see our handout.

References
(1) Hamilton W., Green T., Martins T., Elliott K., Rubin G., Macleod U. (2013) Evaluation of risk assessment tools for suspected cancer in general practice: a cohort study. Br J Gen Pract DOI: 10.3399/bjgp13X660751. (2) Hippisley-Cox J, Coupland C. 2011. Identifying patients with suspected gastro-oesophageal cancer in primary care: derivation and validation of an algorithm. British Journal of General Practice, 61, e707-e714.

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