

New PINCER Query Library tool to support safer prescribing

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Query 1: Patients with a history of peptic ulcer who have been prescribed a nonselective nonsteroidal anti-inflammatory drug (NSAID) without co-prescription of a proton-pump inhibitor (PPI)

Query 2: Patients with a history of asthma who have been prescribed a beta-blocker

Query 3: Patients aged 75 years and older who have been prescribed an angiotensin converting enzyme (ACE) inhibitor or a loop diuretic long term who have not had a computer-recorded check of their renal function and electrolytes in the previous 15 months

Query 4: Women with a past medical history of venous or arterial thrombosis who have been prescribed combined hormonal contraceptives (CHC)

Query 5: Patients receiving methotrexate for at least 3 months who have not had a recorded full blood count (FBC) or liver function test (LFT) within the previous 3 months

Query 6: Patients receiving warfarin for at least 3 months who have not had a recorded check of their international normalised ratio (INR) within the previous 12 weeks

Query 7: Patients receiving lithium for at least 3 months who have not had a recorded check of their lithium concentrations in the previous 3 months

Query 8: Patients receiving amiodarone for at least 6 months who have not had a thyroid function test (TFT) within the previous 6 months

The PINCER Query Library is a new software tool to identify at-risk patients who have been prescribed drugs commonly associated with medication errors.

Table 1. The eight queries contained in the PINCER Query Library tool

Medication errors, particularly those relating to prescribing or insufficient medication monitoring, are often associated with considerable risk of patient harm, including hospital admissions. The PINCER (pharmacist-led information technology intervention for medication errors) trial was developed as a randomised controlled study to test whether a pharmacist-led IT-based intervention compared with simple feedback could reduce medication error rates within the primary-care setting.

The trial involved at-risk patients in 72 general practices who were being prescribed drugs that are commonly and consistently associated with medication errors,

for instance NSAIDs and beta-blockers.

The results of the trial, published in the *Lancet*,¹ showed that the PINCER intervention is an effective method for reducing a range of clinically important and commonly made medication errors in primary care.

At six months' follow-up, the general practices receiving computerised feedback and pharmacist support had significantly fewer prescribing errors than those that received computerised feedback alone.

For this reason, there is much interest in rolling out the approach taken in the PINCER trial to general practices in the UK. Not only

might this help prevent unnecessary harm to patients but it may also reduce the costs associated with dealing with prescribing errors, which sometimes require hospital admission.

PINCER Query Library tool

As a first step towards this potential roll-out, PRIMIS (Primary Care Information Services) and the PINCER trial research team at The University of Nottingham have launched a new PINCER Query Library tool.

Based on the computerised queries used in the PINCER trial, this new tool is an extension of the PRIMIS CHART (Care and Health Analysis in Real Time) Query

Library and is now available free to all GP practices in England.

The Pincer Query Library tool consists of eight queries shown in Table 1. The aim of the tool is to identify at-risk patients who are being prescribed drugs that are commonly and consistently associated with medication errors so that corrective action can be taken to reduce the risk of occurrence. The tool therefore makes it easy to avoid some of the more common medication errors and this is a topic that will attract increasing national audit interest over the next couple of years.

Use of the tool will demonstrate a practice's commitment to patient safety as well as assisting GPs in their audit requirements for revalidation.

Below are a few simple steps to follow that will enable practices to obtain and use the Pincer Query Library tool.

1. Register with PRIMIS for membership to PRIMIS Hub

All practices wishing to make use of the Pincer Query Library, developed by PRIMIS, will need to be members of PRIMIS Hub. PRIMIS Hub is a vibrant online community and entitles members to a range of products and services from PRIMIS.

A basic-level Hub membership is completely free and easy to set up (www.primis.nottingham.ac.uk/hub/).

2. Download CHART and instructions

Once members, practices can log on to the PRIMIS Hub online area and download the CHART analysis tool, which is needed to run the Pincer Query Library. CHART helps GPs improve patient care by analysing the data held on their clinical computer systems and is available free to all members of

the PRIMIS Hub membership scheme.

This area of the Hub holds full instructions, guidance and information to help practices download, install and use CHART and for obtaining and running the Query Library.

3. Download and run the Query Library

The Pincer Query Library can be obtained from within the CHART tool once it is installed on a practice PC. Using CHART, the Pincer MIQUEST queries can be prepared to run on the practice clinical system. Instructions for running MIQUEST queries on the different GP clinical systems can be found within PRIMIS Hub.

4. Import, view, filter and print responses

Once the queries have been run, responses can be loaded into CHART. For each of the Pincer queries, a summary sheet provides an overview of the information contained in the data and highlights patients 'at risk'.

The data can be viewed at individual patient level in the datasheet view, which provides preloaded filters and the facility for users to define their own custom filters.

5. Analyse the results

Using CHART, practices can identify individual patients for review or highlight areas where practice policy may need to be reviewed.

For example, the Query 1 CHART summary sheet will show the number of patients with a past medical history of peptic ulcer who have been prescribed a nonselective NSAID without co-prescription of a PPI. The datasheet can be filtered to show who these patients are and will give specific items such as dates and codes of peptic ulcer

diagnosis and NSAID/PPI prescribing within the specified time frames.

Key questions for analysing the data

Having run the Pincer Query Library, some key questions for GP practices and primary-care pharmacists might include the following:

- Are all relevant data recorded using the GP clinical information system? Do any paper records also need to be examined as part of this audit?
- Has information been coded correctly on the clinical system?
- Are staff responsible for prescribing/issuing medication within the practice made aware of correct treatment protocols?
- Does the practice have a routine mechanism for identifying patients due for medication review and appropriate testing?
- How does the practice ensure that any functionality in the practice IT system is activated to provide appropriate warnings for all prescribers? How does the practice encourage prescribers to take heed of contraindication messages on their computer systems?

Within CHART, more information is available to support analysis including a data analysis and interpretation booklet and more detailed evidence-based summaries produced by the Pincer research team.

Recommended follow-up work

Practical steps in terms of follow-up work include:

- discussing the audit findings with the whole practice team including the primary-care pharmacist
- implementing agreed corrective action (if any) for patients identified as being at risk
- agreeing an action plan to improve patient safety systems in

the practice and assigning tasks to appropriate practice team members

- re-auditing in six months' time to see if any improvements have been made.

Reference

1. Avery AJ, *et al.* A pharmacist-led information technology intervention for medication errors (PINCER): a multi-centre, controlled trial and cost-effectiveness analysis. *Lancet* 2012;379:1310–9.

Declaration of interests

None to declare.

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