Prescribing safety in UK general practice

A cross-sectional study of patients from more than 500 UK general practices found high variation in potentially high-risk prescribing and provision of monitoring tests.

Overview:
- An observational, cross-sectional study of patients from 526 UK general practices found high variation between practices in the prevalence of potentially high-risk prescribing (between 0.28% and 10.2%) and in the provision of monitoring tests (between 10.4% and 41.9%).
- Older people and those prescribed multiple repeat prescriptions had higher risk of having an unsafe prescription.
- Younger people with fewer prescriptions had higher risk of receiving monitoring tests less frequently than recommended.
- These findings highlight the potential to improve prescribing safety in the UK and emphasise the importance of following the NICE guideline on medicines optimisation.

Background: Medicines-related patient safety incidents include potentially avoidable medicines-related hospital admissions and re-admissions, medication errors, near misses and potentially avoidable adverse events (NICE 2015).

Such incidents are common and are more likely to occur in people taking multiple medicines for long-term conditions. The PRACItCe study found that 1 in 20 prescription items in general practice contained either a prescribing or monitoring error, which affected 1 in 8 people (Avery et al. 2012).

Prescribing indicators have been developed to define prescribing patterns that can increase the risk of harm. The pharmacist-led information technology intervention for medication errors (PINCER) study tested computer analysis of GP records using a set of indicators designed to identify common medication errors (Avery et al. 2012). This approach, along with pharmacist feedback and support, successfully reduced prescribing errors in UK general practices. The indicators used in the PINCER study are now available for GPs to use as an audit tool in their own practices.
**Current advice:** The NICE guideline on medicines optimisation recommends that health professionals consider carrying out a structured medication review for some groups of people when a clear purpose for the review has been identified.

In addition, organisations should ensure that robust and transparent processes are in place to identify, report, prioritise, investigate and learn from medicines-related patient safety incidents, in line with national patient safety reporting systems – for example, the National Reporting and Learning System. They should consider using multiple methods to identify medicines-related patient safety incidents – for example, health record review, patient surveys and direct observation of medicines administration.

The guideline also recommends that organisations and health professionals consider applying the PINCER principles to reduce the number of medicines-related patient safety incidents, taking account of existing systems and resource implications.

The NICE pathway on medicines optimisation brings together all related NICE guidance and associated products on the area in a set of interactive topic-based diagrams.

**New evidence:** An observational, cross-sectional study by Stocks et al. (2015) considered the prevalence of different types of potentially hazardous prescribing and monitoring in UK general practice and the variation between practices.

Records for almost 5 million people were collected from 526 general practices across the UK that contributed to the Clinical Practice Research Datalink (CPRD). These people were considered to be at risk of a prescribing or monitoring error. The records were interrogated using a set of prescribing and monitoring indicators derived for GPs (a version of the PINCER indicator set). The proportion of people triggering each indicator was calculated.

The prescribing indicators were for potentially hazardous prescriptions of anticoagulants, antiplatelets, non-steroidal anti-inflammatory drugs, beta-blockers, glitazones, metformin, digoxin, antipsychotics, combined hormonal contraceptives and oestrogens. The monitoring indicators were for less frequent than recommended blood test monitoring for people with repeat prescriptions for angiotensin-converting enzyme inhibitors, loop diuretics, amiodarone, methotrexate, lithium or warfarin.

At least 1 prescribing indicator was triggered in 49,927 of 949,552 people (5.26%, 95% confidence interval [CI] 5.21 to 5.30%). At least 1 monitoring indicator was triggered in 21,501 of 182,721 people (11.8%, 95% CI 11.6 to 11.9%). The prevalence of monitoring indicators was consistently higher than that of prescribing indicators. The prescribing indicators with a higher prevalence were mainly related to prescribing NSAIDs without gastroprotection.

Older people and those prescribed multiple repeat prescriptions had significantly higher risk of triggering a prescribing indicator. Younger people with fewer prescriptions had significantly higher risk of triggering a monitoring indicator.

High variation between practices was seen for some indicators. The prevalence of different types of potentially hazardous prescribing ranged from 0.28% to 10.2%, and for inadequate monitoring ranged from 10.4% to 41.9%.

**Commentary by Dr Martin Duerden, GP and Clinical Senior Lecturer, Centre for Health Economics and Medicines Evaluation, Bangor University, North Wales:**

“This is an important study that follows on from the work of the PINCER study (Avery et al., 2012) and shows how prescribing safety indicators can be applied across UK general practice. These indicators are increasingly recognised as audit tools to identify potential errors and improve quality of care.

“The figures in Stocks et al. (2015) are stark: 1 in 20 people ‘at risk’ were getting unsafe prescriptions and just over 1 in 10 people needing monitoring were not receiving adequate tests. Furthermore, the variation in these figures from one practice to another was high, even after adjustment for patient-level and practice-level variables. This suggests that there is much
work to be done to improve prescribing safety in the UK. Prescribing indicators could be used by medicines management and optimisation teams in Clinical Commissioning Groups to improve patient safety, particularly because they can be used to help concentrate resources and efforts on outlier practices.

“The finding that older patients and those receiving multiple repeat prescriptions had the highest risk of triggering a prescribing safety indicator is not surprising. The message here is for greater vigilance in such patients and increased educational provision for prescribers.

“The finding that younger patients with fewer repeat prescriptions had higher risk of triggering a monitoring indicator is more surprising. It is difficult to explain, but the result may suggest less time or commitment to getting regular blood tests in younger people. If this is the case, maybe greater effort should be made to emphasise to these people the importance of monitoring, to strengthen recall systems, and to provide these tests at a time that fits into their busy lives.

“It is difficult to challenge the validity of the findings from Stocks et al. (2015). The authors used an iteration of the PINCER indicators, which were derived using practicing GPs (Spencer et al. 2014), and the study was very large, involving around 5 million patient records. If anything, this study might paint a rather optimistic picture of actual prescribing, because practices in the study were those that contributed to CPRD and therefore may have been more driven to maintain computer records and enhance practice systems. Perhaps all practices should consider running these indicators on their computers to identify risky prescribing.

“A caveat worth flagging up is that although indicators can identify prescribing that increases the risk of harm to patients, there may be exceptions where prescribing in this way is clinically justified.”

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