

Interventions to minimize high-risk prescribing can cut emergency admissions

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High-risk prescribing and preventable drug-related complications in primary care are major concerns for health care systems internationally, responsible for up to 4 per cent of emergency hospital admissions.

Now a major study of drug prescribing has shown that intervening in [primary care](#) health practices can significantly reduce rates of high-risk prescribing of drugs.

The results of the study have been published in the *New England Journal of Medicine*.

The study, led by NHS Tayside and the University of Dundee, has also shown that the change in prescribing patterns can lead to significant reductions in related emergency admissions to hospital, although the researchers say this finding requires further examination.

The study involved 33 General Practices across Tayside, Scotland, with just over 200,000 registered patients. Researchers were looking at patient exposure to high-risk prescribing of non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen, or antiplatelet agents like aspirin. This included NSAID prescription to people with kidney problems or heart failure, or prescribing NSAIDs to people taking anticoagulant drugs like warfarin.

Researchers staged a 48-week intervention comprising professional education, informatics to facilitate reviews of patient treatment, and

small financial incentives for practices to review patients.

They found the interventions led to a significant 37 per cent reduction in high-risk prescribing, and this improvement was sustained in the 48 weeks after financial incentives to review were withdrawn.

The rate of hospital admissions for gastrointestinal ulcer or bleeding was significantly reduced from 55.7 to 37.0 admissions per 10,000 person-years, as was the rate of admissions for heart failure.

The study was funded by the Scottish Government Chief Scientist Office.

"This trial shows that GP-led, targeted review of patients with high-risk prescribing of two commonly prescribed classes of medicines can reduce such prescribing and appears to prevent unnecessary harm," said Dr Tobias Dreischulte, of NHS Tayside's Medicines Governance Unit.

Professor Bruce Guthrie, of the University of Dundee, said, "Our previous work has shown that high-risk prescribing is common and often causes important harm. This new study shows that relatively simple interventions can significantly reduce high-risk prescribing in a lasting way, and are associated with reductions in emergency hospital admission for related complications.

"The NHS and many other health services internationally could, and we believe should, implement this kind of intervention now."

High-risk prescribing and preventable drug-related complications in primary care are major concerns for health care systems internationally. Up to 4 per cent of emergency hospital admissions are caused by preventable [adverse drug events](#), and in the United States the avoidable cost of drug-related [hospital admissions](#) emergency department

attendances and outpatient visits was estimated at \$19.6 billion in 2013.

The majority of drug-related emergency admissions are caused by commonly prescribed drugs, with substantial contributions from nonsteroidal anti-inflammatory drugs (NSAIDs) and anti-platelet medications like aspirin because of gastrointestinal, cardiovascular, and renal adverse drug events.

Despite routine public reporting of a number of indicators of high-risk prescribing practices, variation between practices and different areas is large, and improvement over time is minimal or slow.

Decisions about prescribing often involve balancing benefits and risks as well as the preferences of the patient, and high-risk prescribing is therefore sometimes appropriate, since benefits may be judged to outweigh the risk of harm in an individual.

Nevertheless, say the researchers, high-risk prescribing is so common and varies so much between general practices that they would expect it to be improvable, and at a minimum, regular review is required to assess continuing appropriateness in patients receiving such prescribing.

Dr Dreischulte said, "The close collaboration between the University of Dundee and NHS Tayside has been crucial in designing and implementing a pragmatic intervention that [general practices](#) bought into."

Professor Guthrie added, "However, persuading primary care practices to allocate scarce staff resources to improving the safety of prescribing is challenging, particularly when practices are independent, physician-owned small businesses, as is the case in many countries including in the United Kingdom, where this trial was performed."

A further study is already underway to evaluate the impact of expanding the range of high-risk [prescribing](#) to be targeted with more work planned to involve local pharmacists in the review process.

Provided by University of Dundee

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