Host department:

School of Medicine – Keele University

Title:

Consequences of national prescribing directives on primary care prescribing

Proposed supervisory team:

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Project description:

In attempt to reduce healthcare costs, NHS England and NHS Clinical Commissioners published "*Conditions for which over the counter items should not routinely be prescribed in primary care: Guidance for CCGs*" in 2018, to rationalise prescribing of medications and preparations the population can access over the counter (for example, eye lubrication for dry eyes). Other Clinical Commissioning Group (CCG) local prescribing schemes have been undertaken linked, and separate, to this document. While there is potential value in such schemes to reduce NHS costs to address deficits, reduce primary care prescribing workload and/or reallocate resources to other priority areas, there are two key risks: i) action may not be taken by primary care prescribers ii) unintended consequences may arise, for example, costlier or more dangerous prescribed medications may be sought in place of the previous preparations which have been disallowed.

This project will seek to establish the positive impact and unintended consequences of primary care prescribing initiatives that have been designed to reduce prescribing of products available over the counter. This will include three phases of work:

- Phase 1: what is already known about the positive impact and unintended consequences of local and national prescribing initiatives designed to reduce prescribing of products available over the counter.
    - Methods: Systematic review examining the existing literature. This could include both quantitative and qualitative studies, to be decided by the student. The latter could explore literature relating to the barriers and facilitators of such directives.
    - Analysis: If data allow a meta-analysis will be undertaken, however, this is felt to be unlikely. A narrative synthesis of findings will be performed.
- Phase 2: examine the impact of the national 2018 NHS England document addressing routine prescribing of products available over the counter.
    - Methods: using a large national longitudinal primary care database identify key prescribing indicators targeted by the national directive (described above) and determine whether expected reductions in prescribing following its publication were met. Through working with a patient advisory group and subsequent clinical consensus (methods to be defined by the Fellow), important potential unintended consequences in prescribing will also be examined for. Although the Fellow would decide on the final outcomes, an example would be, in the case of reductions in prescribing for dry eye treatment, increased primary care attendances for eye infections.
    - Analysis: Analysis will include changes in prescription rates and rates of unintended consequences, and methods such as joinpoint regression, to determine changes in trends in prescribing following the directive.

Multivariable regression will be used to assess whether impact is different across subpopulations (e.g. by age or deprivation).

- Phase 3: to establish the impact of local primary care prescribing initiatives to reduce prescribing of products available over the counter.
    - Methods: the Fellow will identify national and local prescribing initiatives through a scoping search of literature sources and relevant professional websites, as well as contact CCGs to obtain details of local prescribing initiatives to reduce prescribing of products available over the counter. For CCGs that respond, freely accessible openprescribing.net data will be analysed for relevant prescribing indicators for evidence both of positive impact and unintended consequences (shifts in prescribing behaviours to other drugs) by examining changes in rates of relevant prescriptions over time. Again, the Fellow will work with a patient advisory group and use clinical consensus to define potential unintended consequences to examine.

Analysis: The data available will be population-level aggregates (at the level of Clinical Commissioning Groups, Regions, and England). No individual patient-level data will be available. A joinpoint analysis will allow assessment of changes in prescribing patterns without prior specification of a time point (as would be used in a segmented regression analysis). The outcome of this PhD will be an improved understanding of the effectiveness of local and national initiatives to reduce prescribing of products available over the counter. Depending on the results, if positive impacts found, it may provide evidence for successful approach for altering prescribing habits. If no positive impacts found, or negative unintended consequences are identified, this will form the foundation for a larger piece of work future to explore how to rationalise prescribing in primary care in a way that is acceptable to patients, commissioners and prescribers

Training plan:

This PhD presents an opportunity for the student to gain training in systematic reviewing and routine prescribing data collection and analysis. Training needs will be dependent on the qualifications and previous experience of the PhD student and will be informed by the Vitae Researcher Development Framework.

Formal training:

The student will require skills in systematic reviews and advanced quantitative data analysis. They will also need project management expertise, writing and oral presentation skills. All the above can be obtained through modules provided at Keele University and/or attendance at staff and student development workshops, internal Systematic Review workshops. External training courses, where applicable, will also be identified according to learning and practical needs. Formal training will be identified which does not exceed agreed provision for costs.

Informal training:

Informal training will be achieved through attending internal and external seminars and methodological, statistical, and trials journal clubs. The student will be encouraged to present their work in different settings (e.g. internal seminars, post-graduate symposium, student groups), in addition to submitting abstracts to relevant national and international conferences during the PhD to gain experience of presenting research to a wider audience.

PPIE:

A patient advisory group will be convened to identify potential unintended consequences of prescribers following the chosen prescribing indicators. Patients would be presented with the directive about prescribing and asked what they think they may do if they were advised that the product was going to be removed or denied from prescription.