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Pharmacology

Where now for pharmacist led medication review?

Richard Holland, Richard Smith, Ian Harvey

Medication review has the potential to yield benefits but it is still unproved whether it is an effective use of scarce health resources even when optimally delivered.

Over the past century there has been a rapid growth in the size and proportion of the population aged over 65. Compared with younger people this group experiences worse health and consumes a disproportionate quantity of drugs, the volume and cost of which is increasing considerably.[1] These drugs are, of course, prescribed to reduce morbidity and mortality. However, drugs can also cause harm.[2] Older people especially are at risk of such harm, because of the number of drugs consumed, and age related changes in their physiology.[3]

Medication review has been advocated as a technique to ensure patients gain maximum benefit from their drugs, while simultaneously reducing the potential for harm. Achieving these aims is at the heart of successful ''medication review'' that has been defined as a: ''structured, critical examination of a patient's medicines with the objective of reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication-related problems, and reducing waste.''[4] In theory, this should improve health outcomes. It has also been assumed, although based on little high quality evidence, that such measures will lead to important gains for health systems by reducing hospital admissions and inappropriate drug prescribing. Such gains hold great appeal for policymakers when taken in combination with the apparent benefits to patients.[5] With this underpinning rationale in mind, medication reviews have been widely introduced and are increasingly undertaken by pharmacists operating separately from the physicians involved in prescribing decisions.

Over the past five years a substantial quantity of trial evidence has appeared relating to pharmacist led medication review. These trials have varied in terms of target population (older people generally, or those with a specific disease), numbers of pharmacists, and location of the intervention (home, pharmacy, general practice, hospital, or a combination). The primary outcome has also varied, including reducing drug related problems, adverse drug reactions, and hospital admissions, or improving medication appropriateness. No study has yet been sufficiently large to test whether such interventions can reduce mortality and, although many studies have measured quality of life, this is rarely a primary outcome.

There have been eight large studies (involving over 500 patients) of medication review in broad older populations: three conducted in the UK,[6–8] one across seven European countries,[9] four in the USA,[10–12] and one in Canada.[13] All entailed some kind of face to face encounter between a pharmacist and a patient. Findings from these studies have been mixed: one study suggested improved medication appropriateness and adherence but no affect on hospital admission,[10] one study showed a small increase in drug changes (2.2 compared with 1.9 over one year) but again no affect on hospital admission,[7] one study increased the proportion of resolved drug related problems (81% compared with 30%) but showed no affect on hospital admission,[8] one study showed no affect on quality of life, but slightly decreased hospital admissions,[11] two studies showed no clear effect on a variety of outcomes,[9 13] one study increased clinic visits and had no effect on quality of life or hospital admission,[12 14] and most recently the HOMER trial increased hospital admissions and GP visits and failed to improve quality of life.[6] No study found a positive effect on mortality or a clear improvement in quality life.

The evidence therefore presents us with a dilemma: those studies that have focused on medication related outcomes have shown some positive findings, but these do not seem to translate into measurable benefits to patients or health services. It could be argued that the quality of life measures used (often the SF-36) are too blunt to detect the impacts of these interventions, yet these interventions have been proposed as solutions to the important and costly problem of adverse drug reactions.

So is there a place for pharmacist led medication review? The most successful interventions have been delivered by small numbers of pharmacists working in close liaison with primary care physicians.[7 8] Services, on the other hand, set up at a distance from physicians have either failed to deliver clear positive outcomes,[9] or have potentially worsened health outcomes.[6] Furthermore, no high quality health economic analysis has been published, making it impossible to assess if this is an effective use of scare health resources even when optimally delivered.

Despite this, the UK government has decided to invest £40 million in providing pharmacist led services delivered within community pharmacy where pharmacists are at a distance from the physicians they hope to influence, and are unlikely to have ready access to patient records.[15]

Medication review, like drugs themselves, has the potential to yield benefits, but may also cause harm. This intervention delivered by professionals not primarily responsible for prescribing decisions, should be considered in the same way as other health technologies and be expected to adequately demonstrate not just effectiveness but also cost effectiveness before being introduced

more widely. At the moment the jury is still out on this newly promoted form of public health pharmacy.

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THE *JECH* GALLERY

Credit unions: ''a proud history of protecting the poor''

Poverty, both relative and absolute, remains at the root of public health inequalities: most commodities, not least that of money itself, are more expensive for the poor. Public sector workers on low pay can benefit from having access to credit unions, which can save them from loan sharks. Why don't more health services provide credit unions for their workers? This photograph shows a historic credit union building in the Lower East Side of Manhattan.

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