

Clinical pharmacists in primary care: a safe solution to the workforce crisis?

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Introduction

Primary care in the United Kingdom's NHS is in crisis. Systematic underfunding, with specific neglect of primary care compared to other clinical specialties, has combined with ever-rising demand and administrative workload to place a now dwindling workforce under unsustainable pressure.¹

A major factor in the growing workload in primary care is prescribing. An aging population and higher prevalence of chronic diseases is leading to increased case complexity and polypharmacy, and consequently greater potential for prescribing errors.² Nearly 5% of all prescriptions in general practices in England have prescribing or monitoring errors,³ while in some areas up to half of the prescriptions are prone to error.⁴ Although most errors are of mild or moderate severity, they can be life-changing for patients and costly for healthcare systems, accounting for 3.7% of preventable hospital admissions.⁵

Workload and time pressures exacerbate prescribing errors.⁶ Concerns about workload and access in primary care have led the UK Government to pledge increases in the general practitioner workforce,⁷ but general practitioners take at least 10 years to train and declining numbers of medical graduates internationally suggests a limited pool for recruitment. In this article, we discuss integration of clinical pharmacists in general practices as a potential solution to these problems.

Pharmacists: a solution to the crisis?

While the pool of general practitioners is limited, the number of pharmacists is increasing.⁸ Pharmacists

undertake shorter training than general practitioners, with four years undergraduate degree followed by one year of pre-registration experience. While the role of pharmacists has expanded beyond dispensing of medications and now involves provision of several other aspects of patient care, their knowledge and expertise is often under-utilised. Making use of their expertise in medication management, pharmacists could perform a variety of tasks in primary care, improving patient safety and clinical outcomes through optimised medication use, and potentially alleviating workload, freeing up general practitioners to deal with more complex cases and reducing waiting times for appointments.

Pharmacists have been working in primary care teams for some time in non-patient-facing roles. Areas in which they support practices include auditing for performance targets, implementation of enhanced services, preparation for inspections by the Care Quality Commission, training staff in repeat prescribing and providing medicines information for other clinicians. However, these roles currently vary from practice to practice. The widespread integration of pharmacists in both patient-facing and non-patient-facing roles therefore has the potential to have impact in three key areas: safety of prescribing; improved health outcomes; and access to primary care through reduction of general practitioner workload (Table 1).

Safe prescribing

Involvement of pharmacists can result in safer prescribing and clinical improvements in transfer from secondary to primary care.⁹ A pharmacist-led information technology intervention for reducing

Table 1. Benefits and challenges of integration pharmacists in primary care.

	Benefits	Challenges
Patients	Improved understanding of and adherence to medication Reduced medication-related problems and adverse drug events Improved clinical health outcomes	May feel consultation or advice is unnecessary May prefer consulting with GP Conflicting information (community vs. practice pharmacists)
GPs and practice staff	Reliable drug information and solutions to drug-related problems Improved drug knowledge Improved prescribing safety and quality More accurate medication records	Duplication of GP services Difficulty accommodating pharmacist Lack of time to make use of pharmacist Increased workload in responding to pharmacists' queries
Pharmacists	Increased scope of practice Integration into the primary healthcare team Increased professional satisfaction	Resistance of staff and patients Employed for limited hours May prove less financially rewarding
Health system	Reduced avoidable costs through rationalised prescribing and avoided adverse drug events Improved primary care access and reduced avoidable accident and emergency visits Improved health outcomes and patient satisfaction	Salary and training costs

medication error, carried out in 72 UK general practices, showed significant reduction of medication-related errors, such as prescription of beta-blockers in patients with asthma or failure to provide appropriate monitoring of angiotensin-converting enzyme inhibitors or loop diuretics.¹⁰ In Canada, pharmacists introduced in primary care practices identified potential drug-related problems in 93.8% (n=909) of patients. The most common shortcomings were patients requiring therapy but not receiving it (27%), not taking medications appropriately (16.5%) and receiving a too low dose of their medication (16.2%).¹¹ In Australia, pharmacists based in two general practices resolved 74% (n=166) of medication-related problems; overall adherence to medication regimes has also improved with pharmacist care.¹² Finally, a recent systematic review of pharmacist-led interventions in primary care suggested that pharmacists could improve appropriateness of prescribing in older adult patients.¹³

Health outcomes

Pharmacists integrated in general practice can have an important role in disease prevention, facilitating smoking cessation and weight management, for example.¹⁴ In general practitioner clinics for chronic conditions, they can help bring about significant

reductions in glycosylated haemoglobin, cholesterol and cardiovascular risk,¹⁵ as well as improving adherence to therapy, exacerbations, over-prescribing and quality of life in patients with chronic obstructive pulmonary disease.¹⁶ Pharmacist interventions, including patient education, feedback to physicians and medicine management, also have potential for a significant impact on blood pressure.¹⁷ Although there is considerable variability in the size of effect in individual studies, meta-analysis suggests a reduction in systolic blood pressure by 7.6 mmHg (95% CI -9.0 to -6.3) and diastolic by 3.9 mmHg (95% CI -5.1 to -2.8).¹⁷

General practitioner workload pressure and primary care access

The average general practitioner authorises 200 repeat prescriptions each week.¹⁸ With no protected or additional time available, repeat prescriptions, medication reviews, and reconciliation of medications on letters and discharge summaries are often squeezed into consultations or carried out between seeing patients and after surgeries. In an aging population with increasing chronic disease and co-morbidity, another significant demand on general practitioners' time is reviewing and managing patients with long-term conditions. Pharmacists'

ability of to perform these activities has the potential to address the significant general practitioner workload associated with medicines and chronic disease management. This could free up time for general practitioners to focus on other aspects of care and at the same time improve access to primary care. Short courses are also now available (typically six months part-time) to train pharmacists as prescribers, adding significantly to their ability to deal independently with patients and with medication-related problems.

A survey of general practice managers suggested that the most burdensome aspect of bureaucracy in primary care was the auditing necessary for performance-related payments.¹⁸ With many performance targets relating to medicines management, there is significant opportunity for pharmacists to have impact on general practitioner and manager bureaucratic workload.

Cost-effectiveness

Several studies have demonstrated cost-effectiveness of involvement of pharmacists in primary care in terms of improvement in outcomes such as cardiovascular risk^{19,20} and avoidance of error.¹⁰ Where pharmacists are able to save general practitioner time or appointments directly, for example in assessment, diagnosis and treatment of patients with minor illness, there is likely to be a clear cost advantage for the NHS. However, it may be necessary to implement changes at scale in order to see cost savings; one pilot study of pharmacist-led chronic pain management resulted in increased costs compared with usual care.²¹

Patient satisfaction

Pharmacist consultations in primary care are positively received by patients, who report high satisfaction with care¹² and appreciation of the time offered by pharmacists as well as recognition of their expert drug knowledge.²² Patients feel comfortable consulting with pharmacists in general practices and appreciate the privacy offered in consulting rooms.²² They also show greater acceptance of pharmacists as part of the team in general practices, with more appreciation and respect for their advice.²²

Challenges of pharmacists' integration in general practices

While the integration of pharmacists in the primary care setting provides real benefits for both patients and practices, some studies have highlighted

challenges, often related to communication with practice staff, patients and local retail pharmacists. Pharmacists have noted a degree of initial resistance among primary care staff, often relating to lack of knowledge or understanding of pharmacists' roles and professional abilities, where development of 'clinical respect' took time.^{22,23} Patients also are sometimes initially confused as to the pharmacist's role or fail to see the point in seeing a pharmacist.^{22,23} general practitioners have highlighted the possibility of conflict between practice-based and pharmacy-based pharmacists, sometimes worrying about the effect on relationships developed with local pharmacies over many years. Some practical barriers also exist, such as finding room to accommodate pharmacist-led clinics in smaller practices.²³

International experience

The distribution of pharmacists across healthcare and industry sectors varies significantly among countries. Globally, the majority of pharmacists work in the community (55%), followed by hospitals (18%) and the pharmaceutical industry (10%). Europe has the highest proportion of pharmacists in community settings (71%), while Southeast Asia the largest proportion in the pharmaceutical industry (31%).²⁴ Integration of pharmacists in primary care has been tested in a number of countries and healthcare systems, with some degree of variability in roles and responsibilities. Core activities have generally involved medication review, education, assessment of adherence, and disease and lifestyle advice. These activities are often focused on patients with long-term conditions and on patients at high risk of medication-related problems such as those with polypharmacy (Table 2).^{15,25}

Implications for the NHS

Substantial general practitioner workforce growth is unlikely to be achievable in the near future, making consideration of alternative models of primary care essential. Pharmacists integrated into general practices can be seen to offer a practical solution, with the potential to reduce general practitioner workload and improve access, while at the same time improving quality.

The reported success of a recent pilot programme in improving health outcomes and access to care²⁶ has led to expansion of this initiative. National Health Service England is investing £100m to support 1500 clinical pharmacists to work in general practice by 2020–2021 in addition to over 490 pharmacists already working in general practice as

Table 2. The role of pharmacists in primary care and distribution by sector in selected countries.

Country	Pharmacists' activities in primary care
USA	Prescribing according to protocols Preventive medicine in the areas of immunisations, smoking cessation, polypharmacy assessment and medication reconciliation Patient education Recommendations to prescribers
Australia	Perform medication management reviews Provide patient medication advice Develop and manage drug safety monitoring systems Support general practitioners prescribing and provide update for general practitioners on new drugs
Canada	Conduct medication reviews, educating, physical assessment (e.g. blood pressure) and monitoring Provide medication information to family health teams
UK	Resolving problems with medicines by working closely with practice teams and local community pharmacists Prescribing, advising, responding to discharge from hospital, rationalising repeat prescription lists, education for practice teams Prescribing audits and supporting Quality Outcome Framework
Japan	Provide education, health and lifestyle advice and monitoring
Thailand	Perform primary care pharmacy practice including medication reviews, educating and assessing adherence Providing Thai traditional and herbal medicine, and conducting health consumer protection Pharmacists in district (or community) hospitals are responsible for supervision of primary care at a sub-district level

part of the initial pilot scheme.²⁷ There are important implications for training and support for the new general practitioner pharmacist workforce; there will be a need for clarity in their role, with uniformity across areas and practices, and definition of competencies for their new extended activities. Promotion of the role of pharmacists will also be important, among other healthcare professionals as well as the public, to increase awareness and understanding of their expertise.

Increasing numbers of pharmacists in primary care will provide useful information, with a clear opportunity for research systematically to assess benefits and impact on safety, quality and access. The cost-effectiveness of any planned integration of pharmacists into general practice will be crucial, as will evidence about impact on clinical outcomes and patient satisfaction.

Declarations

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