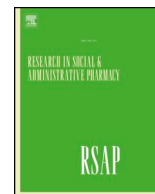




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On the frontline against COVID-19: Community pharmacists' contribution during a public health crisis

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ABSTRACT

The global spread of COVID-19 is placing unprecedented demands on healthcare services. In this time of crisis, innovative and adaptive methods of practising will be required across all health professions. In order to maximise the use of current available resources, it is vital that existing services are comprehensively reviewed and full use is made of any unrealised potential among healthcare providers. Community pharmacy is one of a number of health professions that has a key role to play in responding to the current pandemic. As the scope of community pharmacy practice varies considerably across countries, it is important to examine ways in which the profession can assist with the public health response to COVID-19 and maintaining the continuity of healthcare services. This article seeks to highlight roles and activities that community pharmacists can undertake to help in relieving pressure on other areas of the health service, such as general practice. This information could help to inform future decisions about the restructuring of existing health services by governments, public health bodies and policy makers in response to public health crises such as COVID-19.

Introduction

As the global spread of COVID-19 continues, unprecedented measures are being taken to contain and delay transmission of the virus. These include travel restrictions and the closure of schools, universities, bars, restaurants and retail shops.¹ The impact on every level of society has been profound and, over the coming weeks and months, the challenges faced by healthcare services will be compounded by the increased risk of infection among healthcare workers and ensuing staff absences due to illness or the need to self-isolate.² Community pharmacy is one of a number of health professions that has a key role to play in responding to this public health crisis. It is well established that community pharmacists are one of the most accessible healthcare professionals.³ During the current pandemic, it is recognised that community pharmacies will often be the first point of contact with the health system for individuals with COVID-19 related health concerns or who require reliable information and advice.⁴

During the previous H1N1 pandemic in 2009, community pharmacies were suitably placed to provide public health education and assist with vaccination.^{5,6} For example, using a simulation model, it was shown that community pharmacies could substantially increase the number of administered vaccine doses and reduce the time to achieve 80% single-dose coverage at population level.⁶ A recent consensus

exercise identified a wide range of roles that pharmacists can undertake in response to various types of disasters, such as pandemics, across four key phases (prevention, preparedness, response and recovery).⁷ More recently, the International Pharmaceutical Federation (FIP) published interim guidelines for the pharmacy workforce that outline key activities that form part of pharmacists' professional responsibility during the current pandemic.⁴ An adapted summary of key roles and activities outlined in these reference sources is provided in [Table 1](#). In the absence of an effective and approved vaccine or treatment for COVID-19, an early account of experiences within the community pharmacy setting in China following the outbreak highlights important actions that pharmacists can take as part of the global response to the pandemic.⁸ These include the provision of public health advice and education on personal and environmental hygiene, and making appropriate referrals in cases of suspected symptoms.

The scope of community pharmacy practice varies considerably across countries,^{9–11} and in some instances pharmacists' expertise is undoubtedly underutilised. Therefore, in the midst of a public health crisis of the current magnitude, it is important to examine roles and activities that community pharmacists can undertake to help in relieving pressure in other areas of the health service, such as general practice and emergency departments. This is particularly relevant as various health services are now being restricted (e.g. routine health

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Table 1An overview of key community pharmacist roles and activities during the COVID-19 pandemic [adapted from ⁴ and ⁷].

Prevention	Preparedness	Response	Recovery
(Measures to reduce the health risks posed by the pandemic)	(Measures to ensure timely and effective responses from the healthcare system)	(Immediate actions in response to the pandemic)	(Measures to return to 'normal' activities post-pandemic)
Provide factual and reliable information on the disease and associated symptoms	Maintain continuity of pharmacy services, including supplies of essential medications and other products (e.g. hand sanitisers, protective masks)	Implement referral pathways for any suspected cases	Re-establish normal working services and stock levels
Educate the public on infection control and preventive measures to reduce transmission (e.g. hand hygiene, social distancing, self-isolation)	Assist local and national management teams in ensuring a coordinated health service response	Facilitate continued supply of over the counter and prescription medications to patients (including emergency supply of repeat medications where necessary)	Identify and prioritise the care of vulnerable patient groups
Implement infection control measures (e.g. cleaning and disinfection of the pharmacy environment, limiting public access to the pharmacy)	Keep informed of relevant updates from public health agencies and regulatory bodies	Assist in dealing with any supply shortages (e.g. sourcing therapeutic alternatives, preparing alcohol-based hand sanitiser formulations)	Update relevant patient records and ensure that patients have valid prescriptions on file

checks and medication reviews, non-urgent elective surgeries) to free up resources to deal with the COVID-19 pandemic,^{12,13} some of which community pharmacists could assist with. This article seeks to highlight additional roles and activities to those relating to the public health response (as outlined in Table 1) that can be undertaken by community pharmacists and could help to alleviate pressure on general practice and other areas of the health service.

Managing minor ailments

Although the main focus of healthcare services over the coming weeks and months will undoubtedly be on responding to COVID-19, people will also continue to develop other non-COVID-19 related symptoms and conditions that require attention. Depending on the nature and severity of these ailments, previous research has shown that a sizeable proportion of cases can be effectively managed in the community pharmacy setting with a high degree of patient satisfaction.¹⁴ This is vital to maximising the efficiency of health service delivery as data from the UK indicates that more than one in 10 general practitioner (GP) visits and one in 20 emergency department visits are for minor ailments that could be managed in community pharmacies.¹⁵

Work has been undertaken to develop a definitive list of low acuity conditions (i.e. common self-limiting or uncomplicated conditions) that can be clinically assessed and managed by community pharmacists.¹⁶ These include allergies and skin rashes, coughs and colds, and gastrointestinal complaints, and serve to highlight the vast range of symptoms and conditions that can be managed in the community pharmacy setting. For example, springtime typically marks the commencement of hay fever symptoms which affect many patients worldwide.¹⁷ A range of effective treatments are available over the counter (OTC) in community pharmacies to help treat and prevent hay fever symptoms (e.g. antihistamines, intranasal corticosteroids).¹⁸ However, in order for eligible patients to obtain these medications (or medications for other minor ailments) free of charge on public health schemes, they typically need a prescription from their GP to avoid paying for the OTC medication out-of-pocket.

Designated schemes exist in the UK and Canada that enable community pharmacists to assess individuals who present with particular minor ailments and offer appropriate self-care advice and treatment options.¹⁰ These include OTC and certain prescription medications from agreed formularies. These schemes vary across jurisdictions in terms of their availability and structural characteristics but are intended to reduce the associated burden of treating these ailments on high-cost settings such as general practice and emergency departments.^{10,19} In many cases, patients who are eligible for free healthcare do not have to pay for the consultation or any medication that is supplied. Although further high quality evaluations of community pharmacy-based management of minor ailments and their impact on clinical outcomes are

needed,²⁰ these types of schemes are of particular importance in the midst of the current public health crisis as they could potentially reduce GPs' minor ailment-related workload by more than 50%.¹⁹

Extended prescribing roles and related activities

In addition to formal minor ailment schemes, the scope of community pharmacists' practice has also increased through non-medical prescribing (i.e. prescribing by healthcare professionals, other than doctors and dentists, who have attained an advanced qualification in prescribing and are legally permitted to prescribe) which is in place in countries such as the UK and Canada.^{11,21} Pharmacist prescribing models vary across countries/jurisdictions and can be broadly categorised as independent, supplementary or collaborative.^{11,21} These primarily differ in the degree of responsibility delegated to the pharmacist prescriber.²² For example, independent pharmacist prescribers have the highest level of autonomy whereby they are both responsible and accountable for assessing patients with either diagnosed or undiagnosed conditions and making subsequent decisions about their clinical management, including prescribing. In contrast, supplementary prescribing involves a partnership between an independent prescriber and the pharmacist, as the supplementary prescriber, who is then responsible for implementing an agreed patient-specific clinical management plan.

The extension of non-medical prescribing rights to pharmacists is intended to enhance patient care in various ways, such as improving access to timely care and maximising use of health professionals' knowledge and skills, thereby improving the efficiency of healthcare delivery.^{11,21,22} There is evidence to show that non-medical prescribers, such as pharmacists, are as effective as medical prescribers and can achieve comparable outcomes across a range of clinical measures (e.g. blood pressure control), medication adherence, health-related quality of life and patient satisfaction.²³

In countries where community pharmacists do not currently have prescribing rights, there are numerous challenges to overcome in expanding the scope of their current practice, including socio-political barriers and resourcing issues.²¹ In such cases, extending prescribing rights for pharmacists may not be realistic or actionable in the midst of the current pandemic. However, there are other related activities that may be amenable to more immediate modifications in pharmacists' current working practices and help to reduce the burden on general practice. These include the dispensing of repeat prescriptions and emergency supplies of medications at the request of patients.

Repeat prescriptions account for a considerable proportion of all dispensing activity.²⁴ A number of countries, such as Ireland and the UK, have recognised the challenge in maintaining continuity of repeat prescriptions due to the impact of COVID-19 on GP practices and responded accordingly by implementing additional measures that will

enable pharmacists to continue to dispense further supplies of recent prescriptions for regular medications at appropriate intervals.^{25,26}

Emergency supply provisions enable community pharmacists to use their professional judgement to ensure continuous supply of medications to patients in cases where they are satisfied that there is an immediate need and that it is not possible/practical for the patient to obtain a prescription from their prescriber. Patient requests for emergency supplies of medications are encountered on a regular basis in practice, primarily out of hours.^{27,28} Oftentimes, these requests are from older patients and individuals with long-term conditions. Community pharmacists are well placed to handle out of hours emergency supply requests and can help to divert patients from emergency care services.²⁹ However, the maximum quantity of medication that can be supplied on the basis of such requests is limited. For example, in Ireland this is typically restricted to five days' supply with some exceptions (e.g. inhalers, topical preparations). Under the current circumstances, the permitted duration of supply may need to be extended as happened following Hurricane Katrina, where one US state increased the quantity of medication that could be supplied to patients with chronic conditions from three days to 30 days.⁷

Balancing supply and demand

In the wake of widespread closures of schools, universities and retail business, there has been unprecedented demand on food supplies and other household goods (e.g. toilet paper). Similarly, there have been anecdotal reports of patients stockpiling medications. Unless prompt action is taken, this sudden increase in demand could have a considerable and detrimental effect on the medication supply chain.

Medication shortages occur when the total supply of a medication is insufficient to meet current or projected demands at the patient-level.³⁰ The reported frequency of medication shortages worldwide has been increasing in recent years and has been described as a healthcare crisis in itself.^{30,31} The underlying reasons for medication shortages under normal circumstances (i.e. in the absence of a pandemic) are complex and multifaceted and can include problems with ordering, manufacturing or distributing medications at a local or national level.^{30,32} The clinical consequences of medication shortages can be substantial and include increased patient safety risks such as medication errors and adverse patient outcomes.³⁰ Further adverse consequences of medication shortages include a drain on pharmacy resources whereby additional time needs to be devoted to either sourcing or compounding suitable therapeutic alternatives and liaising with clinicians to amend prescriptions.^{33–35}

Although guidelines and frameworks exist to aid health systems in managing medication shortages,^{36,37} no single approach can completely eliminate the clinical implications and associated risks for patients. Pharmacists are well positioned to reduce risks of further medication shortages arising from COVID-19 by reassuring patients and members of the public of the continued availability of OTC and prescription medications based on rational levels of demand and implementing policies to prevent unnecessary stockpiling. These could include limits on the quantity of medication dispensed (e.g. one month's supply at time). Preventing stockpiling of OTC medications may, however, prove more challenging.

Promoting continued medication adherence

In addition to protecting continuity of medication supply at the community pharmacy level, it is equally important that patients maintain adherence to their current medication regimens in order to prevent any deterioration in their current health status that could ultimately place additional demand on currently overburdened health services. Studies involving patients with chronic medical conditions who were affected by Hurricane Katrina have reported negative impacts

of this natural disaster on medication adherence.^{38,39} For example, a study involving a geographically representative sample of Hurricane Katrina survivors with chronic medical conditions found that one fifth of participants reported cutting back or terminating their medication intake following the disaster for a variety of reasons including limited access to physicians and medications, as well as financial/insurance-related problems.³⁹ This was more commonly reported in patients with conditions that can be temporarily asymptomatic if treatment is disrupted (e.g. diabetes).

Although COVID-19 is a pandemic as opposed to a natural disaster, it too is creating challenges for patients in terms of its impact on normal day-to-day routines (e.g. through social distancing and self-isolation requirements), employment and access to healthcare services which will ultimately create new barriers to medication adherence. Community pharmacists have an important role to play in promoting medication adherence through the provision of evidence-based interventions.^{40,41} However, income losses in particular may affect patients' abilities to continue to pay for their medications. Current medication reimbursement policies should be re-examined in light of the acute income losses faced by many individuals whose jobs have either been lost or are now under threat. For example, access to medication on public health schemes may need to be increased and prescription co-payments for patients who obtain their medications on such schemes may need to be reconsidered as these can also negatively impact on medication adherence.⁴²

Other areas

The overall impact of the current pandemic is likely to result in a substantial reorganisation of future healthcare services. Other roles and activities for pharmacists that should be considered as part of any reorganisation include medication use reviews,⁴³ chronic disease management,⁴⁴ and a greater involvement in general practice activities as practice-based pharmacists as is the case in the UK.⁴⁵ In order to maximise community pharmacists' contribution to the health service and potential to alleviate GP workload, a whole system-level approach will be required.⁴⁶

As the pharmacy profession responds to COVID-19, innovative and extended methods of practice will be needed. For example, in order to promote social distancing and facilitate self-isolation while ensuring that patients continue to have access to vital pharmacy services, new methods of service delivery will play an increasing role. These could include medication delivery services and video-based consultations.^{47,48} It is important that any potential new services are reviewed by relevant professional bodies and provisions put in place for adequate support and resourcing. At an appropriate stage in the future, when current curtailment efforts have taken effect, and time and resources allow, mechanisms should also be put in place to ensure that the experiences of key stakeholders (e.g. pharmacists, patients, policymakers) and other relevant data are collected, evaluated and disseminated to help ensure evidence-based responses to future public health crises.

Conclusion

In this time of crisis, innovative and adaptive methods of practising will be required across all health professions. The roles and activities highlighted in this article are not exhaustive, but serve to illustrate a range of areas in which community pharmacists could make substantial contributions. These are currently implemented to varying extents across different countries. In restructuring existing health services to respond to the current public health crisis, it is important that governments, public health bodies and policy makers review existing services and make full use of any unrealised potential among community pharmacists and other frontline health service providers.

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Declaration of competing interest

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