An investigation into the awareness, demand and use of community pharmacy services for people with long-term conditions

A thesis submitted to The University of Manchester for the degree of Doctor of Philosophy in the Faculty of Biology, Medicine and Health

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Ali M.K. Hindi

School of Health Sciences
Division of Pharmacy and Optometry
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<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMA</td>
<td>British Medical Association</td>
</tr>
<tr>
<td>BSA</td>
<td>British Social Attitudes</td>
</tr>
<tr>
<td>CCG</td>
<td>Clinical commissioning group</td>
</tr>
<tr>
<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
</tr>
<tr>
<td>CMS</td>
<td>Chronic Medication Service</td>
</tr>
<tr>
<td>COPD</td>
<td>Chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>CPCF</td>
<td>Community Pharmacy Contractual Framework</td>
</tr>
<tr>
<td>CPWS</td>
<td>Centre for Pharmacy Workforce Studies</td>
</tr>
<tr>
<td>DMR</td>
<td>Discharge Medicines Review</td>
</tr>
<tr>
<td>DoC</td>
<td>Declaration of Competence</td>
</tr>
<tr>
<td>EMBASE</td>
<td>Excerpta Medica Database</td>
</tr>
<tr>
<td>EMIS</td>
<td>Education Management Information System</td>
</tr>
<tr>
<td>eRD</td>
<td>Electronic repeat dispensing</td>
</tr>
<tr>
<td>GP</td>
<td>General Practitioner</td>
</tr>
<tr>
<td>HEI</td>
<td>Higher Education Institution</td>
</tr>
<tr>
<td>HMR</td>
<td>Home Medicines Reviews</td>
</tr>
<tr>
<td>IPA</td>
<td>International Pharmaceutical Abstracts</td>
</tr>
<tr>
<td>IUC CAS</td>
<td>Integrated Urgent Care Clinical Assessment Service</td>
</tr>
<tr>
<td>LTC</td>
<td>Long-term condition</td>
</tr>
<tr>
<td>MPPharm</td>
<td>Master of Pharmacy</td>
</tr>
<tr>
<td>MTM</td>
<td>Medication Therapy Management</td>
</tr>
<tr>
<td>MUR</td>
<td>Medicines Use Review</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
</tr>
<tr>
<td>NMS</td>
<td>New Medicine Service</td>
</tr>
<tr>
<td>NPA</td>
<td>National Pharmacy Association</td>
</tr>
<tr>
<td>NUMSAS</td>
<td>NHS Urgent Medicines Supply Service</td>
</tr>
<tr>
<td>PhIF</td>
<td>Pharmacy Integration Fund</td>
</tr>
<tr>
<td>PPAB</td>
<td>Patient and Public Advisory Board</td>
</tr>
<tr>
<td>PRISMA</td>
<td>Preferred Reporting Items for Systematic Reviews</td>
</tr>
<tr>
<td>PTP</td>
<td>Pharmacy Trial Program</td>
</tr>
<tr>
<td>QOF</td>
<td>Quality and Outcomes Framework</td>
</tr>
<tr>
<td>SCR</td>
<td>Summary Care Record</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
Abstract

The increasing population of patients with long-term conditions (LTCs) poses particular challenges for healthcare organisations due to high levels of morbidity, healthcare costs and workload in general practices. Policymakers have recognised the potential of community pharmacies to meet some of the needs of patients with LTCs and reduce general practitioners’ (GPs) workload by implementing novel reimbursement structures for a range of public health and medicines services (“extended services”) across the United Kingdom. However, there is evidence that, despite positive outcomes, patient awareness, demand and uptake of these extended services is low. This PhD aimed to explore and identify ways to improve low awareness, demand and use of community pharmacy services which may benefit patients with LTCs.

Three studies were conducted to achieve the aim of this programme. Study One systemically reviewed the literature on patient/public, pharmacist and GP perceptions of community pharmacy services and confirmed that awareness, demand and uptake of extended services was low and that integration within primary care remained poor. However, GPs’ views were underrepresented and the published evidence did not explore ways to overcome low awareness and uptake of extended community pharmacy services with a view to better integrate community pharmacy services into the patients’ primary care pathway.

Study Two was a qualitative focus group study which used the 7Ps marketing mix to examine the views of the three main stakeholder groups – patients, community pharmacists and GPs – to identify how community pharmacy services may be better used and integrated within the primary care pathway for people with LTCs. Study Three was informed by the findings of Study Two and involved a cross-sectional survey of patients’ views. Using the 7Ps marketing mix highlighted that improving consistency in delivery and quality of services; strategically promoting community pharmacy services; and incentivising joint-working between community pharmacies and GP practice along a patient’s primary care pathway could increase patients’ and GPs’ awareness of and demand for community pharmacy services. Service characteristics such as pharmacy staff’s interpersonal skills, good quality consultation rooms and having integrated information systems with GP practices are also essential to encourage patients to use community pharmacies for management of LTCs instead of GP practices.

The findings in this research show that community pharmacies have the potential to offer more support for patients with LTCs but further developments are needed to fully integrate community pharmacy services within patient primary care pathways. After conceptualising key factors which could influence better awareness, demand and use of community pharmacy services for patients with LTCs, this thesis sets out a series of recommendations for policymakers and future research.
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Dedication

This thesis is dedicated to my mother who is the most important and inspirational person in my life. Nothing would have been possible without her constant encouragement, prayers and emotional support. Everything that I am or ever hope to be, I owe it all to my superhero mother!

I also dedicate this thesis to my amazing father and my wonderful brothers – Yassir Hindi and Khaled Hindi, for their endless support, loyalty and unconditional love.
Acknowledgements

I would like to express my deepest gratitude to my PhD supervisors, Professor Ellen Schafheutle and Dr Sally Jacobs, for their encouragement, time and expert advice throughout my doctoral study; I could not have asked for a better supervisory team. I would like to thank Professor Ellen Schafheutle for her belief in me throughout all of my academic endeavours; her leadership qualities have given me so much confidence and helped me grow as a researcher – she is an inspiration and a great role model to me. I would like to extend a very special thanks to Dr Sally Jacobs for always making the time for my concerns and reassuring me throughout my PhD project; if she received a penny for every time I came knocking on her door for guidance she would be a millionaire – I am so fortunate and proud to have been her first PhD student!

I would like to give a special recognition to Professor Parastou Donyai who was a great mentor to me when I came to the UK to pursue my postgraduate studies. Her invaluable advice and support during my MSc course paved the way for my PhD journey.

I would also like to thank my PGR tutor Dr Douglas Steinke for his friendship and support; I am hoping he won’t have to see me hanging around in the office most evenings or on weekends anymore. Thank you also to Alyssa Piasecki, Sarah Bellis and Glenys Barber for your helpful administrative support and in particular Alyssa for putting up with my endless inquiries about paperwork and the postal service. I would like to acknowledge my fellow PhD students and postdoctoral researchers in the Division of Pharmacy and Optometry for their support and entertaining office gossip. Of course, I would like to sincerely thank all the participants who took part in this research and everyone who helped with recruitment process.

Outside of my studies, I would like to thank my brothers from another mother who always supported me and kept in touch regardless of the distance and time apart – Talal Jarrah, Mahmoud Ebraheem and Abdullah Al-Saffar.
The Author

Ali Hindi was born in Baghdad, Iraq and grew up in England, Canada and Kuwait. He completed his pharmacy degree (BPharm) in 2015 at Kuwait University. In 2016, he received a distinction in “MSc pharmacy practice research” at University of Reading. Throughout his MSc, Ali worked with Professor Parastou Donyai as the lead researcher in developing and validating a patient satisfaction questionnaire for the Medicines Use Review. After that, Ali began his PhD at The University of Manchester in late 2016. During this time, he was also a teaching assistant and worked with Professor Ellen Schafheutle on an HEE NorthWest commissioned evaluation of non-medical prescribing in primary care, community pharmacy and mental health.
Chapter One - Introduction

Chapter Guide:
This chapter provides an introduction to the programme of research and outlines the thesis structure. This chapter also provides the dissemination of research and concludes with the contributions of the author and his supervisors.

1.1 Introduction

Healthcare organisations worldwide find themselves facing new challenges to keep up with increasing patient demands.¹ As a result of these increased demands, there has been a shift of healthcare activities from secondary care to primary care in the United Kingdom (UK).² The shifting emphasis towards primary healthcare has led to a considerable increase in workload pressure on general practitioners (GPs).² ³ The increasing population of patients with long-term conditions (LTCs) are associated with high levels of morbidity, healthcare costs and GP workloads.³ ⁴ These patients present with a range of healthcare needs such as regular monitoring of condition(s), management of complex dosing regimens, ensuring appropriate use of medications and lifestyle education.⁵

Community pharmacies are the most frequently visited healthcare destinations.⁶ The frequency of community pharmacy visits can be attributed to the nature of their settings which offer long opening hours and non-appointment-based services.⁷ In addition, community pharmacists are trained healthcare professionals whose skills and knowledge could be further utilised.⁷ ⁹ Therefore, international health policy initiatives have focused on extending community pharmacy services through novel reimbursement structures to meets some of the demands for patients with LTCs and help alleviate existing pressures in general practice.¹⁰ ¹¹

The UK National Health Service (NHS) introduced new community pharmacy contractual frameworks in England and Wales in 2005 and Scotland in 2006, which reimburse
pharmacists for clinical, medicines and public health services, in addition to the more traditional medicines supply (i.e. dispensing).\textsuperscript{12} Whilst evidence has demonstrated positive outcomes from these extended community pharmacy services,\textsuperscript{13-15} patient uptake\textsuperscript{8, 16-18} and awareness\textsuperscript{19,20} of these services has been low.

Recently, the UK government announced new plans to further extend community pharmacy services.\textsuperscript{21,22} In line with these recent policy initiatives, it is important to identify how awareness, demand and utilization of community pharmacy services could be enhanced. The aim of this programme of research is therefore to explore and identify ways to improve awareness, demand and use of community pharmacy services which may benefit patients with LTCs. Figure 1-1 provides the studies undertaken to address the aim of this programme of research.

\textbf{Study One: Literature review}
- \textbf{Part 1:} Systematic review of patient and public views on community pharmacy services in the United Kingdom
- \textbf{Part 2:} Systematic review of pharmacist and GP views on community pharmacy services in the United Kingdom

\textbf{Study Two: Qualitative research}
- Focus group study with patients, pharmacists and GPs to explore how community pharmacies services may be better used and integrated within the primary care pathway for people with long-term conditions

\textbf{Study Three: Quantitative research}
- Cross-sectional survey study involving patients with long-term respiratory conditions to identify which factors could influence people to make better use of community pharmacy services

\textbf{Figure 1-1:} Studies undertaken to address the aim of the programme of research
1.2 Thesis Structure

Chapter Two provides background information on LTCs, the increasing patient demand on primary care, and the potential of expanding community pharmacy services to meet some of the needs for patients with LTCs. This chapter then describes community pharmacy advancements in the UK and other countries with similar developments.

Chapters Three provides an overview of the approach taken for this programme of research and the rationale for the thesis format.

Chapter Four describes the theoretical models underpinning this programme of research and the research methods applied for each study.

Chapters Five, Six, Seven, Eight are written in journal format. The first page of each chapter indicates whether the study has been published, submitted or prepared for publication but has not yet been submitted to a journal.

Chapter Five presents Study One Part 1 which is a systematic review of the literature extracting public and patient views on community pharmacies to further explore and better understand the reasons behind low awareness and uptake of community pharmacy services.

Chapter Six presents Study One Part 2 which is a systematic review of the literature covering pharmacist and GP views on community pharmacies to identify strengths and potential barriers to the integration of community pharmacy services within primary care.

Chapter Seven presents Study Two which is a focus group qualitative study involving community pharmacists, GPs and patients, to explore how community pharmacies services may be better used and integrated within the primary care pathway for people with LTCs.

Chapter Eight presents Study Three which is a cross-sectional survey study involving people with respiratory LTCs. The aim of this study was to evaluate which factors could influence people with LTCs to make better use of community pharmacy services within the primary care pathway.

Chapter Nine concludes the thesis by discussing findings from the overall programme of research. This chapter summarises the key findings from each study and highlights the strength and limitations of these studies. This chapter also discusses the contributions of this programme of research to the literature as well as the implications for policy and practice.
1.3 Dissemination of Research

Publications

- **Study One Part 1 (Chapter Five):**

- **Study One Part 2 (Chapter Six):**
  Hindi AMK, Jacobs S, Schafheutle EI. Solidarity or Dissonance? A Systematic Review of Pharmacist and GP Views on Community Pharmacy Services in the UK. *Health Soc Care Community*. 2019; 27: 565–598

- **Study Two (Chapter Seven):**

Presentations

- **Study One Part 1 (Chapter Five):** has been presented in the form of a poster presentation at The 2017 University of Manchester Postgraduate Summer Showcase.

- **Study One Part 2 (Chapter Five) and Study Two (Chapter Seven):** were jointly presented in the form of an oral presentation at The 2017 Division of Pharmacy and Optometry Showcase.

- **Study One, Study Two and Study Three (Chapters Five, Six, Seven, and Eight):** were jointly presented in the form of a poster presentation at The 2018 Division of Pharmacy and Optometry Showcase. The author was awarded second place for the poster (see Appendices).
1.4 Contributors

The author (Mr Hindi) devised all of the studies and produced of all papers included in this thesis. He was responsible for collecting and analysing the data in all of the studies. He drafted and revised the manuscripts for the papers.

**Ellen I. Schafheutle (PhD, MRes, MSc, FRPharmS, FFRPS)**

Professor Schafheutle is Mr Hindi’s main supervisor and was responsible for devising all of the studies with Mr Hindi. She monitored Mr Hindi’s work throughout the studies and critically reviewed all of the manuscripts for the papers.

**Sally Jacobs (BSc, PhD)**

Dr Jacobs is Mr Hindi’s second supervisor and was responsible for devising all of the studies with Mr Hindi. She monitored Mr Hindi’s work throughout the studies and critically reviewed all of the manuscripts for the papers.
Chapter Two - Background

Chapter Guide:

This chapter provides essential background information which informed this programme of research. The first section (2.1) in this chapter describes the prevalence of LTCs with emphasis on the healthcare challenges associated with these conditions. The second section (2.2) discusses patient demand on GP practices and the potential of expanding the role of community pharmacy to manage some of the demand for patients with LTCs. The subsequent sections explain the evolution of community pharmacy in the UK (2.3), the revised community pharmacy contract in the UK (mainly England) (2.4), the Pharmacy Integration Fund (2.5) and other countries with similar community pharmacy advancements (2.6). The final section (2.7) in this chapter highlights the low awareness, demand and use of community pharmacy services amongst patients/members of the public and why it is important to address this issue.

2.1 Long-Term Conditions

2.1.1 Definition of Long-Term Conditions

The Department of Health defines a long-term condition (LTC) as “a condition that cannot, at present, be cured but can be controlled by medication and other therapies”. LTCs cover a wide range of diseases which include but are not limited to: diabetes, respiratory disorders, cardiovascular diseases, cancers and mental health disorders. There are several other terms which can be used interchangeably to describe LTCs such as: “chronic diseases”, “chronic illnesses”, “chronic conditions”, “long-term health conditions”, “long-term illnesses”, “long-term diseases” and “non-communicable diseases”. For consistency, the term long-term
condition (LTC) is used throughout this thesis. The presence of two or more LTCs in the same patient is commonly defined as “multimorbidity”.

2.1.2 Prevalence of Long-Term Conditions

There are more than 15 million people (30% of the population) in England and around 2 million people (40% of the population) in Scotland with at least one LTC. Based on the 2010/2011 Quality and Outcomes Framework (QOF) disease register, the most prevalent LTCs in England are hypertension, depression, asthma, diabetes and coronary heart disease (see Table 2-1). The aging population is the main factor contributing to the prevalence of LTC as the likelihood of having an LTC increases with age. The number of people with more than one LTC (i.e. multimorbidity) also increases with age and these people are more likely to experience reduced quality of life and poorer clinical outcomes. Whilst the prevalence of LTCs varies across different regions in the UK, the likelihood of having a LTC increases in areas with higher levels of deprivation.

Table 2-1: Prevalence of long-term conditions based on Quality and Outcomes Framework disease registers (2010/2011)

<table>
<thead>
<tr>
<th>Long-term condition</th>
<th>Number affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>7,460,000</td>
</tr>
<tr>
<td>Depression</td>
<td>4,878,000</td>
</tr>
<tr>
<td>Asthma</td>
<td>3,273,000</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2,456,000</td>
</tr>
<tr>
<td>Coronary Heart Disease</td>
<td>1,878,000</td>
</tr>
<tr>
<td>Chronic Kidney Disease</td>
<td>1,855,000</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>1,667,000</td>
</tr>
<tr>
<td>Stroke or Transient Ischaemic Attacks</td>
<td>944,000</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmonary Disease</td>
<td>899,000</td>
</tr>
<tr>
<td>Cancer</td>
<td>876,000</td>
</tr>
<tr>
<td>Atrial Fibrillation</td>
<td>791,000</td>
</tr>
<tr>
<td>Mental Health</td>
<td>438,000</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>393,000</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>337,000</td>
</tr>
<tr>
<td>Dementia</td>
<td>267,000</td>
</tr>
</tbody>
</table>
2.1.3 Healthcare Challenges Associated with Long-Term Conditions

The World Health Organisation (WHO) considers the challenges associated with LTCs as a worldwide healthcare priority. In the UK, effectively managing the needs of patients with LTCs is currently a key area of focus for health policy. The treatment and management of patients with LTCs is complex as these patients usually require lifelong treatment which changes throughout the course of their illness. Moreover, patients with LTCs are commonly associated with multiple conditions which impact both their physical and mental wellbeing.

As a result, the management of patients with LTCs requires a multifaceted approach which involves: regular monitoring of condition(s), management of complex medicines dosing regimens, ensuring appropriate use of medications, and lifestyle education. There have been many proposed patient-centred models for effectively managing the needs of patients with LTCs. It is beyond the scope of this programme of research to address these proposed models of care. However, it is important to acknowledge that these models of care universally propose a multidisciplinary approach for the management of LTCs which involves better integration and collaboration between healthcare professionals from various healthcare sectors.

Patients with LTCs are the most intensive users of the most expensive healthcare services. Patients with LTCs account for 70% of the healthcare costs, 50% of all GP appointments, 64% of outpatient appointments and 70% of all in-patient bed days in the UK. In addition to using primary and secondary healthcare services, patients with LTCs are also intense users of social and community services. As patients with LTCs access a variety of healthcare resources, the average health cost for individuals with LTCs is much higher for those without a LTC. It is estimated that the average cost per year of treatment for a person without an LTC is £1000, £3000 for a person with a LTC and £8000 for those living with three or more LTCs. Due to an increasing aging population, this financial pressure on the NHS is expected to increase. The number of people in England with one or more LTCs is expected to rise to around 18 million in 2025. Furthermore, the number of people aged 85 and above is projected to rise to 3.5 million in 2034, which is 2.5 times larger than in 2009. With such future projections, the NHS is facing its greatest challenge to manage the needs for patients with LTCs.
2.2 Demand on Primary Care

2.2.1 General Practice Workload Pressures

Many healthcare activities have been shifted from hospitals towards primary care to manage the needs of patients with LTCs. Consequently, this has led to extensive workload pressures in general practice. Reports from the British Medical Association (BMA) surveys demonstrate that workload has been the main area of concern for GPs. Since the inception of the BMA quarterly survey for workload and wellbeing, the number of GPs to report working outside their regular hours has been steadily increasing. In addition, the BMA survey for GPs in England showed that only 1 in 10 GPs believed that their workload was manageable and 57% of GPs thought their workload was excessive which at times prevented them from providing quality and safe care to their patients.

Much of this GP workload involves activities related to the ongoing management of patients with LTCs such as patient consultations, screening and monitoring. In addition, the growing population of patients with LTCs has increased the amount of prescribing and repeat prescribing for GP practices. Whilst there is no standardised national dataset to detect and report GP activity, retrospective analysis from electronic GP systems demonstrates a considerable increase in GP activity. For example, data extracted from the Education Management Information System (EMIS) clinical information systems revealed a 14% increase in number of GP consultations between 2010/11 and 2014/15. Similarly, findings from a recent study identified a 10.5% increase in GP and nurse consultations from 2007 to 2014 with an average increase of 2.5% per year since 2007/8. Furthermore, direct GP contact with patients has increased by 15.2% between 2010/11 and 2014/15.

There has also been a trend between increasing GP workload pressures and declining patient satisfaction with their GP experience. The NHS national GP patient survey shows that whilst patient satisfaction with their overall GP practice experience remains high, patients are finding it more difficult to obtain GP appointments and their satisfaction with GP visits has been progressively declining since 2007. Moreover, results from the British Social Attitudes (BSA) survey shows that public satisfaction with GP services fell to 65% in 2017 (a 7% decline from 2016) which marked the lowest level of satisfaction with GP services since the survey began in 1983.
With the NHS facing financial constraints, much emphasis has been placed on developing new strategies to meet some of the needs for patients with LTCs and reduce GP workload pressures.\textsuperscript{2, 40, 41} Therefore, policymakers have focused on providing high quality, patient-centred and cost-effective care via alternative healthcare routes.\textsuperscript{2, 40-43} It has been documented that the constraints of the standard 10-minute GP appointment is insufficient to address the needs of patients with LTCs and at times considered unsafe.\textsuperscript{32, 44} The evidence also suggests that patients with LTCs are waiting too long for routine appointments at GP practice and the number of patients seeing the same/preferred GP is decreasing with time.\textsuperscript{32, 44} People with LTCs are commonly associated with complex medication regimens which raises challenges to ensure appropriate use of their medications.\textsuperscript{3} Thus, many GP appointments for patients with LTCs are centred on the use and management of medications which could be provided by other healthcare professionals such as nurses or pharmacists.\textsuperscript{28, 32} Similar to GPs, however, there are growing nursing workforce shortages across the UK.\textsuperscript{45} In addition, nurses do not have the same level of expertise in medicines use as pharmacists. One possibility therefore, is for more use to be made of community pharmacies. As relevant to the aims of this programme of research, the following sections will only discuss the potential to expand the role of community pharmacy and why community pharmacy is a suitable choice to meet some of the needs of patients with LTC and reduce GP workload pressures.

### 2.2.2 The Potential to Expand the Role of Community Pharmacy

Pharmacy is the third largest health profession in Great Britain with 54,418 registered pharmacists (based on the 2016/2017 pharmacy register analysis).\textsuperscript{46} Pharmacists are highly trained professionals who are well suited to adopt an expanded role in healthcare.\textsuperscript{9} In the UK, pharmacists obtain a Masters of Pharmacy (MPharm) degree over 4 years of university-based education which is followed by one year of pre-registration training in the workplace and a registration assessment.\textsuperscript{47} Pharmacists may also undergo a range of postgraduate courses to expand their skills and enhance their professional development.\textsuperscript{47} The accessibility of community pharmacies places pharmacists in a unique position to meet patients’ needs and reduce the number of GP appointments.\textsuperscript{8, 12} There are over 11,700 community pharmacies in England, varying in site from high streets, shopping centres, supermarkets, and health centres.\textsuperscript{48} Moreover, 89% of the population in England are estimated to have access to a community pharmacy within a 20 minute walk.\textsuperscript{49} Community
pharmacies are also the most accessible in areas of highest deprivation where people may not be able to access GP practices. In England, 438 million visits are made to community pharmacies per year for health related reasons, making it the most visited healthcare venue in comparison to any other healthcare setting. It is estimated that around 1.6 million daily visits are made to community pharmacies, 1.2 million of which are for health related reasons.

The literature suggests that there is untapped potential in the role of community pharmacy in facilitating care for people with LTCs. Regarded as medication experts, pharmacists could play a central role in enhancing the use of medications for patients with LTCs and alleviating GP workload pressures. Enhancing the use of medications for patients with LTCs has the potential to reduce the significant costs associated with inappropriate use of medicines. It is estimated that 30-50% of medicines which are prescribed for patients with LTCs are taken incorrectly (i.e. non adherence) and that around £500 million could be generated by optimising the use of medicines in the following five areas: asthma, diabetes, hypertension, cardiovascular diseases and schizophrenia. The available evidence suggests that the perceived role of community pharmacists in providing self-care support involves opportunistically providing patients with information and advice. As the regular point of contact for many patients, community pharmacists could be more actively involved in providing advice and information for patients with LTCs. Moreover, community pharmacists are well positioned to detect if patients with LTCs require signposting/referral to an appropriate healthcare provider. However, research exploring the scope of community pharmacy in the management of patients with LTCs has been mainly medicines focused and there is limited research exploring other potential roles in this area. For instance, it has been argued that with further training and education, there could be scope for community pharmacists to provide more clinical services such as physical examinations for patients with LTCs. However, developing efficient training/educational systems to ensure community pharmacists are competent to perform clinical skills remains relatively unexplored and is beyond the scope of this thesis.

Despite the potential to enhance patient care, reduce GP workload and reduce financial costs to the NHS, pharmacists in the community pharmacy sector have mainly undertaken a role which is confined to medication supply. In addition, community pharmacists operate as isolated healthcare professionals working separately from the rest of the healthcare workforce. Recognising the potential to make better use of community pharmacy to support
people with LTCS and reduce some of the workload pressures on GP practice,\textsuperscript{12, 22, 31} policymakers worldwide have made many reforms to expand the scope of community pharmacy.\textsuperscript{9-12, 50}

2.3 The Evolution of Community Pharmacy in the United Kingdom

Community pharmacy in the UK has undergone much development throughout its history and continues to evolve. This programme of research mainly focuses on community pharmacy services following the revised contract in 2005 (see Section 2.4). However, it is important to summarise the historical context of community pharmacies in the UK preceding the revised community pharmacy contract.

During the 1930s, prior to the development of the NHS, community pharmacists spent the majority of their time providing health information to patients alongside compounding and selling medications.\textsuperscript{58} During this period, community pharmacists’ knowledge, skills and expertise were widely recognised by the public as they were in direct contact with patients.\textsuperscript{58} In 1948, the establishment of the NHS, followed by the introduction of many new drugs led to a drastic rise in dispensing volumes for community pharmacies.\textsuperscript{59} The number of prescriptions dispensed went from 65 million in 1937 to approximately 259 million prescriptions in 1950.\textsuperscript{58} Throughout this period, pharmacists mainly focused on dispensing of medications as the rapid increase in dispensing volume generated significant revenue.\textsuperscript{58} As a result, pharmacists spent less time dealing with patient concerns and became mainly known as dispensers.\textsuperscript{58} By the end of the 1970s, there was scepticism regarding the healthcare role of community pharmacists. In 1981, at the British Pharmaceutical Conference, the Conservative party’s minister for health Dr Gerard Vaughan claimed he did not envision a future for community pharmacy.\textsuperscript{59}

\textit{“One knew there was a future for hospital pharmacists, one knew there was a future for industrial pharmacists, but one was not sure that one knew the future for the general practice [community] pharmacist” Dr Gerrard Vaughan.}\textsuperscript{59}

In response to this ministerial statement, many pharmacy committees worked in partnership to redefine the healthcare role of community pharmacy.\textsuperscript{58, 60} This led to a series of pilot schemes which explored the role of community pharmacies as sources of health information.\textsuperscript{58, 60} One of the most notable schemes developed by the National Pharmacy
Association (NPA) was the ‘Ask Your Pharmacist’ campaign in 1982, which promoted pharmacists’ roles as experts in medicines.60

Following this series of pilot schemes, the Nuffield Report was produced in 1986. The Nuffield Report made 96 recommendations for the pharmacy profession, 26 of which were related to community pharmacy.61, 62 One of the highlighting features of this report was the emphasis to expand the scope of community pharmacy beyond medication supply and advice.58, 62 Thus, in the years that followed, community pharmacies gradually became more active in public health activities.58 Community pharmacy involvement in public health mainly focused on smoking cessation, sexual health, advice on drinking and education on illicit drug use.63 Despite these advancements, up until 2005, there was no formal recognition for services beyond medicines supply as pharmacists were almost entirely remunerated based on the number of items they dispensed.64

2.4 The New Community Pharmacy Contractual Framework

In Great Britain, the Community Pharmacy Contractual Framework (CPCF) outlines all of the services which are provided by community pharmacies. The CPCF provides the specifications, aims and intended outcomes for services provided by community pharmacies. Each country in Great Britain (England, Wales and Scotland) has its own CPCF which is developed and outlined by their own respective organisations. The services outlined in the CPCF are negotiated and agreed upon by representative bodies for community pharmacies, the government and the NHS.

To reflect on the vision of expanding community pharmacy services, the CPCF was revised in England and Wales in 2005, and in Scotland in 2006. These revised contractual frameworks introduced novel “extended services” which involve: clinical, medicines review and public health services. The prominent feature of these revised contracts was the ‘fee for service’ reimbursement model which remunerated community pharmacies for providing services beyond traditional supply function (i.e. extended services).64

Since the revision of the CPCF in 2005, there have been gradual developments which saw the introduction of more novel services as well as changes to remuneration, commissioning and provision of some existing services. This programme of research focuses on the current CPCF in England but will highlight the important/relevant changes which were made since
the initial revision of the CPCF. Figure 2-1 provides the services under the current NHS England CPCF which consists of three service categories: “essential”, “advanced” and “locally commissioned”. 64

**Figure 2-1**: Current NHS England Community Pharmacy Contractual Framework

- Dispensing medicines
- Dispensing appliances
- Repeat dispensing
- Public health (promotion of healthy lifestyles)
- Disposal of unwanted medications
- Signposting
- Support for self-care

- Medicines Use Reviews
- New Medicine Service
- Appliance Use Reviews
- Flu vaccination
- Stoma Appliance Customisation
- NHS Urgent Medicine Supply Advanced Service

A wide range of services commissioned according to local needs. These include but are not limited to:
- Minor ailments management
- Palliative care services
- Care home services
- Out of hours services
- Sexual health services
- Smoking cessation services
- NHS Health Check
- Weight management services
- Alcohol misuse services
2.4.1 Essential Services

“Essential services” are customary pharmacy services which must be provided by all community pharmacies. These services include dispensing medications/appliances, repeat dispensing, signposting patients to appropriate healthcare providers and promoting healthy lifestyles. The repeat dispensing scheme was introduced in 2002 and became an essential service in 2005, in order to manage patients’ repeat prescriptions more efficiently. Repeat dispensing is particularly relevant to patients who are on regularly prescribed medications (i.e. patients with LTCs) as it permits patients to get repeat prescriptions dispensed from their community pharmacy without having to visit their GP practice each time. Patient groups suitable for repeat dispensing includes, but is not limited to: patients on stable therapy; patients with long term conditions; patients on multiple therapies; patients that can appropriately self-manage seasonal conditions.

Essential services are nationally commissioned by the NHS England where community pharmacies are reimbursed by a dispensing fee per item. Pharmacy contractors currently receive a fee of 126p for every item dispensed including medicines and appliances.

2.4.2 Advanced Services

“Advanced services” comprise of medicines review services and more recently flu vaccinations and urgent medicines supply. Advanced services are nationally commissioned by NHS England. Unlike essential services, it is not mandatory for community pharmacies to provide advanced services. However, to encourage pharmacies to provided advanced services, reimbursement for dispensing was top-sliced in 2005 to allocate some of the funds for remuneration of advanced services. Community pharmacies can choose to provide these services given they meet certain requirements and have pharmacists who successfully completed certain assessments to provide these services. As part of these requirements, community pharmacy premises are subject to meet certain standards to ensure advanced services are conducted in a confidential environment (see Section 2.4.4).

2.4.2.1 Medicines Use Review

The Medicines Use Review (MUR) was the first advanced service to be introduced in 2005. The MUR involves a patient-pharmacist consultation which intends to improve patient’s understanding of their medications. MURs aim to enhance medication adherence for
patients, reduce medicine wastage and improve the clinical and cost effectiveness of prescribed medicines.\textsuperscript{69,70}

Pharmacists providing MURs must have satisfactorily completed an assessment set by a higher education institution (HEI) based on a national competency framework.\textsuperscript{71,72} MURs could be provided either at the community pharmacy or at another confidential area given these premises meet required standards. MURs could also be provided to patients over the phone on particular occasions if necessary. Community pharmacies are currently reimbursed £28 for provision of a MUR and a maximum of 400 MURs could be provided at each community pharmacy per year.\textsuperscript{69}

Since 2005, there have been a number of policy changes to enhance the use of MURs following evidence that MURs were not always targeting patients who would benefit most from the service.\textsuperscript{73,74} In 2011, it became mandatory for at least 50\% of all MURs undertaken within a year to be delivered to patients that fell within any of the three national target groups.\textsuperscript{75} These target groups include: patients taking high risk medicines, patients recently discharged from hospital, and patients prescribed certain respiratory medicines. In 2015, a fourth target group was added which includes “patients with risk of cardiovascular disease” (see Table 2-2). Since 2015, community pharmacies are required to conduct at least 70\% of their MURs within any given financial year for patients which fall under at least one of the four target groups.\textsuperscript{75}
<table>
<thead>
<tr>
<th>National target groups</th>
<th>Number of medications patient is taking</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| High risk medications           | At least one medicine                  | One of the patient’s prescribed medicines or the patient’s only prescribed medicine is listed in one of the following British National Formulary (BNF) chapter/sub-sections:  
|                                 |                                        | • Diuretics  
|                                 |                                        | • Anticoagulants (including low molecular weight heparin)  
|                                 |                                        | • Antiplatelets  
|                                 |                                        | • Nonsteroidal anti-inflammatory drugs (NSAIDs)  
| Patients with respiratory disease (asthma and COPD) | Two or more medicines                  | One of the patient’s prescribed medicines is listed in the following BNF chapter/sub-sections:  
| Post-discharge                  | Two or more medicines                  | Patient discharged from hospital within the previous eight weeks **AND** has had changes to the medicines they are taking while in hospital (MUR should ideally be offered within four weeks of discharge).  
| Cardiovascular risk             | Four or more medicines                 | At least one of the patient’s regularly prescribed medicines is listed in the following BNF chapter/sub-sections:  
|                                 |                                        | • Cardiovascular System  
|                                 |                                        | • Drugs used in Diabetes  
|                                 |                                        | • Thyroid and Anti-thyroid Drugs |
2.4.2.2 New Medicine Service

The New Medicine Service (NMS) is the more recent medicines review service which was introduced in 2011. The NMS focuses on improving patient adherence to newly prescribed medications. The NMS involves three stages which are: patient engagement, intervention, and follow up. At the patient engagement stage, patients are recruited to the service and given a future appointment either through prescriber referral or opportunistically by the community pharmacy. During the intervention stage, the NMS consultation takes place between the pharmacist and patient during which they both mutually agree on follow up date, usually about 14 to 21 days after the intervention stage. At the follow up stage, the pharmacist reinforces and reviews issues which were discussed with the patient at the intervention stage.

The NMS targets the following patient groups and conditions: (1) respiratory conditions, (2) type 2 diabetes, (3) hypertension and (4) patients prescribed antiplatelet/anticoagulant therapy. There is a specific list of medications for each of the patient groups which are covered by the NMS. Patients are eligible to receive an NMS if they have been recently prescribed one of the medications covered by the NMS.

Pharmacists are required to have successfully completed their MUR assessment to provide the NMS. In addition, pharmacists must complete and sign an NMS self-assessment of readiness form to ensure they have reflected upon the skills and knowledge necessary to provide the NMS. The sum community pharmacies earn for each completed NMS varies between £20 and £28 depending on the total number of NMS interventions completed per month and whether they achieve target payment levels. Target payment levels are based on the volume of prescriptions dispensed each month by the pharmacy.

2.4.2.3 Flu Vaccinations

Since 2015, flu vaccinations can be offered by community pharmacies to specific patient groups (see Table 2-3). Pharmacists have to successfully complete a Declaration of Competence (DoC) to offer flu vaccinations. The DoC system is a self-assessment framework which provides pharmacy professionals with the relevant resources to demonstrate and declare that they are competent to provide a specific pharmacy service. Following the provision of a flu vaccination, the patient’s GP practice must be notified by the community pharmacy on the same or following working day.
Prior to 2015, flu vaccinations were only locally commissioned. However, flu vaccinations became nationally commissioned as patients demonstrated high satisfaction with many of the locally commissioned flu vaccinations schemes.\textsuperscript{82, 83} Community pharmacies are currently paid a total sum of £9.48 per dose of vaccine administered. This sum accounts for the dose of vaccine as well as expenses for providing the service such as training and disposal of clinical waste.\textsuperscript{82}

**Table 2-3: Flu vaccination eligible patient groups**

<table>
<thead>
<tr>
<th>Flu vaccination eligible patient groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All people aged 65 years and over</td>
</tr>
<tr>
<td>• People aged from 18 to less than 65 years of age with one or more of the following medical conditions:</td>
</tr>
<tr>
<td>i) chronic (long-term) respiratory disease, such as severe asthma, chronic obstructive pulmonary disease (COPD) or bronchitis</td>
</tr>
<tr>
<td>ii) chronic heart disease, such as heart failure</td>
</tr>
<tr>
<td>iii) chronic kidney disease at stage three, four or five</td>
</tr>
<tr>
<td>iv) chronic liver disease</td>
</tr>
<tr>
<td>v) chronic neurological disease, such as Parkinson’s disease or motor neurone disease, or learning disability</td>
</tr>
<tr>
<td>vi) diabetes</td>
</tr>
<tr>
<td>vii) immunosuppression, a weakened immune system due to disease (such as HIV/AIDS) or treatment (such as cancer treatment)</td>
</tr>
<tr>
<td>viii) asplenia or splenic dysfunction</td>
</tr>
<tr>
<td>ix) morbid obesity</td>
</tr>
<tr>
<td>• Pregnant women aged 18 or over (including those women who become pregnant during the flu season)</td>
</tr>
<tr>
<td>• People aged 18 or over living in long-stay residential care homes or other long-stay care facilities</td>
</tr>
<tr>
<td>• Social care workers</td>
</tr>
<tr>
<td>• Hospice workers</td>
</tr>
<tr>
<td>• Carers aged 18 or over</td>
</tr>
<tr>
<td>• Household contacts of immunocompromised individuals who are aged 18 or over</td>
</tr>
</tbody>
</table>
2.4.2.4 NHS Urgent Medicines Supply Service

The NHS Urgent Medicines Supply Service (NUMSAS) is an advanced service which involves community pharmacies receiving referrals via NHS 111 or an Integrated Urgent Care Clinical Assessment Service (IUC CAS) centre. NUMSAS was introduced in December 2016 with the aim to reduce pressure on urgent and emergency care services. This service offers out of hours access to medicines or appliances for patients who require urgent access to a prescribed medication or appliance that they have been previously prescribed. Community pharmacies are reimbursed £12.50 for any referral received from NHS 111 regardless if any medication is supplied to the patient. Pharmacies also receive £1.50 for supplying the first item and £0.50 for each additional item supplied.

2.4.3 Locally Commissioned Services

Locally commissioned services are other medication and public health services which can be commissioned according to local need. These services can be contracted through different commissioners such as local authorities, clinical commissioning groups (CCGs) and local NHS England teams. Some of these locally commissioned services include minor ailments management (i.e. assessment and management of minor ailments by pharmacists), medicines optimisation services (e.g. inhaler technique services), sexual health services, healthy lifestyle promotion (e.g. weight management, alcohol advice, smoking cessation) and NHS Health checks (e.g. blood pressure checks, cholesterol tests). The service specifications and payments for locally commissioned services vary depending on the area where it is commissioned.

2.4.4 System Changes to Support New Community Pharmacy Services

Since the revision of the CPCF, there have been developments to support the provision of extended community pharmacy services. In 2005, consultation rooms became mandatory to provide advanced services and subject to certain requirements to ensure patient privacy and confidentiality. These requirements involve consultation rooms being distinct from general areas of the pharmacy and clearly designated as areas for private consultations. Moreover, consultation rooms must be areas where patients and pharmacists could sit down together and talk at normal speaking volumes without being overheard by other staff or customers.
In 2009, repeat dispensing became available electronically via an electronic prescription service which sends electronic prescriptions from GP surgeries to pharmacies. Electronic repeat dispensing (eRD) offers patients the option (following consent) to obtain repeated prescriptions (for up to 12 months) from their nominated pharmacy without the need for their prescriber to sign authorised prescriptions each time. Electronic repeat dispensing provides an efficient prescribing and dispensing process which aims to: reduce patient contact with the GP surgery for repeat prescriptions; reduce GP workload in resigning repeat prescription requests; enable pharmacists to plan and manage prescription workload; and facilitate collaboration between pharmacies and GP practices.

Another step towards improving the efficiency and safe delivery of pharmacy services was implementation of the NHS summary care record (SCR) in 2016, which permits a range of health-care professionals, including pharmacists and pharmacy technicians, to access core clinical and medication information, with the patient's consent. The SCR intends to improve communication and information flow between patients and their healthcare providers. Currently, the SCR provides read-only access to allergies, adverse reactions and medication history unless the patient chooses to include additional information.

2.4.5 Revised Contracts in Other UK Countries

This programme of research mainly focuses on community pharmacy services in England. Nonetheless, it is important to acknowledge that Wales, Scotland and Northern Ireland offer very similar community pharmacy services to England. For instance, Wales and Northern Ireland also offer MUR services. In addition, Wales also offers the Discharge Medicines Review (DMR) which focuses on enhancing medication adherence for patients who have recently been discharged from care settings. The DMR aims to ensure that any changes to a patient’s medication is followed up when they transition from one care setting to another.

In Scotland, the main medicines review service is the Chronic Medication Service (CMS) which differs somewhat from the MUR. The CMS involves a three step process which encourages collaboration between community pharmacists and GPs. Initially, patients with LTCs register with a community pharmacy of their choice for the service. Following registration, pharmacists provide patients with a medication consultation and develop personalised pharmaceutical care plans for these patients. Lastly, these personalised care
plans are sent to patients’ GPs who produce a serial prescription to be dispensed at an interval indicated by the GP.\textsuperscript{96} In addition to these medicines review services, community pharmacy in Scotland, Wales and Northern Ireland also provide a range of public health and locally commissioned services similar to England.\textsuperscript{10, 91, 92}

\section*{2.5 The Pharmacy Integration Fund}

The Pharmacy Integration Fund (PhIF) was set up in 2016 to facilitate the expanding role of pharmacists and pharmacy technicians.\textsuperscript{97, 98} The PhIF is overseen by an NHS England Pharmacy Integration Oversight Group which is represented by a range of different stakeholders but does not currently include representation from the community pharmacy sector. The PhIF mainly focuses on facilitating use of community pharmacy, pharmacists and pharmacy technicians via integrated local care models which involve a range of health and social care professionals working together to optimise patient care.\textsuperscript{97, 98}

Prior to the development of the PhIF, a national scheme was initiated by NHS England which aimed to enhance collaborative working between pharmacists and GP practices by introducing more than 450 clinical pharmacists across 650 general practices.\textsuperscript{99} This scheme intends to introduce a further 1,500 clinical pharmacists to work in general practice by 2020. At the time of this programme of research, key areas for the PhIF involve supporting the clinical pharmacists in general practice scheme along with integrating community pharmacy/pharmacists in urgent care and care home settings are.\textsuperscript{98}

\section*{2.6 International Community Pharmacy Advancements}

Internationally, there have been comparable community pharmacy advancements in Australia, New Zealand, USA, and Canada.\textsuperscript{9-11} Similar to the UK, community pharmacy services in Australia and New Zealand are funded via contractual agreements which are agreed upon between professional pharmacy organisations and the government.\textsuperscript{100, 101} In the United States (US), extended community pharmacy services are mainly provided under a federal government programme called the “Medicare prescription drug benefit” (Medicare part D), which was implemented in 2006.\textsuperscript{102} Whereas in Canada, the scope of extended community pharmacy services varies as each province is under provisional jurisdiction and therefore subject to its own reimbursement model.\textsuperscript{103} Despite differences in organisational
and administrative contexts, these countries implemented novel reimbursement structures for a range of medicines-related, clinical and public health services.\textsuperscript{9, 10, 19}

Comparable to the MUR, the main medicines review program in Australia and Canada is the MedsCheck service which offers patients with LTCs a one-on-one medication consultation with a community pharmacist.\textsuperscript{104, 105} To ensure timely access for patients with diabetes, there is also a specific diabetes MedsCheck service in Australia and Canada.\textsuperscript{103, 104} Moreover, community pharmacies in Australia provide Home Medicines Reviews (HMR), where pharmacists via a doctors’ referral, provide patients with medication reviews in their own homes.\textsuperscript{106} There are also rural support programs to enhance accessibility to extended services for patients in remote and rural areas in Australia.\textsuperscript{107} At the time of this programme of research, there are plans to further expand community pharmacy services in Australia through the Pharmacy Trial Program (PTP). The PTP will pilot a series of novel community pharmacy services for patients in remote/rural areas and is subject to evaluation by the Australian government.\textsuperscript{108}

In New Zealand, the main service for patients with LTCs is the “Long Term Conditions” service. The LTC service involves a series of interrelated pharmacist interventions which aim to improve patients’ self-management and adherence of their medications.\textsuperscript{109, 110} Initially, pharmacists are required to assess if a patient is eligible for the service through the use of a service eligibility tool. If a patient is eligible, the pharmacist forms a personalised medicines management plan based on issues identified from the initial assessment. Depending on individual patient needs, the medicines management plan may include: adherence advice, medication reconciliation/synchronisation and the pharmacist discussing the patient’s medicines management plan with the wider healthcare team. Upon developing the medication management plan, the pharmacist is required to review it with their patients at least once annually.\textsuperscript{110}

In the US, the Medication Therapy Management (MTM) model includes a variety of pharmacist interventions directed at improving medication adherence for patients with LTCs.\textsuperscript{102, 111} In the main, MTM interventions require pharmacists to identify and prioritize patients’ medication-related problems and form a medication management plan to resolve them. Similar to the UK, community pharmacies in Australia, Canada, New Zealand and USA also offer public health services relevant to patients with LTCs such as influenza
vaccinations, smoking cessation services, travel health, minor ailments assessment, pharmacist prescribing and other locally commissioned services.\textsuperscript{11, 101, 103, 109}

\textbf{2.7 Awareness, Demand and Use of Community Pharmacy Services}

Evaluating the contribution of extended community pharmacy services to healthcare has been a key area for policymakers worldwide.\textsuperscript{9, 11, 19} In the UK, the evidence for some of these extended services has shown positive clinical outcomes such as increased patient adherence to medications, better control of patients’ conditions and improved quality of life.\textsuperscript{13-15} Moreover, patients accessing extended community pharmacy services report high levels of satisfaction.\textsuperscript{112} Recent economic evaluations have also demonstrated the potential for some of these community pharmacy services to reduce costs to the healthcare system.\textsuperscript{113-115}

In relation to advanced services, self-report studies evaluating advanced services show that patients who accessed an MUR or NMS service reported greater adherence and high satisfaction with the service they received.\textsuperscript{116, 117} Moreover, two systematic reviews which covered medication review services similar to the MUR found that these interventions improved patients’ understanding of their medications.\textsuperscript{118, 119} However, evidence on cost or clinical effectiveness of MURs to date has been limited.\textsuperscript{8, 57, 120} On the other hand, a recent randomized controlled trial identified that the NMS increased patient medicine adherence when compared to normal practice for a reduced overall cost to the NHS.\textsuperscript{57, 113} Studies on influenza vaccination services provided by community pharmacies have also shown positive outcomes such as increased patient uptake, choice and high acceptability with the service.\textsuperscript{121, 122}

Existing evidence on the effectiveness of minor ailments services provided by community pharmacy suggests they could reduce GP consultations and potentially offer savings to the NHS.\textsuperscript{123} Furthermore, findings from a cohort study reported that pharmacies offering minor ailments provide similar health-related outcomes and lower costs for patients in comparison to emergency departments and GP practices.\textsuperscript{124} As for healthy lifestyle services, a recent systematic review reported that community pharmacy-delivered interventions for weight management and smoking cessation services are as effective as other primary care settings.\textsuperscript{125} In addition, economic evaluations suggest that smoking cessation via community pharmacies is cost-effective however; the cost-effectiveness of delivering weight management services via community pharmacies is inconclusive.\textsuperscript{125}
Overall, there is growing evidence demonstrating the positive impact of extended community pharmacy services on patient outcomes and primary care. However, the quality of some evidence regarding community pharmacy services has been questionable. For instance, many studies have used less tangible or difficult-to-measure outcomes for assessment such as patient satisfaction and quality of life. Furthermore, some studies do not have a control group and measured clinical outcomes which may be confounded by other factors and therefore not directly linked to the community pharmacy service evaluation (e.g. blood pressure, HDL cholesterol and quality-adjusted life-year). Due to lack of studies which provide a clear indication on the impact of community pharmacy services, there has been scepticism around the potential benefit current community pharmacy services offer to patients and the wider healthcare team. Consequently, it is important to ensure better uptake of services that may be of value to patients with LTCs. Whilst the quality of evidence on existing community pharmacy services has been variable, evidence for the benefits of services such as medication consultations, medicines reconciliations, influenza vaccinations, minor ailments and healthy lifestyle services (e.g. smoking cessation) are more well-established. Hence, throughout this PhD thesis, better uptake of community pharmacy services will be referring to services similar to those mentioned above.

Another important issue has been difficulties with designing and implementing community pharmacy services/interventions that may offer value to patients with LTCs. Some of the existing problems encountered have been that patients with LTCs do not necessarily perceive any benefit from using community pharmacy for their condition(s) as other healthcare professionals (i.e. GPs and nurses) provide similar services. In addition, patients with LTCs are doubtful towards community pharmacists’ competence to provide services for LTCs with concerns over their lack of skills and knowledge. Patients have also shown concerns regarding the amount of privacy available at community pharmacy to offer services for LTCs above and beyond medication supply. Despite the literature highlighting these problems, there has been limited research on how to improve the design and implementation of existing and/or future community pharmacy services to ensure they offer more value for patients with LTCs. Therefore, this thesis also focused on making recommendations on how to improve the design and implementation of community pharmacy services for patients with LTCs.

In addition, patient awareness, demand and uptake for some of these extended services has historically been shown to be low. An international review assessing uptake and
patient outcomes of remunerated pharmacy services (up to 2012) identified slow uptake despite improved clinical and financial outcomes.\textsuperscript{11} In addition, two reviews which covered patient/public views on public health services reinforced low awareness of community pharmacy services beyond traditional medication supply.\textsuperscript{19, 129} Decommissioning of locally commissioned services also suggests that low awareness and uptake of extended community pharmacy has been a problem in the past.\textsuperscript{8, 15}

Moreover, despite these extended services aiming to relieve pressure on GPs and reduce their workload, GPs have demonstrated reluctance to support extended community pharmacy services due to concerns about pharmacists’ lack of competence and commercial conflicts of interest.\textsuperscript{20, 130-132} For instance, lack of GP support and collaboration with pharmacists was identified as a barrier for provision of services such as MURs and NMS, soon after their introduction.\textsuperscript{18, 57, 133} Community pharmacists have also highlighted limited opportunities to provide extended services due to the retail context of community pharmacies.\textsuperscript{64, 134, 135} Such challenges are also encountered worldwide which indicate important issues concerning the implementation and delivery of extended community pharmacy services within primary care.\textsuperscript{9, 11, 136}

In light of recent UK policy drives which plan to further extend community pharmacy services,\textsuperscript{21, 22} it is important to identify how awareness, demand and utilization of community pharmacy services that may benefit patients with LTCs could be enhanced within the primary care pathway. The primary care pathway for patients with LTCs is the healthcare route these patients take for ongoing treatment and management of their conditions.\textsuperscript{4, 27} Issues concerning better awareness, demand and use of community pharmacy services could be explored from the perspectives of key stakeholders (i.e. patients, pharmacists and other healthcare providers) who are involved with, and/or affected by the use of community pharmacy services within the primary care pathway.\textsuperscript{136, 137}

Patients with LTCs present to GPs with medication and non-medication related needs for which current extended community pharmacy services either already exist or could be designed such as medication reviews, health checks and public health services.\textsuperscript{138-142} Thus, this population could benefit from making better use of community pharmacies within their primary care pathway, particularly in light of accessibility and workload pressures in GP practice.
GPs’ support for community pharmacy services is also essential as they are chiefly responsible for the treatment of patients within the primary care pathway.\textsuperscript{132} Therefore, GPs have the potential to strongly influence patients’ use of community pharmacy services within the primary care pathway. Similarly, owing to their position as service providers, pharmacists play a major role in enhancing the provision and quality of community pharmacy services.\textsuperscript{19, 130} However, pharmacists themselves have shown unwillingness to perform services beyond traditional medicine supply with the concerns that balancing dispensing duties with extended services is complex and challenging.\textsuperscript{19, 20, 52, 130} Therefore, understanding the expectations, needs and preferences of patients, pharmacists and GPs regarding the use of community pharmacy services is an important step towards achieving better recognition and integration of pharmacy services within the patients’ primary care pathway. This programme of research intends to explore the perspectives of patients, GPs and pharmacists on the awareness, demand and use of community pharmacy services for patients with LTCs with a view to better integrate community pharmacy services into the patient pathway and reduce GP workload pressures.
Key points from this chapter

- The increasing population of patients with LTCs provide the greatest challenges for healthcare providers as the treatment and management of these patients is complex and requires use of many healthcare resources.

- GP practices are facing extensive staff shortages and workload pressures to meet the increasing demands of patients with LTCs.

- Expanding the role of community pharmacy has the potential to meet some of the demands of patients with LTCs and reduce GP workload.

- To manage some of the demands of patients with LTCs, policymakers have made many reforms to expand the scope of community pharmacy by introducing novel “extended services” which involve: clinical, medicines review and public health services.

- Whilst evidence has demonstrated positive outcomes from these extended community pharmacy services, patient awareness, demand and uptake of these services in the past has been low.

- This PhD intends to shed light on this problem of low awareness, demand and use of community pharmacy services for patients with LTCs.
Chapter Three - Overview of Programme of Research

Chapter Guide:

This chapter provides the rationale for the thesis format and outlines the aims, objectives and structure of the programme of research.

3.1 Rationale for Submitting Thesis in Journal Format

The journal format thesis has been chosen for this thesis structure, as it divides the empirical work into separate sections which are written in a format similar to a manuscript submitted for publication. This format is considered appropriate to the thesis structure, as the programme of research involved a series of separate but closely related studies, where findings from each study informed the design for the subsequent study. In addition, the author intended to submit his research to peer-reviewed journals from the outset of his PhD to disseminate his research work in a timely manner and enhance his experience in writing papers in journal format. To date, three papers have already been published and a final one is currently under review.

3.2 Aims and Objectives

The overall aim of this programme of research was to explore and identify ways to improve awareness, demand and use of community pharmacy services which may benefit patients with LTCs.

The objectives for this programme of research are as follows:

- To explore the recent research literature pertaining to patients’, pharmacists’ and GPs’ perspectives of community pharmacies and extended pharmacist roles in the UK.

- To identify how community pharmacy services may be better used and integrated within the primary care pathway for people with LTCs.
• To identify which factors would most influence people with LTCs to make better use of community pharmacy services within the primary care pathway.

• To make recommendations for enhancing awareness, demand and use of community pharmacy services that may be of value for patients with LTCs within the primary care pathway.

3.3 Structure of Programme of Research

The programme of research commenced with two systematic reviews of the literature to provide up to date evidence and inform the approach for the empirical work (Study One). The first systematic review explored patient and public perspectives of: existing community pharmacy services, extended pharmacist roles and strategies to raise awareness of community pharmacy services (Chapter Five). Thirty-four studies were included in the review and subjected to thematic synthesis. This systematic review confirmed that, apart from the traditional medicines supply function, patients and the public still had low awareness of other services and that successful integration of extended pharmacy services requires pharmacists’ clinical skills to be recognised by patients and GPs.

The second systematic review investigated pharmacists’ and GPs’ views of extended community pharmacy services and expanded pharmacist roles (Chapter Six). Sixty studies were included in the review and subjected to thematic synthesis. This systematic review established that pharmacists and GPs perceived a number of barriers to successful implementation and integration of pharmacy services despite the introduction of extended services. Moreover, collaboration between pharmacists and GPs was poor despite the introduction of extended services.

Important gaps in the literature were identified in both systematic reviews which informed the approach for Study Two. First, despite GP practices being central to the patients’ primary care pathway and having the potential to strongly influence the use of community pharmacy services, there was a paucity of research exploring GPs views of community pharmacy services. Moreover, none of the previous studies consider the influence that GP practices have on patients accessing community pharmacy services nor do they explore GPs’ expectations of community pharmacy services in relation to services they deliver themselves.
Second, many of the previous studies focused on specific community pharmacy services, rather than the need and general awareness of extended community pharmacy services. Third, whilst previous studies reinforced low awareness, demand and uptake of extended community pharmacy services, they did not further explore how services which may benefit patients with LTCs could overcome such problems and achieve better usage within the primary care pathway for patients. It was evident that the limited scopes of these analyses do not comprehensively cover/address issues related to enhancing awareness, utilisation and integration of community pharmacies within primary care.

Therefore, an important consideration for Study Two was to explore the views of key stakeholders within the primary care pathway using a framework which accounts for the organisational and environmental factors in primary care settings. Accounting for these factors was necessary to cover a broad range of concepts thus permitting a comprehensive analysis of how community pharmacy services may be better utilised and integrated within the patients’ primary care pathway.

**Study Two** was a qualitative focus group study which used marketing theory to examine the views of patients, pharmacists and GPs on how community pharmacies are currently used, and to identify how community pharmacy services may be better integrated within the primary care pathway for people with LTCs (Chapter Seven). The “7Ps marketing mix” theory was used to frame study design, data collection and analysis. A total of eight focus groups were conducted to explore the views of patients with LTCs, pharmacists and GPs. Two focus groups were conducted with patients who had respiratory conditions (n=6, 5) and two with patients suffering from type 2 diabetes (both n=5). Two focus groups were held with community pharmacists (n=7, 5) and two with GPs (both n=5).

Findings for Study Two highlighted a number of key areas which could increase patients’ and GPs’ awareness of and demand for community pharmacy services, thus relieving some of the burden on general practice. These areas were centred on: using community pharmacies for routine services for patients with well managed LTCs, enhancing collaboration between community pharmacies and GP practices, improving the consistency and quality of community pharmacy services, and strategically promoting community pharmacy services.
Study Three intended to build on findings from Study Two by evaluating and quantifying the extent to which key areas identified from the 7Ps marketing mix could influence better use of community pharmacy and positively impact outcomes for patients with LTCs (Chapter Eight). This study took a quantitative approach to provide more generalizable findings thus further extending the scope of this programme of research. The study design was a cross-sectional questionnaire informed by Study Two. Due to limited time and resources, it was not possible to explore the views of all three stakeholders (patients, pharmacists, GPs). Thus, Study Three involved patients with LTCs as this programme of research was centered on enhancing patients’ use of community pharmacy services within the primary care pathway.

Lastly, this thesis concludes with a discussion of overall findings of the programme of research (Chapter Nine). The discussion integrates findings from all three studies and highlights implications for policy and practice in relation to enhancing the awareness, demand and use of community pharmacy services for patients with LTCs. The author also suggests areas for further research in the discussion.

Key points from this chapter

- This thesis structure distributes the empirical work into separate sections which are written in the form of a published paper or manuscript submitted for publication.

- The overall aim of this programme of research was to explore and identify ways to improve low awareness, demand and uptake for community pharmacy services for patients with LTCs.

- Three separate but closely related sequential studies were conducted to meet the aim of this programme of research (Study One: systematic reviews→ Study Two: qualitative focus group study→ Study Three: quantitative survey study).
Chapter Four - Methods

Chapter Guide:

This chapter describes the theoretical concepts and methodological approaches underpinning this programme of research. This chapter discusses the methods used for each study and the rationale for choosing these methods. This chapter also notes the ethical considerations and approvals which were required for the conducted studies.

4.1 Study One: Method

Study One consisted of two systematic reviews (Chapter Five & Chapter Six). As defined by the Cochrane handbook, “a systematic review attempts to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question”. Systematic reviews aim to minimise bias by using explicit structured methods to review the literature therefore producing more reliable findings as well as conclusions. Hence, systematic reviews can be used as rigorous research tools to identify research gaps and inform the approach for a programme of research.

The first systematic review explored patient and public perspectives of: existing community pharmacy services, extended pharmacist roles and strategies to raise awareness of community pharmacy services (Chapter Five). The second systematic review investigated pharmacist and GP views of extended community pharmacy services and pharmacists’ roles (Chapter Six). The development and reporting of both reviews followed the key steps for systematic reviews highlighted by Petticrew and Roberts. These steps involved: defining the research question; writing a plan for the systematic review and having it reviewed; constructing and implementing a search strategy; screening the references identified, assessing studies against the inclusion/exclusion criteria; extracting data; critically appraising studies included in the review; synthesising findings; considering bias introduced by studies; writing the report; interpreting findings and drawing conclusions for a wider audience.
4.1.1 Study One: Literature Search Strategy

A few important decisions were made by the author which informed the scope of both systematic reviews. First, the author searched for literature beginning from 2005 onwards as this timeframe represents the initiation of the revised pharmacy contract in the UK which introduced novel pharmacy services and advanced pharmacist roles. Second, given the large volume of international literature and differences in country-specific health policies, the author restricted the inclusion criteria to the UK region to reduce studies to those conducted in a single administrative and organizational context. Nonetheless, the author acknowledged the international literature by making comparisons to the UK literature in the discussions of both systematic reviews. The third decision was to include studies on pharmacist roles which were not exclusive to community pharmacy such as independent prescribing. Including studies on these roles was important to obtain findings which may be applicable to community pharmacy services in general and in future.

Relevant electronic databases were searched from 2005-2017 using a variety of keywords. The University library’s advisory service provided workshops and online resources which were used to guide the author’s development and execution of the database searches. Both supervisors, who have considerable experience in conducting studies that inform and guide policy within the pharmacy profession, were involved in the revision of the database searches. The author followed the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines during the screening process to ensure that the review was conducted with high quality and rigour.\textsuperscript{146} This involved initially screening titles and abstracts against the inclusion/exclusion criteria, followed by screening of the full text. The details of the literature search strategy from Study One are described in Chapters Five and Six.

4.1.2 Study One: Data Extraction and Analysis

Data from included articles were extracted using a data extraction tool. The following data were extracted: author(s), year of publication, study design, number of participants, pharmacy service/roles, study aim, key findings, themes and quality score. The quality of papers included in the review was evaluated using a nine-item checklist developed by Hawker and colleagues to appraise research from different paradigms.\textsuperscript{147} Based on the recommendations by Mays and colleagues,\textsuperscript{148} a narrative approach was undertaken to provide a descriptive account of qualitative and/or quantitative literature findings. The findings of included papers
were reported via themes/subthemes following thematic analysis. Chapters Five and Six provide the details of data extraction, critical appraisal and data analysis from Study One.

4.2 Theoretical Underpinnings of the Research Method: Studies Two and Three

After conducting the systematic reviews, it was evident that the empirical research (i.e. Studies Two and Three) required an approach which explores the views of patients, pharmacists and GPs whilst accounting for organisational complexities within the primary care pathway. A theoretical framework was necessary to underpin the empirical work. Theories can be applied in different ways and at different stages to guide research and ensure robustness and rigour in the research development process.\textsuperscript{149} Drawn from the marketing discipline, the “7Ps marketing mix” was the theoretical model chosen to underpin this programme of research.\textsuperscript{150} Moreover, an exploratory sequential mixed methods design was the methodological approach used to meet the aims of this programme of research.\textsuperscript{151} The sections below provide the description and rationale for using the 7Ps marketing mix (Section 4.2.1) and exploratory sequential mixed methods design (Section 4.2.2).

4.2.1 Rationale for Using the 7Ps Marketing Mix

The aim of this thesis was to explore and identify ways to improve awareness, demand and use of community pharmacy services that may benefit patients with LTCs. Therefore, different behavioural change approaches (theoretical frameworks) could have been applied to this research such as the “Health Belief Model”, “Theory of Reasoned Action” and the Theoretical Domains framework. These behavioural change theories have been widely used in health services research to explain and predict health-related behaviours in relation to the uptake of healthcare services.

The Health Belief Model suggests that people’s engagement with a healthcare service can be explained by their beliefs about health problems, perceived benefits of action and barriers to action, and self-efficacy.\textsuperscript{152} Whereas the Theory of Reasoned Action aims to predict how individuals will behave based on their pre-existing attitudes and behavioural intentions.\textsuperscript{153} The strength of the Health Belief Model and Theory of Reasoned Action is that they account for individual aspects that influence patient beliefs and attitudes towards using services/interventions. However, both of these models do not account for organisational
factors that could influence health behaviours such as service design, collaboration between healthcare professionals and the physical environment.

On the other hand, the Theoretical Domains Framework is an integrative framework which accounts for cognitive, affective, social and environmental factors that impact behaviour when implementing new practices and/or changing existing practices in healthcare organisations.\textsuperscript{154, 155} Although the Theoretical Domains Framework covers a range of domains, the majority of the domains focus on individual-level aspects of behaviour. Therefore, using the theoretical domains framework in this research may underrepresent the influence of organisational and promotional factors on patient awareness of, and demand for community pharmacy services. In addition, the Theoretical Domains Framework focuses on identifying factors which influence the implementation of services/interventions rather than investigating how an organisation such as community pharmacy could bring value to patients and the wider healthcare system.

Another possible approach to address the aim of this programme of research is using marketing theories which focus on identifying consumer (and other stakeholder) needs and preferences whilst considering other organisational complexities.\textsuperscript{156, 157} There has been growing interest from public sector organisations in the application of marketing theories to enhance service provision to achieve organisational goals.\textsuperscript{156, 157} With marketing described as “\textit{the social process by which individuals and organizations obtain what they need and want through creating and exchanging value with others}”,\textsuperscript{156} community pharmacy services should provide services that create value for both patients and GPs in order to achieve better uptake and awareness. Unlike behavioural change theories which focus on individual aspects of patient behaviour, marketing theories look to understand how an organisation as a whole can bridge the gap between themselves and their potential target population.\textsuperscript{157} As community pharmacy faces many organisational challenges which extend beyond individual patient needs, it was decided that a marketing approach would be used to underpin studies Two and Three.

It has been argued that the use of marketing theories in the public sector could provide a better understanding of how these organisations could meet the expectations of their target population.\textsuperscript{156, 158} Moreover, previous studies have demonstrated the applicability of marketing theories to shed light on factors which influence the demand and uptake of public sector services.\textsuperscript{159, 160} Therefore, marketing theories may be applied to primary healthcare
and, specifically, the community pharmacy context to provide valuable insights such as: identifying stakeholders’ needs and preferences, understanding factors that influence service uptake, and exploring how services could meet quality standards.161-163

A range of marketing theories could be used to inform research designs. However, when applying marketing theories in the health sector, it is important to distinguish “services” from “products”.164 The four unique characteristics of services which distinguish them from products are: “intangibility”, “heterogeneity”, “inseparability” and “perishability”. “Intangibility” implies that services do not have a physical form.165 “Heterogeneity” highlights that the delivery of each and every service will vary depending on where and how they are provided to consumers.166 “Inseparability” recognises that the provider must be involved during the delivery of a service (i.e. the service and the provider are inseparable).167 “Perishability” acknowledges that services perish once delivered and therefore cannot be inventoried.167

Corbin and colleagues168 highlight that these four characteristics raise challenges which should be taken into account when evaluating the provision of healthcare services. For instance, service intangibility makes it difficult for patients to know what to expect from healthcare services which could influence their use of services. Moreover, “heterogeneity” indicates that patient perceptions of healthcare services will be strongly influenced by their individual experiences. These individual patient experiences are heavily dependent on their interactions with healthcare professionals providing the service (“inseparability”). Furthermore, service perishability raises challenges such as maintaining delivery of high quality healthcare services.

Some of the widely-used marketing theories which could have been appropriate for this programme of research include the “4Cs marketing model” and “McKinsey 7S model”. The “4Cs marketing model” proposed by Lauterborn, provides a consumer-orientated marketing model which focuses on “consumer wants and needs”, “cost”, “convenience”, and “communication”.169, 170 This model aims to understand what the consumer wants from a product but it does not account for challenges associated with providing a service (i.e. “intangibility”, “heterogeneity”, “inseparability” and “perishability”).

The “McKinsey 7S model” which was developed by Waterman and colleagues, looks at the interrelationship between seven key elements (“structure”, “strategy”, “skills”, “staff”, “style”, “systems”, and “shared values”) which influence organisational effectiveness.171
This model could be used to provide insights on how to enhance community pharmacy workflow. However, this model specially focuses on internal design with no scope for consumer needs or extra-organisational factors which impact an organisation. Therefore, applying the “4Cs marketing model” or “McKinsey 7S model” in this research would not have fully explored the dynamic and complex relationship between the community pharmacy setting, key stakeholders and the wider primary care context.

On the other hand, the “7Ps marketing mix” proposed by Booms and Bitner is based on understanding what consumers want/need from a service whilst accounting for the influence of service design, service delivery and external communications on consumers’ perceptions of services. The 7Ps are “product”, “price”, “place”, “promotion”, “people”, “process” and “physical evidence” (see Figure 4-1).150 The 7Ps provide seven components that should be accounted for by an organisation to successfully market their service to target customers and has been considered as one of the cornerstones of marketing theory.150, 164 The 7Ps marketing mix expanded on McCarthy’s original 4Ps marketing mix model (“product”, “price”, “promotion” and “place”).172 Whilst the original 4Ps model is still widely used in marketing research, the 4Ps model has been criticised for its lack of applicability for services marketing.173 Thus, the 7Ps marketing mix which is now more commonly used in services marketing research, added three essential components specific/relative to services: “people”, “process” and “physical evidence”.

The 7Ps marketing mix is suitable in the context of patients with LTCs as it considers key elements within the primary care pathway that could influence their awareness of, and demand for community pharmacy services. Each of the 7Ps when carefully considered together allows for the formation of a list of recommendations/cohesive strategy that could inform better use and implementation of community pharmacy services for patients with LTCs. Below are examples of how the 7Ps marketing mix components could be useful in improving community pharmacy services for patients with LTCs:

1.) “Product” focuses on developing the right product/service to meet the expectations of patients with LTCs. As the evidence suggests that patients do not always perceive any benefit from using community pharmacy for their LTCs (Section 2.7), it is important to have a sound understanding of the kind of services patients with LTCs may prefer to use at community pharmacy.
2.) “Place” plays an important role for patients with LTCs and/or their careers that regularly access healthcare venues for the management of LTCs and therefore may find difficulties accessing GP appointments (see Section 2.2.1). Access and convenience of community pharmacy has been hypothesised as key factor in shifting some of the patient demand from GP practice towards community pharmacy.

3.) “Price” within the context of patients with LTCs looks at the added value/benefit community pharmacy services could provide to patients and other healthcare providers. This component should be carefully considered when designing/commissioning community pharmacy services to ensure they provide value for patients with LTCs and avoid duplication of GP effort.

4.) “Promotion” seeks to explore how community pharmacy could effectively communicate what it does and what it can offer to patients with LTCs. This aspect is essential given that many community pharmacy services above and beyond traditional medicines supply have been recently developed as part of the revised CPCF (see Section 2.4) and patients may not be aware of them (see Section 2.7).

5.) “People” is relevant to patients with LTCs who often require multidisciplinary care and therefore will come into contact with different healthcare professionals throughout their healthcare journey. Therefore, there is a need to explore how interactions between patients and healthcare professionals influence their perceptions of community pharmacy services.

6.) “Process” focuses on the entirety of the patient experience when accessing a healthcare service. Patients with LTCs will access different services at different times so it is important to ensure that services are seamlessly integrated within their primary care pathway.

7.) “Physical evidence” accounts for the influence of the physical environment when providing/offering service to patients with LTCs. The effects of the physical environment on patients’ perceptions could have important consequences for the success of any community pharmacy service/intervention given that they are provided in a retail shop.
Previous research has shown that this marketing tool can be applied by organisations providing public services in public administration sectors and higher education institutions to develop/proposal strategies which focus on improving service demand and uptake. There is also evidence demonstrating the influence and relative importance of the marketing mix components on patient’s accessing and utilising healthcare venues. For instance, previous studies have evaluated the impact of marketing mix elements on patients’ willingness to use hospitals and online pharmacies. In addition, the marketing mix has been used to identify key factors which influence patient preferences for having prescriptions filled at the pharmacy. Another important advantage of using the 7Ps marketing mix for this programme of research was its flexibility and applicability to both qualitative and quantitative research designs. Therefore, the “7Ps marketing mix” was used to frame data collection and analysis for Study Two and Study Three (Sections 4.3 & 4.4).

Figure 4-1: 7Ps marketing mix proposed by Booms and Bitner\(^99\)
The 7Ps marketing mix was applied in relation to community pharmacy services within the primary care pathway for patients with LTCs. To ensure methodological rigour in applying the 7Ps model to community pharmacy services, each marketing mix component was informed by themes/subthemes emerging from the systematic reviews conducted in Study One (Chapter Five & Chapter Six). Once themes/subthemes were identified in the systematic reviews and analysis was undertaken, they were examined for “best fit” and then mapped against the 7Ps marketing mix components (see Table 4-1).

**Table 4-1**: Themes and subthemes from Study One mapped against the 7Ps marketing mix

<table>
<thead>
<tr>
<th>Patient and public review:</th>
<th>7Ps marketing mix components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Themes/subthemes</td>
<td>Product</td>
</tr>
<tr>
<td>Awareness and use of pharmacy services</td>
<td>✓</td>
</tr>
<tr>
<td>Perceptions of pharmacists</td>
<td></td>
</tr>
<tr>
<td>Physicians’ supremacy</td>
<td></td>
</tr>
<tr>
<td>Promotional strategies</td>
<td></td>
</tr>
<tr>
<td>Facilitators</td>
<td></td>
</tr>
<tr>
<td>Barriers</td>
<td></td>
</tr>
<tr>
<td>Service vs non-service users</td>
<td></td>
</tr>
<tr>
<td>Perceived impact</td>
<td></td>
</tr>
</tbody>
</table>
Following the mapping process, the author and his supervisors defined each “P” in relation to stakeholders’ experiences and expectations of community pharmacy services within the primary care pathway for patients with LTCs (Table 4-2). It was decided that the component “price” was to be defined in terms of value provided by pharmacy services as most NHS UK services do not incur a charge. Hence, the adaption of the 7Ps marketing mix was grounded in the evidence-base to guide Studies Two and Three in meeting the overall aims of the research.
Table 4-2: 7Ps marketing mix components in relation to community pharmacy services within the primary care pathway for patients with long-term conditions

<table>
<thead>
<tr>
<th>Product</th>
<th>Stakeholders’ expectations and perceptions of community pharmacy services within the patient primary care pathway.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Stakeholders’ expectations and experiences regarding utilisation and delivery of community pharmacy services.</td>
</tr>
<tr>
<td>People</td>
<td>How interactions between stakeholders affect perceptions and delivery of community pharmacy services.</td>
</tr>
<tr>
<td>Place</td>
<td>Access to community pharmacies</td>
</tr>
<tr>
<td>Physical evidence</td>
<td>How physical characteristics of community pharmacies influence expectations and perceptions of stakeholders</td>
</tr>
<tr>
<td>Promotion</td>
<td>How community pharmacy services are communicated and promoted</td>
</tr>
<tr>
<td>Price</td>
<td>What added value stakeholders place on community pharmacy services within the primary care pathway</td>
</tr>
</tbody>
</table>

4.2.2 Rationale for Using Mixed Methods Design

Mixed methods research involves using both qualitative and quantitative methods within a single study or programme of inquiry. Historically, researchers avoided combining qualitative and quantitative methods due to differences in their philosophical underpinnings. These philosophical underpinnings influence how qualitative and quantitative research are designed, conducted and interpreted.

The positivist/empiricist philosophy underpinning quantitative research holds the assumption that research phenomena should be understood from a single objective reality. Hence, positivists hold an objective viewpoint which clearly distinguishes between science and personal experience. Positivists attain knowledge by examining cause and effect relationships...
to uncover single and objective reality. Based on these assumptions, quantitative research is conducted in a manner which involves constructing and testing hypothesis for a research topic using numerical data.

On the other hand, the social constructivist/interpretivist philosophy underpinning qualitative research contends that research phenomena cannot be objectively interpreted as there are multiple, constructed realities. Interpretivists seek to understand the world from the perspective of the subject by accounting for individual human experiences and interactions. Therefore, knowledge acquired within a constructivist/interpretivist approach is socially constructed rather than objectively determined. As a result, qualitative research involves research designs which generate descriptive data to gain a deep understanding of subjective experiences.

More recently, researchers have argued that combining qualitative and quantitative methods (i.e. “mixed methods”) offers significant value in addressing complex research problems. Moreover, it has been debated that philosophical differences between qualitative and quantitative approaches should not render them incompatible nor dictate which specific methods are used by researchers. The growth in interest for using mixed methods approaches stems from the philosophical movement of “pragmatism”, which embraces capitalising on the strengths of qualitative and quantitative methods.

From a pragmatist perspective, it is argued that no single method is superior to the other as both qualitative and quantitative methods have notable strengths and weaknesses. For instance, solely using qualitative approaches provides rich descriptive data allowing the researcher to examine issues in-depth and unearth concepts. However, qualitative research is often criticised for lacking generalisability due to small sample sizes. On the other hand, larger samples are often used in quantitative approaches which make their conclusions more generalizable. Yet, many researchers argue that testing theory via objective facts, statistics and numerical data provide “context-free generalisations” which do not explain complex phenomenon. Therefore, adapting a mixed methods design (when applicable) allows researchers to comprehensively explore a research question by overcoming some of the restrictions in using a single methodological approach.

When applying a mixed methods design, it is important to consider the afore-mentioned differences between qualitative and quantitative methods to ensure they are appropriately combined. As it is beyond the scope of this programme of research to scrutinize the
differences between qualitative and quantitative approaches, the strength and weaknesses of both approaches are summarised in Table 4-3 and Table 4-4.

**Table 4-3: Strengths and weaknesses of qualitative research adapted from Johnson and Onwuegbuzie**

<table>
<thead>
<tr>
<th>Qualitative Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>• The data are based on the participants’ own categories of meaning.</td>
</tr>
<tr>
<td>• It is useful for describing complex phenomena.</td>
</tr>
<tr>
<td>• Provides understanding and description of people’s personal experiences of phenomena (i.e., insider’s viewpoint).</td>
</tr>
<tr>
<td>• Can describe, in rich detail, phenomena as they are situated and embedded in local contexts.</td>
</tr>
<tr>
<td>• The researcher identifies contextual and setting factors as they relate to the phenomenon of interest.</td>
</tr>
<tr>
<td>• Data are usually collected in naturalistic settings in qualitative research.</td>
</tr>
<tr>
<td>• Qualitative data in the words and categories of participants lend themselves to exploring how and why phenomena occur.</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• Knowledge produced may not generalize to other people or other settings (i.e., findings may be unique to the relatively few people included in the research study).</td>
</tr>
<tr>
<td>• It is difficult to make quantitative predictions.</td>
</tr>
<tr>
<td>• It is more difficult to test hypotheses and theories.</td>
</tr>
<tr>
<td>• The results are more easily influenced by the researcher’s personal biases and idiosyncrasies.</td>
</tr>
</tbody>
</table>
Table 4-4: Strengths and weaknesses of quantitative research adapted from Johnson and Onwuegbuzie 183

<table>
<thead>
<tr>
<th>Quantitative Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>• Testing and validating already constructed theories about how (and to a lesser degree, why) phenomena occur.</td>
</tr>
<tr>
<td>• Can generalize research findings when the data are based on random samples of sufficient size.</td>
</tr>
<tr>
<td>• Useful for obtaining data that allow quantitative predictions to be made.</td>
</tr>
<tr>
<td>• Provides precise, quantitative, numerical data.</td>
</tr>
<tr>
<td>• The research results are relatively independent of the researcher (e.g., effect size, statistical significance).</td>
</tr>
<tr>
<td>• It is useful for studying large numbers of people.</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>• The researcher’s categories/theories that are used may not reflect local constituencies’ understandings.</td>
</tr>
<tr>
<td>• The researcher may miss out on phenomena occurring because of the focus on theory or hypothesis testing rather than on theory or hypothesis generation (i.e. confirmation bias).</td>
</tr>
<tr>
<td>• Knowledge produced may be too abstract and general for direct application to specific local situations, contexts, and individuals.</td>
</tr>
</tbody>
</table>

Mixed methods designs involving qualitative and quantitative methods can be said to consist of four types: “explanatory”, “exploratory”, “parallel”, and “nested”. 151, 179, 187 These types of mixed method designs indicate how/when qualitative and quantitative methods are applied in mixed methods research (see Table 4-5). Explanatory and exploratory mixed methods are considered “sequential” in that they are divided into two phases. First, one type of method is applied for data collection and analysis (phase 1) which is then followed by data collection and analysis using another type of method (phase 2). On the contrary, parallel and nested designs are “concurrent” as both qualitative and quantitative methods are applied simultaneously (i.e. one phase). Determining the most appropriate mixed methods design is dependent on the aims of the programme of inquiry and the nature of the research question. 180, 187
Table 4-5: Types of mixed methods designs adapted from Halcomb and Hickman\textsuperscript{192}

<table>
<thead>
<tr>
<th>Mixed method design</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Explanatory</strong></td>
<td>Quantitative $\rightarrow$ Qualitative:</td>
</tr>
<tr>
<td>sequential</td>
<td>Quantitative data is collected and analysed first, followed by qualitative data collection and analysis to explain quantitative findings.</td>
</tr>
<tr>
<td><strong>Exploratory</strong></td>
<td>Qualitative $\rightarrow$ Quantitative:</td>
</tr>
<tr>
<td>sequential</td>
<td>Qualitative data is collected and analysed first, followed by quantitative data collection and analysis to test/evaluate qualitative findings.</td>
</tr>
<tr>
<td><strong>Parallel</strong></td>
<td>Quantitative + Qualitative:</td>
</tr>
<tr>
<td></td>
<td>Qualitative data and quantitative data are collected and analysed at the same time to compare/relate findings.</td>
</tr>
<tr>
<td><strong>Nested</strong></td>
<td>Quantitative (main) + Qualitative (supplementary) OR Qualitative (main) + Quantitative (supplementary):</td>
</tr>
<tr>
<td></td>
<td>One of the research methods (qualitative/quantitative) is prioritised whilst the alternative method supplements the main research method.</td>
</tr>
</tbody>
</table>

Due to exploratory nature of this programme of research, an exploratory sequential mixed methods design was chosen (Figure 4-2). Initially, a qualitative approach was used to explore the perspectives of patients, pharmacists and GPs of the awareness, demand and use of community pharmacy services for patients with LTCs (Study Two, Chapter Seven). Qualitative research attempts to develop concepts, theories or hypotheses through the interpretation of social phenomena in terms of the meanings people bring to them.\textsuperscript{189} Therefore, commencing with a qualitative approach was necessary due to the paucity of research evaluating the collective views of patients, pharmacists and GPs on community pharmacy services within the primary care pathway for patients with LTCs.

Qualitative findings were then used to inform the subsequent quantitative study, which explored factors which could influence people with LTCs to make better use of community pharmacy services (Study Three, Chapter Eight). The rationale for using a follow up quantitative approach was not only to cross-check qualitative findings, but also to provide more generalizable conclusions for this programme of research. Methodological details of the qualitative and quantitative approaches used in this programme of research are provided in the sections below (Sections 4.3 & 4.4).
Exploratory sequential mixed methods design used for programme of research

**Phase 1**
Qualitative methods
Study Two:
Patient, pharmacist and GP focus groups

**Phase 2**
Quantitative methods
Study Three: Patient questionnaires

Integration of findings from qualitative and quantitative approaches

**Quantitative findings**
(Study Three)

**Qualitative findings**
(Study Two)

**Interpretation of findings:** Discussion on awareness, demand and uptake of community pharmacy services for people with LTCs.

**Figure 4-2:** Exploratory sequential mixed methods design used for programme of research
4.3 Study Two: Method

Study Two used marketing theory ("7Ps marketing mix") to examine how community pharmacies are currently used and to identify how community pharmacy services may be better integrated within the primary care pathway for people with LTCs. Focus groups were conducted with patients, pharmacists and GPs to achieve the aims of this study.

4.3.1 Study Two: Focus Group Justification

The two most prevalent methods in qualitative research are interviews and focus groups.\textsuperscript{185,189} Interviews are conducted individually between the researcher and the participant whereas focus groups are forms of group interviews where participants are gathered by the researcher to discuss and comment on the research topic. Interviews are desirable when the researcher wishes to provide rich and detailed data about participants’ individual experiences.\textsuperscript{189} On the other hand, focus groups are preferable when the researcher wishes to examine group interactions and explore similarities/differences between participants.\textsuperscript{189,193}

Focus groups were chosen for Study Two as this method strongly encourages group interaction and uses communication between research participants to generate rich data.\textsuperscript{193} Focus groups offer participants an encouraging environment to discuss and exchange ideas amongst each other. These group dynamics are essential to facilitate the generation of opinions, ideas and experiences regarding the uses and roles of community pharmacies within primary care amongst participants’ perspective. However, one disadvantage of focus groups is that it can be difficult to get different people together at the same place and time. Therefore, the author considered using interviews as an alternative to focus groups if there were difficulties recruiting participants for focus groups. Individual interviews were deemed an appropriate alternative as they could be organised at a time and place suitable to individual participants. Nonetheless, the author was able to recruit all participants for focus groups and therefore interviews were not used in this study.
4.3.2 Study Two: Patient and Public Involvement

To ensure the study was grounded in patient priorities, members of the public were consulted about study design through The Patient and Public Advisory Board (PPAB) of The University of Manchester Division of Pharmacy and Optometry in July 2017. Eight members of the public who took part in the PPAB were living with one or more LTCs and had experience using primary care services. PPAB Members were provided a lay summary of the study (Appendix 1.0) and consulted on the importance of the research topic. Members agreed the study was very relevant and useful and believed the topic of the ‘overstretched NHS’ highlighted the importance of allowing pharmacists more involvement with patients with LTCs and regular use of medications. Members also felt the time it took to see a GP was considered to be too long and did not put their concerns at ease.

PPAB members were also provided a draft version of the participant information sheet and asked for feedback/suggestions. Members explained that the participant information sheet seemed to focus more on the benefit the GP will gain from the study rather than the patients. It was suggested to change the emphasis to reflect that of both GP and patient benefit. Members also suggested defining and explaining the term ‘focus group’ as this may not be clearly understood for those who have not taken part in this kind of study before.

In addition, PPAB members were consulted on recruitment strategies and incentives to participate in the study. Members suggested that recruiting patients via patient groups would provide a more realistic outlook for a study group rather than potentially being handpicked by a pharmacist or an unsatisfied patient from a GP surgery using the study as a platform to vent their own frustrations. Members mainly recommended identifying potential participants for recruitment by using charity organisations, care centres and NHS-supported online resources which involve patients and members of the public in research. Moreover, members believed reimbursing the volunteers for their travel expenses was desirable for potential applicants.

The suggestions made by PPAB members were taken into consideration and implemented by the author after discussion with his supervisors. The participant information sheet was amended to focus on how both patients and GPs could benefit from the study and the term “focus groups” was explained (Appendix 3.0) Moreover, it was decided that charity organisations and NHS-supported online resources would be used to identify patients for the study and travel expenses would be reimbursed.
4.3.3 Study Two: Sampling and Recruitment

As Study Two involved focus groups, costs and travel arrangements were important considerations when selecting the study site. For this reason, it was decided that the study would be based in Greater Manchester to limit travel time and costs. Nonetheless, the ethnic diversity; urban-rural variation; and different types of deprivation indices within Greater Manchester made it a suitable location to recruit participants for the study.194

This study used purposive sampling (i.e. non-probability sampling) to recruit participants as qualitative research does not aim to make statistical inferences from samples in the study.195 Purposive sampling is a commonly used sampling method in qualitative research which involves recruiting participants who have experience with the phenomenon being studied.196. The specific purposive sampling strategy used in this study involved patients that had one or more of the common LTCs: type 2 diabetes, asthma, chronic obstructive pulmonary disease (COPD). Patients with type 2 diabetes and those with respiratory conditions (asthma/COPD) were suitable exemplars of patients with LTCs as they present with various healthcare needs which necessitate the use of both traditional and non-traditional pharmacy services. Moreover, many community pharmacy services already exist which are relevant to these patients such as medication reviews, health checks (blood pressure, cholesterol tests etc.), influenza vaccinations and smoking cessation.138-142 These patients are also included in the national target groups for MURs (Section 2.4.2.1).

There is also reasonable evidence demonstrating the positive impact and various contributions that community pharmacy services can offer for patients with respiratory conditions and diabetes. Evidence for respiratory conditions has demonstrated that pharmacy teams have been effective in improving inhaler technique, increasing medication adherence, improving the control of symptoms and reducing hospitality.141, 142 Positive outcomes with diabetes include improved control of diabetes and associated comorbidities, improved quality of life, reduced hospital visits and improved financial outcomes.138-140 Community pharmacists were identified based on experience in conducting extended pharmacy services. There were no specific characteristics set for recruitment of GPs other than being located in Greater Manchester. Table 4-6 summarises the inclusion/exclusion criteria for participants in Study Two.
Table 4-6: Inclusion/exclusion criteria for Study Two

<table>
<thead>
<tr>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patients</strong></td>
<td></td>
</tr>
<tr>
<td>- Patients with at least one of the following conditions: type 2 diabetes, asthma, COPD</td>
<td>In addition to the participants who did not meet the inclusion criteria, participants who were unable provide consent to participate in a focus group (e.g. cognition, English fluency)</td>
</tr>
<tr>
<td>- Patients at least 18 years of age</td>
<td></td>
</tr>
<tr>
<td>- Patients resident in Greater Manchester</td>
<td></td>
</tr>
<tr>
<td><strong>Pharmacists</strong></td>
<td></td>
</tr>
<tr>
<td>- Pharmacists working in community pharmacies in Greater Manchester</td>
<td>Participants who did not meet the inclusion criteria</td>
</tr>
<tr>
<td>- Pharmacists with experience of providing extended community pharmacy services such as MUR,NMS, flu vaccinations</td>
<td></td>
</tr>
<tr>
<td><strong>GPs</strong></td>
<td></td>
</tr>
<tr>
<td>- GPs practicing within primary care in Greater Manchester</td>
<td>Participants who did not meet the inclusion criteria</td>
</tr>
</tbody>
</table>

Due to the nature of this study, it was not possible to determine the precise sample size from the outset, as data collection in qualitative research is an on-going process until data saturation is reached. However, based on recommendations from experts in the field, it was possible to anticipate a sample size range that was likely to reach data saturation. Based on these expert recommendations, four focus groups were conducted with patients to account for the variation between patients with different conditions. Hence, two focus groups were held with patients with respiratory conditions and two with type 2 diabetes patients. However, due to the homogeneity between the participants in the pharmacist and GP groups, two focus groups were conducted for pharmacists and two focus groups with GPs as these groups were expected to reach data saturation sooner. Each focus group contained 5-7 participants to allow each participant the opportunity to provide rich descriptive details whilst avoiding time constraints that may result from hosting a larger group.

Patients were identified through two charity organisations (Asthma UK and Diabetes UK) and two online organisations which help involve patients and members of the public.
in research (Citizen Scientist\textsuperscript{202} and Research for the Future\textsuperscript{203}). The author informed these organisations about participation requirements and provided study information for dissemination which included contact details of the research team (i.e. invitation letters, participation information sheets and/or participation flyers) (Appendices 2.0, 3.0 & 4.0). These organisations then advertised the study on their websites and interested participants were asked to directly contact the author.

Pharmacists were identified through existing networks. Known contacts of the research team in the Division of Pharmacy and Optometry and the Greater Manchester Local Pharmaceutical Committee were asked by the author to circulate study information to pharmacists. In addition, all Greater Manchester CCGs were asked by the author to circulate study information to GPs.

Pharmacists and GPs were also identified through advertising on social media, as the author circulated participation flyers (Appendix 4.0) on Twitter. These participation flyers had the contact details for the author and, therefore, participants interested in taking part in the study contacted the author via telephone or email. The author then sent invitation letters (Appendix 2.0) and participant information sheets (Appendix 3.0) to potential participants via email. This strategy was helpful in overcoming recruitment difficulties with pharmacists and GPs who were hard to reach.

Potential participants who contacted the author were invited to take part by phone/email and those who participated in the study were compensated for their time and travel expenses. Patients received £25 to cover for participation and any other expenses they incurred in addition to reasonable travel expenses. Pharmacists and GPs received £50 and £100 respectively to cover for both their earnings (work hours) lost due to participation and travel expenses. These payments were calculated in recognition of pharmacists’, GPs’ and patients’ time which was approximately 1.5 hours within the focus group itself (not including time spent getting to the venue and coming back). These estimates reflected differences in estimated hourly pay for pharmacists and GPs. Patients’ estimated rate was also guided by the NHS INVOLVE guidance for involving members of the public in research studies.\textsuperscript{204}
4.3.4 Study Two: Data Collection

The development of the focus group topic guides was informed by the 7Ps marketing mix framework and existing literature on the topic. Each marketing mix component (“P”) was used to frame questions relative to participants’ experiences and expectations of community pharmacy services (see Section 4.1.1). As prompts, a list of community pharmacy services was provided to participants during the focus groups (Chapter Seven). The topic guide differed somewhat for patients, pharmacists and GPs, to account for their different roles within primary care (Chapter Seven, Appendix 7a). The pharmacist topic guide was tested in a pilot focus group with university staff who have experience working in community pharmacies. Following the pilot, participants were asked for feedback and final revisions were made by the author after discussing amendments with his supervisors (Appendix 5.0). In addition to the focus group pilot, the author received considerable training to conduct focus groups through courses/workshops provided by the University.

Seven of the focus groups were conducted at The University of Manchester and only one GP group was conducted at a GP surgery conference room. These focus groups were conducted between January and April 2018. The focus groups were facilitated by the author and co-facilitated by one of his supervisors, who took handwritten notes. Each focus group lasted between 50 and 110 minutes. After each focus group, a debrief session was held between the facilitators to discuss and summarise key points. All focus groups were audio-recorded following verbal and written consent.

4.3.5 Study Two: Data Analysis

All focus groups were transcribed verbatim by a university approved transcribing company. Transcriptions were imported into NVivo11 to manage the data analysis process. Data analysis was iterative, commencing after the first focus group, with transcripts analysed using thematic analysis. Framework analysis was also considered for this study as there is considerable overlap between framework and thematic analysis. However, framework analysis requires adhering to a highly systematic analytical framework which is more time consuming and resource-intensive. Thus, thematic
analysis was a more flexible and less time consuming method of analysis which was more appropriate for the author to conduct.208, 209

Themes were identified using inductive and mapping approaches as themes/subthemes generated were strongly linked to the data itself whilst attempting to map fitting themes onto 7Ps marketing mix model. However, if any unique themes did not map on the 7Ps marketing mix model, they would also be retained. The author met with both supervisors throughout analysis to discuss and agree on emerging themes/subthemes.

The author followed the six phases for thematic analysis to generate codes which eventually led to the development of the themes (Table 4-7).208 The first phase was “data familiarisation”; a process where the author read the transcripts and took notes as well as marked ideas to familiarise himself with all aspects of the data. The second phase was “generation of initial codes”; this involved the author coding all relevant data through the NVivo software program. Initial coding involved line-by-line coding, an open approach in which the author remained open to all the theoretical possibilities within the data.211 Line-by-line coding was followed by focus coding: a selective process in which the author selected the most significant and frequent initial codes to organise and interpret the data in a manner that made the most analytical sense.211

The third phase was “searching for themes” which involved the author analysing and interpreting the codes under a broader level of themes. The fourth phase involved the author “reviewing the themes” based on coherence of data within the themes and then making refinements where necessary. During this phase, the author started to develop the thematic map which would lead to the final framework (Chapter Seven). The fifth phase was “defining and naming themes”. During this phase, the author considered how the themes fit in relation to each other, the 7Ps marketing mix model and the research objectives. Upon completion of the thematic analysis, the last phase was “producing the report” which involved the final stage of interpretation and producing meaning from themes. The author reported the findings within the context of 7Ps model and identifying the congruence/dissonance between patients, pharmacists and GPs (Chapter Seven).
Table 4-7: Six phases of thematic analysis from Braun and Clarke\textsuperscript{208}

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description of the process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Familiarising yourself with your data</td>
<td>Transcribing data (if necessary), reading and rereading the data, noting down initial ideas.</td>
</tr>
<tr>
<td>2. Generating initial codes</td>
<td>Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.</td>
</tr>
<tr>
<td>3. Searching for themes</td>
<td>Collating codes into potential themes, gathering all data relevant to each potential theme.</td>
</tr>
<tr>
<td>4. Reviewing themes</td>
<td>Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a “thematic map” of the analysis.</td>
</tr>
<tr>
<td>5. Defining and naming themes</td>
<td>Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.</td>
</tr>
<tr>
<td>6. Producing the report</td>
<td>The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.</td>
</tr>
</tbody>
</table>

4.4 Study Three: Method

Study Three aimed to identify which factors could influence people with LTCs to make better use of community pharmacy services within the primary care pathway. A cross-sectional survey involving patients with respiratory conditions (asthma/COPD) was used to meet the aims of this study.

4.4.1 Study Three: Cross-Sectional Survey Justification

In exploratory sequential mixed methods designs, quantitative methods are used to assess if results from a qualitative study apply to larger/wider set of cases.\textsuperscript{190, 212} There were a number of key factors identified from Study Two which could potentially increase patients’ awareness of and demand for community pharmacy services (Chapter Seven). These findings
needed to be tested/confirmed using a larger sample to provide more generalizable findings and expand the scope of the programme of research.

A cross-sectional survey is described as a research method that “collects data to make inferences about a population of interest at a specific point in time.” Cross-sectional survey designs are widely used quantitative research methods for testing and/or comparing characteristics, attitudes or behaviors from a specified sample frame. Moreover, cross-sectional surveys could reach a large number of people at one point in time. Therefore, using a cross-sectional survey design was a suitable and efficient approach to crosscheck findings from Study Two and establish statistical relationships for key factors identified from Study Two.

4.4.2 Study Three: Sampling and Recruitment

The population for this study were patients with respiratory conditions (i.e. asthma/COPD) in Greater Manchester. The author intended to involve both patients with respiratory conditions and those with type 2 diabetes. However, differences between community pharmacy services for patients with respiratory conditions and those with type 2 diabetes would require the development and distribution of two separate questionnaires. Considering the timeframe for the programme of research, including both patients with respiratory conditions and those with type 2 diabetes was considered too resource-intensive and time consuming. In addition, there were insufficient research expenses to conduct a large scale national survey study. As a consequence, a decision was made to focus on two distinct areas (i.e. Manchester and Oldham) which would take account of the geographical variation within Greater Manchester. Hence, Study Three involved patients with respiratory conditions as extended community pharmacy services for these conditions (e.g. inhaler techniques and respiratory MURs) were more well-established than type 2 diabetes in the geographical region for Study Three.

To minimise recruitment bias, questionnaires were not distributed to patients via community pharmacies. Instead, patients were recruited through GP practices in Greater Manchester. The author contacted eight GP practices identified by known contacts, via email/telephone asking them to participate in the study. Of these eight GP practices, three declined, three did not respond to the invitation and two GP practices agreed to participate. In those GP practices which agreed to participate, the GP practice managers identified eligible patients for the study through GP records. Eligible patients involved asthma/COPD patients who were at least 18
years of age and able provide consent to complete the questionnaire (e.g. cognition, English fluency).

The sample size for this study was determined based on available resources (i.e. expenses required for data collection). It was difficult to conduct a formal sample size calculation as there had been no data previously collected for many variables of interest in this study. Nonetheless, as this study involved a homogenous sample, attaining 250 responses was deemed sufficient to meet the aims of the study. Based on response rates of previous studies using similar recruitment methods (approximately 25%), the author intended to distribute surveys to approximately 1000 patients to achieve 250 responses. If 250 responses were received, this number would be sufficient to estimate the true percentage of respondents experiencing a binary outcome (e.g. stating they are more likely to use their pharmacy than they currently do) to within ±7% with 95% confidence. In addition, the survey would also have in excess of 80% power to detect a correlation as small as 0.18 between any 2 derived continuous variables, based on a 5% level of statistical significance. Both supervisors and a statistician in Health Services Research at The University of Manchester reviewed this sampling strategy.

4.4.3 Study Three: Data Collection (“Developing the Questionnaire”)

The development of the questionnaire was informed by the focus group findings in Study Two which used the 7Ps marketing mix and existing literature. Prior to development of the questionnaire, the author specifically searched the literature for instruments that could be adapted for the design of the questionnaire. However, existing questionnaires mainly focused on patient satisfaction with specific community pharmacy services. Therefore, the questionnaire in this study was mainly grounded on the framework that was developed from findings in Study Two which conceptualised key components influencing better use and integration of community pharmacy services within the primary care pathway for patients with LTCs (Chapter Seven, Figure 7-2).

The questionnaire involved closed ended questions in the form of checkbox questions and Likert scale response options and a free-text additional comments section (Appendix 6.0). The questionnaire consisted of the following parts: (1) Cover page (2) Screening question (3) Patients’ use of community pharmacy (4) Patients’ preferences for using services at the community pharmacy or GP surgery (5) Importance of community pharmacy features for
patients (6) Patients’ views on promotional strategies for community pharmacy services (7) Additional comments (8) Participant demographics.

1. Cover page: The cover page contained information to ensure participants understood the purpose of the questionnaire and what was required of them if they chose to fill in the questionnaire. The cover page reminded participants to answer the questions thinking only about their respiratory condition and that their responses were confidential. The bottom of the cover page asked participants to return the questionnaire using the freepost envelope upon completion.

2. Screening question: The purpose of the screening question was strictly to ensure the questionnaire had been sent to the right participants. The screening question asked “do you have any of the following breathing problems?” If participants ticked the box indicating they did not have any breathing problems, they were directed not to proceed with the questionnaire and return it using the freepost envelope provided.

3. Patient’s use of community pharmacy: This section consisted of checkbox questions which examined: how often respondents used community pharmacies; if they used the same pharmacy; which health services they used at the pharmacy; and how they found out about pharmacy services they used. These questions were adapted from an instrument used in a study conducted by the Department of Health. The purpose of asking these questions was to assess if respondents’ use of community pharmacies influenced their responses to the questionnaire.

4. Patients’ preferences for using services at the community pharmacy or GP surgery: This section explored whether respondents preferred to receive certain health services at the GP surgery or at the community pharmacy. This section consisted of a range of services which could be relevant to patients with asthma/COPD. Respondents stated their preferences for which services they preferred to have at the community pharmacy or GP practice using a 7-point Likert scale. One of the response options was “not applicable” as some of the services may not apply to all respondents (e.g. smoking cessation or weight management).

5. Importance of community pharmacy features for patients: This section asked respondents to indicate if certain features would make them more (or less) likely to use extended community pharmacies using a 5-point Likert scale. The features in this section were related to pharmacy premises, staff, location and resources. The inclusion of the option
“less likely” was based on questions in relation to pharmacy staff accessing medical records which could negatively influence patients’ likelihood of using community pharmacies.

6. Patients’ views on promotional strategies for community pharmacy services: This part of the questionnaire aimed to identify how respondents would like to find out about community pharmacy services. Respondents were provided with a list of promotional strategies and asked to tick which one/s would encourage them to use community pharmacies for extended services.

7. Additional comments: Respondents were provided with a free-text comment box to write any comments they wanted to make about using their community pharmacy for their respiratory condition.

8. Participant demographics: This questionnaire concluded by collecting participants’ demographic information in order to examine if characteristics such as gender, age and ethnic origin influenced participants responses to the questionnaire.

The questionnaire was revised through discussions with both supervisors who have experience of developing survey studies which inform pharmacy policy and practice. The questionnaire was then piloted using cognitive interviews with 16 members of the public. Twelve of the participants in the pilot had a LTC (six of whom had a respiratory condition) and the other four participants did not have a LTC but used community pharmacies for collecting/purchasing medications.

Cognitive interviewing is an evidence-based qualitative method specifically designed to investigate whether a survey question is addressing its intended purpose. Cognitive interviewing involved the author asking participants to complete a draft of the questionnaire, after which completing they were interviewed by the author about what they understood from each question. The author then asked participants for their overall impression and general comments/suggestions on the questionnaire (Appendix 7.0). The cognitive interviewing process involved a total of three rounds. After interviewing participants in each round, the author collated responses from all the cognitive interviews and discussed them with his supervisors. Following the discussion, amendments were made to the questionnaire and then tested with new participants in the following round. Upon completion of three rounds, the final version of the questionnaire was produced (Figure 4-3). The changes which were made to the questionnaire following the cognitive interviews are summarised in Table 4-8.
Figure 4.3: Cognitive interviewing process for Study Three questionnaire
### Table 4-8: Summary of changes made to the questionnaire following the cognitive interviews

<table>
<thead>
<tr>
<th>Type of problem</th>
<th>Original item/question</th>
<th>Revised item/question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of emphasis</td>
<td><em>How likely would it be for you to use health services at the pharmacy/chemist:</em></td>
<td><em>How likely would it be for you to use health services at the pharmacy/chemist:</em></td>
</tr>
<tr>
<td></td>
<td>- If pharmacy services are provided to you in private consultation rooms</td>
<td>- If pharmacy services are provided to you in private consultation rooms <strong>that cannot be overheard</strong></td>
</tr>
<tr>
<td>Ambiguous item</td>
<td><em>How likely would it be for you to use health services at the pharmacy/chemist:</em></td>
<td><strong>Item removed</strong> as it was misunderstood by most participants.</td>
</tr>
<tr>
<td></td>
<td>- If the pharmacist set clear goals with you in relation to your asthma/COPD</td>
<td></td>
</tr>
<tr>
<td>Unbalanced response scale</td>
<td><em>How likely would it be for you to use health services at the pharmacy/chemist:</em></td>
<td><em>How likely would it be for you to use health services at the pharmacy/chemist:</em></td>
</tr>
<tr>
<td></td>
<td>- Less likely/ does not make a difference/slightly more likely/much more likely</td>
<td>- <strong>Much less likely</strong>/ Less likely/ Does not make a difference/ <strong>More likely</strong>/Much more likely</td>
</tr>
<tr>
<td>Missing response option</td>
<td><em>Do you have any of the following breathing problems?</em></td>
<td><em>Do you have any of the following breathing problems?</em></td>
</tr>
<tr>
<td></td>
<td>- Asthma/ COPD</td>
<td>- Asthma/ COPD/ <strong>Other breathing problem</strong> [added]</td>
</tr>
<tr>
<td>Missing question determining the influence of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>service features on participants willingness to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use community pharmacy services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>New question added:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Looking at your answers to question 7, “If all of the features you ticked as “more/much more likely” were all in place, would this make any difference to how you use your pharmacy in reality?”</td>
</tr>
</tbody>
</table>
4.4.4 Study Three: Data Collection ("Distributing the Questionnaire")

The author provided the GP practice managers who agreed to participate with recruitment packs to post to eligible patients between January-February 2019. Each recruitment pack contained: an invitation letter informing potential participants about the study (Appendix 8.0) along with a participant information sheet (Appendix 9.0), questionnaire (Appendix 6.0), and reply paid envelope (addressed to the research team’s work address). These covered all important information such as aims of the research, reasons for being selected and what was required of participants if they chose to participate. Contact details for the research team were included for any inquiries/details regarding the study.

Each questionnaire was assigned a unique ID number for purposes of anonymization. In addition, these ID numbers were used to identify non-respondents for GP practice managers to send out one postal reminder. ID numbers were created by the author but the GP practice managers were responsible for the management of the pseudonymisation key. The author provided instructions to the GP practice managers regarding the assignment of ID numbers to participants. After three weeks of sending out the questionnaires, the author informed the GP practice managers of the patient ID numbers who had not returned questionnaires. As the GP practice manager had the link between the ID number and the participant details, they used these ID numbers to send out one postal reminder including a copy of the questionnaire.

4.4.5 Study Three: Data Analysis

Data from the questionnaires were entered onto a SPSS database (version 22.0). Following data entry, the dataset was screened using frequencies and cross-tabulation to detect any outliers, missing data and double-digit entry. Any errors identified were corrected with reference to the original questionnaire. Descriptive statistics was used to summarise the frequencies and percentages of survey responses (Chapter Eight). Responses to the frequency of community pharmacy use (</> once per month), variety of pharmacies used (same/different pharmacy), age group (<65/ ≥65 years of age), and type of services used by respondents (only medication supply/other services), were dichotomized to enable inferential analysis.

Two sets of regression analyses were conducted. The first regression analysis explored if respondents’ characteristics were associated with ‘service preference for community pharmacy over GP services’ (a score derived from summing the Likert responses to
individual items which assessed respondents’ preferences for using services at community pharmacy or GP practice. Individual items which were applicable to less than 40% of the sample were removed from the total score to minimise biased estimates of parameters. Internal reliability was considered acceptable if Cronbach’s alpha (α) score was between 0.70-0.90. The second regression analysis explored whether respondent characteristics were associated with ‘likelihood of using community pharmacy services’ (i.e. binary response to the statement “I would be more likely to use the pharmacy than I currently do if all of the features ticked as “more/much more likely” were all in place”).

To achieve the “best model”, univariable analysis was conducted for purposeful selection of covariates in the regression models. Initially, independent samples t-tests were conducted to examine significant univariable association between respondent characteristics and total scores for service preference at community pharmacy over GP practice. Pearson’s chi-squared tests were used to test for significant univariable association between respondent characteristics and respondents’ likelihood of using community pharmacy services. A conservative p-value of 0.2 was used to indicate a significant association for univariable analysis. This p-value cut off point was preferable to the conventional value of 0.05 which could omit important variables. Independent variables (i.e. respondent characteristics) which met this criterion were then included in an appropriate multivariable regression model to examine if their association remained when controlling for other factors (Appendix 12.0). Variables were retained in the final model if significance at p<0.05 was achieved (Chapter Eight).

Qualitative data from the free-text comment box were transferred into Microsoft Excel and analysed thematically to identify commonly reoccurring themes. All comments were examined, categorised and themed in relation to the research question (Appendix 13.0). Themes were juxtaposed with quantitative data to provide a better understanding and richer interpretation of the findings (Chapter Eight).

4.5 Ethical Issues

The ethical issues in this programme of research involved obtaining informed consent; ensuring participants’ right to withdraw from the studies; data protection; and maintaining confidentiality. The sections below describe how these ethical issues were addressed.
4.5.1 Informed Consent and Participants’ Right to Withdraw

Before consenting to take part in Studies Two and Three, potential participants received an invitation letter (Appendix 2.0 & Appendix 8.0) and participation information sheet (Appendix 3.0 & Appendix 9.0) which covered all important information such as aims of the research, reasons for being selected and what was required of them if they choose to participate. Contact details for the author and his supervisors were included for any inquiries/details regarding the studies. Prior to the focus groups (Study Two), participants were asked to sign a consent form. The consent form reiterated that participant information was strictly confidential, their participation was completely voluntary and they were free to withdraw from the study up until the point when the information they had provided had been anonymized (Appendix 3.0). In addition, the author obtained participants’ permission and verbal consent to audiotape the focus groups. As participants in Study Three were contacted by post, the completion of the questionnaire was taken as implied consent.

4.5.2 Data Protection and Maintaining Confidentiality

Participants were specifically asked not to mention names of individuals or organisations during focus group discussions. Participants were also asked to not share what was discussed and participants’ identities outside the focus groups. Hard copies (i.e. consent forms, surveys) for Studies Two and Three were stored in locked filing cabinets located in a secure room at the University of Manchester Stopford building, at the Centre for Pharmacy Workforce Studies (CPWS) offices. These filing cabinets were only accessible to the author and his supervisors.

Focus group audio recordings, transcriptions and data analysis files were stored into password-protected files on the secure University of Manchester server and a shared drive on the universities data management platform between the author and his supervisors. No data was accessed in non-encrypted personal computers or laptops and audio files were destroyed irreversibly after transcription. All transcripts were anonymised and no information revealing/identifying the participants was used. Any direct quotes from participants used for publication purposes were completely anonymised and not linkable to any individual taking part in focus groups.
4.5.3 Ethical Approvals

- Study One did not require ethical approval as it only involved reviewing the literature.

- Study Two received NHS Research Ethics Committee approval and NHS Health Research Authority approval (Ref: 17/NE/0371). (See Appendix 10.0)

- Study Three received NHS Research Ethics Committee approval and NHS Health Research Authority approval (Ref: 18/EM/0372). (See Appendix 11.0)
Key points from this chapter

- Study One consisted of two systematic reviews which explored patient/public, pharmacist and GP perspectives on community pharmacy services to identify research gaps and inform the approach for the programme of research.

- The theoretical model underpinning this programme of research was the “7Ps marketing mix” which provides seven components that should be accounted for by an organisation to successfully market their product or service to target customers.

- A mixed methods approach (i.e. qualitative and quantitative methods) was used to comprehensively explore the awareness, demand and use of community pharmacy services as this approach overcomes some of the restrictions when using a single methodological approach.

- Study Two used focus groups to explore the perspectives of patients, pharmacists and GPs on how community pharmacies are currently used and to identify how community pharmacy services may be better integrated within the primary care pathway for people with LTCs.

- Study Three used a cross-sectional survey design to identify what would influence people with respiratory LTCs to make better use of community pharmacy services within the primary care pathway.

- A number of ethical issues were considered to ensure ethical research was conducted.
Chapter Guide:

This chapter presents the manuscript for Study One Part 1 which was published in Health Expectations in 2017.

<table>
<thead>
<tr>
<th>Title</th>
<th>Patient and Public Perspectives of Community Pharmacies in the UK: A Systematic Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manuscript type</td>
<td>Review Article</td>
</tr>
<tr>
<td>Authors</td>
<td>Ali M. K. Hindi, Ellen I. Schafheutle, Sally Jacobs</td>
</tr>
<tr>
<td>Journal</td>
<td>Health Expectations</td>
</tr>
<tr>
<td>Submission Status</td>
<td>Published</td>
</tr>
<tr>
<td>Date of publication</td>
<td>8th November 2017</td>
</tr>
</tbody>
</table>

Note: The formatting and layout are consistent with the requirements for the journal. Therefore, references will be placed at the end of this chapter rather than at the end of the thesis.
Patient and Public Perspectives of Community Pharmacies in the UK: A Systematic Review

Authors:
Ali M.K. Hindi (B.Pharm, M.Sc)
Ellen I. Schafheutle (PhD, MRes, MSc, FFRPS)
Sally Jacobs (B.Sc, PhD)

Full postal address:
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry, School of Health Sciences, Faculty of Biology, Medicine and Health, The University of Manchester, 1st Floor Stopford Building, Oxford Road, Manchester M139PT, United Kingdom

Email address of the author to whom correspondence should be addressed:
ali.hindi@postgrad.manchester.ac.uk
Fax/Telephone number: (+44)7497828803
ABSTRACT

**Background:** The United Kingdom (UK) has been at the forefront of enhancing pharmacist roles and community pharmacy services, particularly over the past decade. However, patient and public awareness of community pharmacy services has been limited.

**Objective:** To identify and synthesise the research literature pertaining to patient and public perspectives on: existing community pharmacy services, extended pharmacist roles, and strategies to raise awareness of community pharmacy services.

**Search strategy:** Systematic search of eight electronic databases; hand searching of relevant journals, reference lists, and conference proceedings.

**Inclusion criteria:** UK studies investigating patient or public views on community pharmacy services or pharmacist roles from 2005 to 2016.

**Data extraction and synthesis:** Data were extracted into a grid and subjected to narrative synthesis following thematic analysis.

**Main results:** From the 3,260 unique papers identified, 30 studies were included. Manual searching identified four additional studies. Designs using questionnaires (n=14, 41%), semi-structured interviews (n=8, 24%), and focus groups (n=6, 18%) made up the greatest proportion of studies. Most of the studies (n=28, 82%) were published from 2010 onwards and covered perceptions of specific community pharmacy services (n=31). Using a critical appraisal checklist, the overall quality of studies was deemed acceptable. Findings were grouped into two main themes “public cognizance” and “attitudes towards services” each with four subthemes.

**Discussion and conclusions:** Patients and the public appeared to view services as beneficial. Successful integration of extended pharmacy services requires pharmacists’ clinical skills to be recognised by patients and physicians. Future research should explore different approaches to increase awareness.
INTRODUCTION

Healthcare organisations find themselves facing new challenges to keep up with growing healthcare demands of the public.\textsuperscript{1} Many of these challenges are associated with improving the economical, humanistic, and clinical outcomes for individuals with long-term conditions.\textsuperscript{1,2} These demands have led policymakers to seek alternative ways to optimise the healthcare system and enhance patient care. It has been argued that for healthcare services to be more efficiently utilized, all members of the healthcare team need to collaborate and reassess their roles and contributions.\textsuperscript{3} Better collaboration could reduce medical errors and improve patient outcomes\textsuperscript{4} by combining skills, expertise, and resources.\textsuperscript{5} Community pharmacies are part of the primary care system, yet there has been scepticism about pharmacist collaboration with other healthcare professionals due to their isolated roles and the commercial environments in which they operate.\textsuperscript{6-8} Yet the importance of such integration, particularly with physicians, has now been recognised.\textsuperscript{9}

In recent decades, the advancement of the pharmacy profession has seen a movement away from a traditional supply function towards more clinically-orientated activities.\textsuperscript{10} Community pharmacies are the most frequently visited healthcare destinations,\textsuperscript{11,12} leading policymakers to recognize the importance of extending community pharmacists’ roles to meet growing public demands.\textsuperscript{11,13,14} This has led to novel reimbursement structures being implemented across many healthcare systems, including Australia, Canada, New Zealand, and the United States of America (USA),\textsuperscript{15,16} which fund cognitive services as well as medicines supply. The United Kingdom (UK) was at the forefront of these developments, with a revised community pharmacy contractual framework being implemented in England and Wales in 2005, and Scotland in 2006, introducing funded clinical, medication review and public health services.

In England, the revised contracts specify three levels of service. Essential services cover traditional roles such as dispensing medications/appliances, repeat dispensing and signposting whilst advanced services focus on pharmacist medication reviews. Locally commissioned services include a wide range of medication and public health services, such as minor ailments (assessment and management of minor ailments by pharmacists), smoking cessation, lifestyle advice, emergency hormonal contraception, substance misuse, screening and
vaccinations. Moreover, consultation rooms became mandatory and subject to certain requirements ensuring patient privacy and confidentiality.

In England, there are two medication review services, medicines use reviews (MUR) and new medicine service (NMS). Both aim to improve patient understanding and adherence to regular or newly prescribed medication through pharmacist consultations. Similar MUR services exist in Wales and Northern Ireland; Wales also has a Discharge Medicines Review. In Scotland, pharmacists develop and prioritise pharmaceutical care plans as part of the Chronic Medication Service. Comparable services have been developed in other countries such as the medication therapy management in the USA, MedsCheck in Canada and Australia, Home Medicines Review in Australia, and Long Term Conditions service in New Zealand, all of which focus on improving patient medication outcomes through pharmacist consultations.

Whilst evidence has demonstrated positive outcomes from community pharmacy services, uptake and awareness of some of these services has been low. A systematic review of uptake and patient outcomes of remunerated pharmacy services revealed low uptake despite improved clinical and financial outcomes, but this study did not explore patient perspectives. Two systematic reviews covering patient and public views on public health services provided in community pharmacies reinforced low awareness. The earlier review covered publications from 1990-2002, including studies preceding the revised UK contractual framework; the other review covered 2001-2010. However, only nine UK studies reported patient perspectives, and only four were within the time frame of the revised pharmacy contract (2005 onwards). All of the above-mentioned reviews focused on particular service(s) rather than community pharmacy more generally. So insight into reasons for low public and patient awareness and uptake remains limited, yet understanding patient views is important to ensure optimal design and provision of community pharmacy services that meet patients’ needs and public expectations.

The UK government has recently announced new plans to innovate community pharmacy services by introducing reward systems for high quality services, integration funds to improve healthcare collaboration, and expanding current services to those who need urgent care. In light of this push to further extend community pharmacy services, it is important to
identify how patients and the public view community pharmacy services and pharmacist roles, and whether these have changed due to recent policy changes.

The aim of this paper is to review current evidence on patient and public perspectives regarding existing community pharmacy services, extended pharmacist roles, and strategies to raise awareness of community pharmacy services in the UK.

**METHODS**

The development and reporting of this review followed the key principles for systematic reviews. Based on the recommendations by Mays et al. for synthesising disparate evidence to inform healthcare policy making, a narrative synthesis was undertaken, to provide a descriptive account of both qualitative and quantitative findings.

**Definitions**

In this review, the term “patients” refers to participants who have experienced the service(s) examined whilst “public” refers to participants who may not have experienced service(s).

**Information sources and search**

Eight academic databases (Embase, PubMed, Scopus, Web of Science, International Pharmaceutical Abstracts (IPA), Science Direct, The Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PsycINFO) were searched for UK literature published from 2005 to 2016. Search terms were developed by all authors (see Table 5-1). Specific search strategies for each database are provided in Appendix 5a. Alternative screening techniques were also employed: reference lists of included studies were scanned and relevant abstracts from UK pharmacy practice conferences published since 2005 scrutinized to explore if they had been followed up with a full paper publication. The search took place in November/December 2016.
**Table 5-1:** Search terms used for the review

<table>
<thead>
<tr>
<th>Concept</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>perspectives</td>
<td>perspective(s) OR awareness OR “patient preference(s)” OR view(s) OR access OR opinion(s) OR perception(s)</td>
</tr>
<tr>
<td>AND patient/public</td>
<td>patient(s) OR public(s) OR “service user(s)” OR consumer(s) OR customer(s) OR client(s)</td>
</tr>
<tr>
<td>AND community pharmacy</td>
<td>“community pharmacy” OR “community pharmacies” OR “community pharmacist(s)”</td>
</tr>
<tr>
<td>AND service</td>
<td>service(s) OR “pharmaceutical care” OR “public health” OR “medication therapy management” OR “long term care”</td>
</tr>
</tbody>
</table>

**Data screening**

Titles and abstracts were initially screened against the inclusion/exclusion criteria by the lead author (see Table 5-2). One or both of the co-authors were consulted where queries arose. Subsequent screening involved full text application of the inclusion/exclusion criteria.
Table 5-2: Inclusion and exclusion criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting: Community pharmacy</td>
<td>Setting: Hospital pharmacy, outpatient pharmacy</td>
</tr>
<tr>
<td>Location: UK</td>
<td>Location: Outside the UK</td>
</tr>
<tr>
<td>Design/Study type: Qualitative and quantitative studies. Randomised control trials (RCTs) with a primary component eliciting participants’ perspectives on the service</td>
<td>Design/Study type: All types of review studies. Randomised control trials (RCTs) with no secondary aim eliciting participants’ perspectives on the service</td>
</tr>
<tr>
<td>Publication type: Peer reviewed journal papers</td>
<td>Publication type: non-peer reviewed papers and conference abstracts</td>
</tr>
<tr>
<td>Publication date: 2005-2016</td>
<td>Publication date: Before 2005</td>
</tr>
<tr>
<td>Focus of study: Studies exploring patient/public views on any community pharmacy service and/or extended pharmacist role that may take place in community pharmacy settings (i.e. independent prescribing)</td>
<td>Focus of study: Studies only exploring healthcare professionals or administrators’ views on pharmacy services and/or studies only assessing clinical outcomes (not eliciting views/opinions)</td>
</tr>
</tbody>
</table>

Data extraction and synthesis

Data from all included articles were extracted by the lead author and then reviewed with co-authors. The data extracted were collated via a grid to summarize study characteristics: author(s), year of publication, study design, number of participants, type of pharmacy service(s), study aim, key findings and themes. Themes were identified using the following steps: Findings that demonstrated commonality were combined under a potential theme. Potential themes were compared amongst all studies to identify trends and patterns. Themes demonstrating a trend were collated and further analysed to interpret underlying meanings which were labelled as initial themes and subthemes. The formation of an initial thematic map adapted from Braun et al.41 was used to evaluate the strength and uniqueness of initial themes/subthemes. Any subthemes/themes that were not unique were added to broader subthemes/themes (see Figure 5-2).
**Critical appraisal**

Study quality was assessed using the nine-item checklist developed by Hawker et al. for appraising disparate studies,\(^4\) including: abstract and title, introduction and aims, method and data, sampling, data analysis, ethics and bias, results, transferability or generalizability, implications and usefulness. Critical appraisal was conducted by the lead author and results discussed with co-authors. Each study was given a rating of “Good” (4), “Fair” (3), “Poor” (2), “Very poor” (1) for each of the nine items. The total score (min=9, max=36) was used to compare quality amongst studies, and scores for individual items allowed insight into the contribution of components to scores. Studies were not excluded based on quality, but served to critically appraise findings.

**RESULTS**

**Study selection**

A total of 3,260 papers were identified for initial screening after duplicates were removed. Following title and abstract screening, 321 papers were assessed for eligibility via full text reading, with 30 studies included in the review. Manual searching of reference lists identified four additional studies (Figure 5-1).
Records identified through database searching
Embase, PubMed, Scopus, Web of science, IPA, ScienceDirect, CINAHL, PsycINFO

Records after duplicates removed
(n = 3,260)

Records screened
(n =3,260)

Records excluded
(n =2,939)

Full-text articles assessed for eligibility
(n =321)

Excluded (n=291)
- Do not provide views on pharmacy services or pharmacist roles (n=12). Perspectives of healthcare team (n=1). Patient-physician encounters (n=1).
  Conference abstracts (n=114). Other Countries (n= 163)

Studies included in the review
(n = 34)

Additional records identified through handsearching
(n = 4)

Figure 5-1: Flow diagram demonstrating the search procedure
Study characteristics

Study designs using questionnaires (n=14, 41%),\textsuperscript{43-56} semi-structured interviews (n=8, 24%),\textsuperscript{57-64} and focus groups (n=6, 18%)\textsuperscript{65-70} made up the vast proportion of studies. Three mixed methods studies involved the use of questionnaires and semi-structured interviews,\textsuperscript{71-73} one combined observations and semi-structured interviews.\textsuperscript{74} The remaining two studies were discrete choice experiments.\textsuperscript{75, 76} Most of the studies (n=28, 82%) were published from 2010 onwards.\textsuperscript{45-56, 59-70, 72-74, 76} Seven studies related to pharmacist prescribing\textsuperscript{44, 47, 49, 50, 58, 60, 66} which, although not exclusive to community pharmacy, provides valuable insights into opinions of pharmacists’ extended roles. Only three studies covered perceptions of community pharmacy services in general\textsuperscript{63, 67, 70} whilst the rest were service(s) specific (see Table 5-3).

Critical appraisal

Using the nine item checklist,\textsuperscript{42} the overall quality of studies was deemed acceptable (mean total score: 28.1 $\pm$ 3.4), with the lowest scoring items being ethics and bias (2.2 $\pm$ 0.6) (Appendix 5b). These items were evaluated based on how ethical issues were addressed and if potential researcher biases were acknowledged. Whilst most study methods were sufficiently justified, two studies used surveys with questionable reliability (Cronbach alpha <0.70)\textsuperscript{44, 47} and one study provided no information for their adapted questionnaire.\textsuperscript{51} Demographics of participants were reported by 32 studies. Two studies did not indicate why a specific sample size cut-off number was selected.\textsuperscript{45, 72} Data analysis was not detailed in four surveys\textsuperscript{44, 45, 47, 51} and in one not described at all.\textsuperscript{51} Four qualitative studies\textsuperscript{58, 59, 62, 64} and a mixed methods study\textsuperscript{72} provided minimal details on how interviews were analysed. Most studies provided clear descriptions of findings. However, one focus group study did not provide participant quotations\textsuperscript{65} and another, using semi-structured interviews, inadequately interpreted findings.\textsuperscript{62} Whilst all but one study mentioned ethical approval,\textsuperscript{71} none provided descriptions of the ethical issues such as confidentiality, sensitivity and consent. Potential biases were not reported in 18 studies \textsuperscript{45, 46, 48, 49, 53, 56, 57, 59-61, 64-68, 70-72} and none of the qualitative studies acknowledged interviewer bias/reflexivity. Six studies used a small sample size/localised setting,\textsuperscript{46, 48, 49, 53, 71, 73} three inadequately represented the sample population,\textsuperscript{44, 46, 47} and one study was limited to one pharmacy.\textsuperscript{51} All but three studies\textsuperscript{53, 62, 65} reported the importance of findings to policy and practice.
Thematic analysis

Two main themes emerged: “public cognizance” and “attitudes towards services;” each with four subthemes (see Figure 5-2). These two themes were used to characterise patient and public views of community pharmacy services as the former provides insights into expectations from these services whilst the latter focuses on experiences of using these services. Meeting the demands of patients and members of the public requires a better understanding of both expectations and experiences.
Patients & public views of community pharmacy services

Public cognizance

- Awareness and use of pharmacy services
- Promotional strategies
- Physicians’ supremacy
- Perceptions of pharmacists

Attitudes towards services

- Facilitators
- Barriers
- Perceived impact
- Service vs. non-service users

Figure 5-2: Thematic map of final themes/subthemes
Public cognizance

The theme public cognizance concerned how community pharmacies are held within the mindset of patients and the public. Public cognizance encapsulated the subthemes: “awareness and use of pharmacy services”, “perceptions of pharmacists”, “physicians’ supremacy” and “promotional strategies”. Views on pharmacies were influenced by people’s awareness and use of existing pharmacy services as well as perceptions of pharmacists’ roles in healthcare. In addition, the comparison of pharmacists to physicians affected views of pharmacy services.

Awareness and use of pharmacy services

Low public or patient awareness of extended pharmacy services was a common finding. The pharmacy setting appeared to be portrayed as a dispensary (medicines supply) and place for medicines purchase as well as advice on minor ailments. Nearly half (48.3%) of participants in one study chose dispensing as the most common reason for using pharmacies followed by the purchase of medicinal (22%) and non-medicinal products (17.7%). In another survey assessing public views, when participants were asked how often they utilised pharmacies for certain purposes, a high proportion rated “always” for dispensing prescriptions (85.1%) and the purchase of medications (79.2%). The public and patients in qualitative studies expressed their unfamiliarity with the range of pharmacy services available whilst a survey of the general public indicated low awareness for MUR (18.2%) and NMS (8.6%) services. A study elicitating views of MUR service-users discovered a mismatch between their expectations of MUR benefits and those of policymakers. In a study of patients experiencing a pharmacist prescribing service, participants indicated they were unsure about what to expect at the start of the service. Lack of awareness was accompanied by lack of exposure to, or low utilisation of, pharmacy services. In a study comparing pharmacy consumers’ experiences between Australia and England, only 15.6% (24/155) of English participants had experienced a pharmacy based program for weight loss and few members of the public in another study had experienced any of seven public health services investigated (2.1-12.7%). Participants in one study indicated that an influential factor for lack of awareness was pharmacy services not being publicised. In a study piloting a chlamydia testing service, the vast majority of survey participants chose dispensing as the most common reason for using pharmacies followed by the purchase of medicinal and non-medicinal products.
respondents would not have tested, or tested elsewhere, prior to the study. Moreover, only one participant in a study preferred the pharmacy as their first choice for advice whilst 28 participants (15.8%) choose the pharmacy as the least preferred option. However, respondents in two surveys demonstrated willingness to use extended pharmacy services despite low initial awareness.

**Perceptions of pharmacists**

Patient and public perceptions of pharmacists seemed to influence their preferences for pharmacy-led services. There appeared to be resistance to acknowledge the pharmacist as an essential member of the healthcare team. Members of the public rated the importance of pharmacist roles with regards to certain public health issues relatively low in a questionnaire study, whilst activities linked to their traditional roles such as advice on medication usage, side effects and disposal were rated highest. Women in a study assessing the acceptability of pharmacies providing sexual and reproductive health services questioned if it was the pharmacist’s role to supply emergency contraception. In another, patients expressed their preferences for nurses over pharmacists due to the perception that pharmacists were “behind the counter” healthcare staff. In two focus group studies, pharmacist roles were perceived to be limited to dispensing and minor conditions.

Only 1% of patients in a survey chose “trust in the pharmacist” as a reason to visit the pharmacy, yet in another survey, trust in pharmacists was high. Three studies showed that patients and the public were suspicious of pharmacist commercial affiliations and financial motives. Moreover, concerns were identified regarding the pharmacist’s lack of knowledge and training to conduct services beyond dispensing. However, participants in one study were supportive of pharmacists providing advice, referrals and recommendations.

Despite reluctance in supporting pharmacists to carry out extended roles, their expertise in medications was acknowledged. Participants in pharmacist prescribing studies were generally supportive of, and confident in, pharmacist-prescribing roles.
Physicians’ supremacy

Whilst the scope of these studies was specific to pharmacies, patient and public perceptions of the roles and standing of physicians influenced their views on pharmacists and pharmacy services. In survey studies, the majority of respondents preferred physicians to pharmacists regardless of the service provided.\textsuperscript{43, 44, 46, 54} In a study focusing on public health services, physicians (49\%) were preferred to pharmacists (23\%),\textsuperscript{46} whilst both the intervention and controls (76\% and 84\% respectively) in an RCT investigating the effect of a community pharmacy-led medicines management service on patients attitudes, preferred physicians for health discussions and inquiries.\textsuperscript{43} Regarding prescribing, 65\% of patients would prefer to consult a doctor\textsuperscript{44} and 78\% of participants in another study preferred to discuss alcohol consumption issues with physicians.\textsuperscript{54} In contrast, the participants in one survey indicated a preference for pharmacists (69\%) over physicians (25\%) regarding medication advice\textsuperscript{55} and 97\% in another survey preferred pharmacists regarding prescribing.\textsuperscript{49}

Physicians were viewed as superior to pharmacists in knowledge and training,\textsuperscript{50, 60} and their perceived authority affected patients’ views on pharmacists making medication recommendations.\textsuperscript{57} This hierarchical portrayal created a division for patients between both healthcare providers, with physicians considered for diagnostic roles and more serious conditions whilst minor issues were deemed more suitable for pharmacists.\textsuperscript{66, 74} In two studies, this hierarchical structure led to increased accessibility of pharmacy services, as patients preferred to see the pharmacist when conditions were perceived to be not serious enough or worthy of physicians’ time.\textsuperscript{61, 63}

Of particular interest was how the dynamics of the patient-physician relationship influenced the patients’ perceived need of pharmacists. Good relationships or experiences with physicians reduced the need to seek pharmacist advice and vice-versa.\textsuperscript{68} In one study, the physicians’ influence extended to the point that patients required physicians’ authorization or recommendation to convince/ reassure them to utilise pharmacy services.\textsuperscript{68} In fact, members of the public in one study claimed that their trust in pharmacists would be inspired by physicians’ confidence in pharmacists.\textsuperscript{67} Even if the pharmacist was accessed as the first port of call, their advice required physicians’ confirmation before being acted upon.\textsuperscript{68} Similarly, the majority of members of the public in one study preferred a general practitioner to supervise and review pharmacist prescribing.\textsuperscript{50}
Promotional strategies

Despite numerous studies showing a lack of awareness for pharmacy services, there was a shortage of studies discussing strategies that could effectively promote pharmacy services. Only two papers (by the same author) elicited public views regarding effective promotional schemes.\textsuperscript{56, 69} One questionnaire-based study demonstrated word-of-mouth to be the most effective promotional strategy, either from a healthcare professional, or family members or friends.\textsuperscript{56} Focus group discussions with members of the public did not reveal specific preferences but identified various approaches that could enhance service utilisation such as posters, media and physicians’ support.\textsuperscript{69}

Attitudes towards services

The theme “attitudes towards services” pertained to the actual service experience and covered four subthemes: “service vs. non-service users”, “perceived impact”, “facilitators” and “barriers”. Patient and public attitudes were influenced by frequency of service usage and the perceived impact or benefit from using these services. Utilising pharmacy services was associated with a number of facilitators and barriers which affected preferences for using such services.

Service vs. non-service users

The extent of support for pharmacy services was dependent upon the frequency of their usage by patients. More frequent service users tended to favour extended pharmacy services and revealed more support for pharmacists performing numerous different roles. Six surveys that measured this all demonstrated that patients more acquainted with the pharmacy setting were more supportive of extended pharmacy services.\textsuperscript{43, 46, 48, 52, 55, 73} Four of these studies compared more frequent users to less frequent users\textsuperscript{46, 52, 55, 73} whilst the other two compared service users to non-service users.\textsuperscript{43, 48}

Perceived impact

The majority of studies suggested that patients and members of the public perceived pharmacy services to be beneficial. With the exception of one study,\textsuperscript{65} most participants were positive and satisfied with pharmacy services.\textsuperscript{43, 44, 48, 49, 57, 61, 65, 66, 71, 72} Of specific interest
was how services were perceived to be beneficial. Pharmacy services provided reassurance for patients in some studies.\textsuperscript{57, 74} Patients in another study believed that pharmacist discussions boosted their knowledge and confidence in medication usage which consequently enhanced future patient-physician discussions.\textsuperscript{61} Another perceived benefit was that pharmacists provided assessments whether patients required visits to the physician.\textsuperscript{61, 62} In some studies, patients simply appreciated having an alternative source of information available to them.\textsuperscript{57, 64, 68} Open-ended comments in a survey revealed that patients believed medicines optimisation services had enhanced their appreciation of pharmacists’ knowledge and understanding.\textsuperscript{55} Conversely, negative remarks in some studies involved pharmacy services being perceived as unnecessary\textsuperscript{57} since physicians provided all the information patients needed.\textsuperscript{74}

\textit{Facilitators}

This subtheme focused on the features that enhanced the use of pharmacy services from the patient and public perspective. Ease of access and convenience were the most commonly mentioned advantage accredited to pharmacy services.\textsuperscript{44, 46-50, 54, 60, 62, 65, 67-70, 72, 73, 75} Participants in three of these studies made specific reference to the non-appointment based nature of community pharmacies.\textsuperscript{61-63} In two surveys, most respondents selected access and convenience as the main reasons for accessing pharmacy services.\textsuperscript{51, 53} The open-ended questions in three other surveys \textsuperscript{46, 48, 50} as well as a nominal group discussion\textsuperscript{72} also identified access and convenience as the most advantageous aspect.

Pharmacists’ professionalism was also influential to patients’ satisfaction and was attributed to them being friendly, approachable, non-judgmental and possessing excellent communication skills.\textsuperscript{57, 66, 71} Pharmacists’ mannerisms were seen as the cornerstone of building the patient-pharmacist relationship,\textsuperscript{63, 69, 70} which was linked with positive perceptions and support for such services.\textsuperscript{50, 60, 63, 65, 68-70, 76} The majority of patients in five studies expressed comfort with having discussions with pharmacists \textsuperscript{49, 52, 54, 71, 72} and two studies revealed that patients felt more comfortable having discussions with pharmacists compared to physicians.\textsuperscript{44, 47}
Other less commonly mentioned advantages in studies were signposting and referral, service quality, collaboration with physicians. Older people in one study indicated preference of independent pharmacies over large pharmacy chains.

**Barriers**

Studies repeatedly raised a perceived lack of privacy and confidentiality as a barrier to using extended pharmacy services, with the pharmacy environment not considered an appropriate venue for private discussions. Particular concerns were about busyness and conversations being overheard, particularly regarding private matters. In addition, two studies revealed the specific dissatisfaction of service-users with supermarket pharmacies in terms of privacy. It was apparent that patients and members of the public were unfamiliar with consultation rooms offered at UK pharmacies since the introduction of the new community pharmacy contracts. One survey demonstrated low utilisation of consultation rooms, with only 28.8% and 19.4% of respondents experiencing advice or services in private rooms respectively. Participants in two further studies revealed low awareness of private consultation rooms whilst members of the public in another study avoided using them as they associated their usage with substance misuse services. Interestingly, participants in two studies mentioned the lack of use or availability of private rooms. Participants in one study argued that privacy remained an issue even when using consultation rooms. In contrast, patients in one pharmacist prescribing study were aware and reassured by the presence of private rooms.

In several studies, participants perceived the pharmacist’s lack of access to medical records, inability to prescribe and communication difficulties with other healthcare providers as significant barriers to pharmacists’ extended roles in the wider healthcare system. Patients in another study mentioned pharmacists’ lack of authority to carry out extended roles. Some questioned if pharmacists had enough time to carry out additional services due to their high workload, which may lead to a lack of continuity for service provision. Lack of continuity was also raised as a barrier in another focus group study suggesting that pharmacy services were not always conducted by the same staff which reduced patient-pharmacist rapport and confidentiality.
Table 5-3: A summary table of all studies included in this review

<table>
<thead>
<tr>
<th>Author(s) &amp; year</th>
<th>Study design</th>
<th>Number of participants</th>
<th>Pharmacy service</th>
<th>Brief description of the study aim</th>
<th>Key Findings</th>
<th>Theme(s) &amp; subtheme(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baraitser et al. 2007</td>
<td>Mixed methods (surveys and semi-structured interviews)</td>
<td>80 clients completed questionnaires and 24 were interviewed</td>
<td>Chlamydia testing</td>
<td>Evaluate the feasibility and acceptability to users and pharmacists for chlamydia testing in independent community pharmacies</td>
<td>Most clients heard about the service from the pharmacist when requesting emergency contraception and 16% (n = 13) would not otherwise have been tested. 80% of questionnaire respondents were “very satisfied” and 14% were “satisfied”. All felt “very comfortable” or “comfortable” discussing sexual health with the pharmacist. Clients valued the speed and convenience of the service and the friendly, non-judgmental approach of the pharmacist. Confidentiality when asking for the service at the counter was suboptimal.</td>
<td>Public cognizance: awareness and use of pharmacy services</td>
</tr>
<tr>
<td>Tinelli et al. 2007</td>
<td>Questionnaire at baseline and follow up of RCT</td>
<td>1232 patients at baseline and 1085 at follow up</td>
<td>Medicines management service</td>
<td>To assess patient satisfaction with, attitudes towards, and expectations of or experiences with community pharmacy in general, and to evaluate the effect of community pharmacy-led management service on these factors</td>
<td>The respondents indicated that they wanted pharmacists to provide dispensing, medications review, advice on medications and health, private consultation areas, and short visit times. At follow-up, intervention patients were more likely than control patients (p&lt; 0.01) to rate the service provided by their pharmacist with a higher level of satisfaction, and most intervention patients stated a preference for seeing their physician to discuss their</td>
<td>Public cognizance: physicians’ authority</td>
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Attitudes towards services: service vs. non service users, perceived impact
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Setting</th>
<th>Description</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bissell et al. 2008</td>
<td>Semi-structured interviews</td>
<td>49 patients</td>
<td>Medicines management service</td>
<td>To describe patients’ experiences of a medicines management service provided by community pharmacists for people with coronary heart disease.</td>
<td>Majority of patients reported positive experiences with pharmacist consultations. In particular, respondents reported deferring less to the pharmacist than they would have done to their doctor. Findings suggest that although patients cautiously welcomed the opportunity to consult with a pharmacist about their medicines, they had reservations about them making recommendations about treatment, and many still regarded the doctor as the health professional ‘in charge’ of their medicines.</td>
</tr>
<tr>
<td>Stewart et al. 2008</td>
<td>Questionnaire</td>
<td>103 patients</td>
<td>Pharmacist prescribing</td>
<td>To explore patients’ perspectives and experiences of pharmacist supplementary prescribing in Scotland.</td>
<td>89.3% of patients agreed/strongly agreed that they were satisfied with the consultation. Most patients were positive in their attitudes, agreeing that they would recommend a pharmacist prescriber to others and that they had trust in the pharmacist. However, 65% would prefer to consult a doctor.</td>
</tr>
<tr>
<td>Stewart et al. 2009</td>
<td>Semi-structured interviews</td>
<td>18 patients</td>
<td>Pharmacist prescribing</td>
<td>Explore the perspectives of pharmacist supplementary prescribers, their linked independent prescribers and patients, across a range of settings in Scotland</td>
<td>Generally, patients were supportive of pharmacists as supplementary prescribers. Although patients raised no concerns, they had little idea of what to expect on their first visit, leading initially to feelings of apprehension. They praised the quality and extent of discussion relating to their medications, although this was less marked than in control patients (76% vs. 85%; P&lt; 0.01).</td>
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</table>

Public cognizance: perceptions of pharmacists, physicians’ supremacy

Attitudes towards services: perceived impact, facilitators
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Research Question</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinelli et al. 2009 75</td>
<td>Discrete choice</td>
<td>204 patients</td>
<td>To investigate patients’ preferences for an innovative combined prescribing and dispensing role for pharmacists in the management of drug therapies, compared to the more traditional dispensing-only role</td>
<td>Respondents preferred their ‘current’ service to either the proposed combined prescribing-and-dispensing role or a dispensing-only service. Quality of treatment and cost were most influential attributes for choice of service and to a lesser extent waiting times.</td>
</tr>
<tr>
<td>Dhital et al. 2010 59</td>
<td>Semi-structured</td>
<td>102 service users</td>
<td>Alcohol screening and brief interventions</td>
<td>Accessibility and anonymity were reported as positive aspects and concerns were expressed about lack of privacy, time and whether pharmacists were knowledgeable or had suitable training to conduct screening and brief interventions.</td>
</tr>
<tr>
<td>Hobson et al. 2010 60</td>
<td>Semi-structured</td>
<td>18 patients</td>
<td>Pharmacist prescribing</td>
<td>It was apparent that participants’ awareness of the training and knowledge of pharmacists was low. Some comments were made which suggest that the pharmacist is not held in very high regard by some people. Participants expressed concerns about clinical governance, privacy and whether sufficient space was available to provide the service in community pharmacies. Participants acknowledged the expert drug knowledge</td>
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All were satisfied with the service and trusted the pharmacist.
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Domain</th>
<th>Objective</th>
<th>Findings</th>
<th>Public Cognizance: Awareness and Use of Pharmacy Services, Perceptions of Pharmacists, Physicians' Supremacy, Attitudes Towards Services: Service vs. Non-service Users, Facilitators, Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krska et al. 2010</td>
<td>Questionnaire</td>
<td>177 members of the public</td>
<td>Weight management</td>
<td>To determine the public's views on weight-management services, including pharmacies as a potential venue, and the extent of current pharmacy involvement</td>
<td>There was greater awareness of commercial weight-management clinics than of NHS-led initiatives. Pharmacies and pharmacists were not favoured as sources of advice on weight management.</td>
<td>Public cognizance: awareness and use of pharmacy services, perceptions of pharmacists, physicians' supremacy, attitudes towards services: service vs. non-service users, facilitators, barriers</td>
</tr>
<tr>
<td>Krska &amp; Morecroft, 2010</td>
<td>Questionnaire</td>
<td>300 healthy adults</td>
<td>Public health</td>
<td>To determine the views of healthy adults on the importance of activities aimed at improving public health, on the role of community pharmacies in contributing to these and the range of potential pharmacy-based public health services</td>
<td>Only 23% considered that pharmacies were the best place from which to seek general health advice, irrespective of frequency of pharmacy use. 49% of respondents considered general practitioners to be the best source of public health advice, but 23.0% selected pharmacies. There was a general lack of awareness of pharmacy capacity and role in public health. However, most supported the provision of specific services by pharmacies, especially among frequent pharmacy users. Access and long opening hours were the main facilitating factors mentioned, together with pharmacist knowledge. A significant proportion of respondents said they would not use pharmacy as a source of public health advice, due to issues around confidentiality, privacy, space and busyness.</td>
<td>Public cognizance: awareness and use of pharmacy services, perceptions of pharmacists, physicians' supremacy, attitudes towards services: service vs. non-service users, facilitators, barriers</td>
</tr>
<tr>
<td>Mackridge et al. 2010</td>
<td>Focus groups</td>
<td>20 problematic drug users</td>
<td>Problematic drug users</td>
<td>To qualitatively explore the feasibility and desirability of further developing community pharmacy</td>
<td>Many of the service users in the study were not aware of services beyond needle and syringe programs and substitution therapy. Many service users perceived</td>
<td>Public cognizance: awareness and use of pharmacy services, perceptions of pharmacists, physicians' supremacy, attitudes towards services: service vs. non-service users, facilitators, barriers</td>
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</table>
services to meet the wider health needs of problematic drug users. Existing services were suboptimal especially with regard to privacy, as a major concern. Good rapport between users and regular staff was highlighted as an important factor in good quality services. Pharmacies were consistently identified as having key opportunities to make useful health interventions within a range of therapeutic areas. The most widely supported roles were based around information provision and signposting.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Method</th>
<th>Sample Size</th>
<th>Service/Screening</th>
<th>Evaluation</th>
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<tbody>
<tr>
<td>Stewart et al. 2011</td>
<td>Questionnaire</td>
<td>105 patients</td>
<td>Pharmacist prescribing</td>
<td>To evaluate views of patients across primary care settings in Great Britain who had experienced pharmacist prescribing. The vast majority agreed/strongly agreed that they were totally satisfied with their consultation and confident that their pharmacist prescribed as safely as their general practitioner (GP). Pharmacists were considered approachable and thorough, and most would recommend consulting a pharmacist prescriber. A small minority felt that there had been insufficient privacy and time for all their queries to be answered.</td>
</tr>
<tr>
<td>Taylor et al. 2012</td>
<td>Questionnaire</td>
<td>97 service users and 261 non-service users</td>
<td>Cardiovascular screening</td>
<td>To determine whether pharmacy-based cardiovascular disease (CVD) screening reached the desired population, the local population's awareness of pharmacy screening and the views of service users and the general public about CVD screening. The overall majority of service users (99.7%) had a positive experience of the screening service, agreeing that they were given enough time and pharmacists made them feel at ease. Perceived concerns about confidentiality and lack of privacy were among barriers identified to taking up screening. Only 9% of non-users were aware of the pharmacy service. Significantly more service users (90.7%) agreed that a pharmacy was a good place to screen for CVD compared to non-users.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Participants</td>
<td>Research Question</td>
<td>Findings</td>
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<tr>
<td>Gidman and Cowley, 2013</td>
<td>Focus groups</td>
<td>26 members of the public</td>
<td>Pharmacy services in general</td>
<td>To understand the public’s opinions and experiences of pharmacy services. Participants made positive comments about pharmacy services although many preferred to see a general practitioner (GP). Participants discussed using pharmacies for convenience, often because they were unable to access GPs. Pharmacists were perceived principally to be suppliers of medicine, although there was some recognition of roles in dealing with minor ailments and providing advice. The pharmacy environment and retail setting were not considered to be ideal for private healthcare consultations.</td>
</tr>
<tr>
<td>Latif et al. 2013</td>
<td>Multi-method (observations and semi-structured interviews)</td>
<td>Observations of 54 patient–pharmacist MURs consultations and subsequent interviews with 34 patients.</td>
<td>MUR</td>
<td>To describe patients’ perspective of the MUR service and their understanding of the value that they derive from it. When describing interactions with the pharmacist, participants’ expectations did not extend to having private ‘sit down’ discussions either about medicines or any other health related matter. All patients reported feeling comfortable speaking with the pharmacist, who they saw as a knowledgeable expert on medicines. They appreciated the time spent with them in a private consultation. The MUR provided patients with reassurance about their medicines. Participants considered that authority over their prescribed medicines rested with their GPs or specialist prescriber.</td>
</tr>
<tr>
<td>Maclure et al.</td>
<td>Questionnaire</td>
<td>1,855 members of Pharmacist</td>
<td>To explore the views of the</td>
<td>Views expressed by many indicated a lack of screening compared to the non-users (77.4%; (P &lt; 0.005)). Public cognizance: awareness and use of pharmacy services, perceptions of pharmacists, physicians’ supremacy Attitudes towards services: facilitators, barriers</td>
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</table>

Impact, facilitators, barriers Public cognizance: awareness and use of pharmacy services, perceptions of pharmacists, physicians’ supremacy Attitudes towards services: facilitators, barriers
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Methodology</th>
<th>Participants</th>
<th>Topic</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>al. 2013</td>
<td>the public</td>
<td>Scottish general public on non-medical prescribing.</td>
<td>Some noted that non-medical prescribers should only prescribe medicines within their competence and appropriate to their fields of practice. Respondents perceived the key benefit of non-medical prescribing to be enhanced patient convenience arising from reduced appointment times. Many voiced concerns around the need to access patients’ medical notes prior to any prescribing decisions or actions being taken.</td>
<td></td>
</tr>
<tr>
<td>Twigg et al. 2013</td>
<td>Focus groups</td>
<td>25 patients</td>
<td>Diabetes</td>
<td>All participants identified that the primary expertise of the community pharmacist as medicines supply and advice regarding over-the-counter preparations and the interactions with their prescribed medicines. There were differing views about how much further the pharmacist’s role extended to advising on prescription medicines and diseases advice. However, even those participants who identified the pharmacist as their first port of call would not necessarily act on advice without first confirming it with their doctor. More experienced participants saw pharmacist as an easy and convenient alternative when GP hard to access. Participants still had concerns about the pharmacy being somewhere they would be willing to discuss private medical problems.</td>
</tr>
<tr>
<td>Anderson &amp; Thornley,</td>
<td>Questionnaire</td>
<td>921 patients</td>
<td>Flu vaccination</td>
<td>921 patients completed a survey in the 13 pharmacies selected. Of these, 199 (22%)</td>
</tr>
</tbody>
</table>

Public cognizance: awareness of the healthcare professional’s training. Some noted that non-medical prescribers should only prescribe medicines within their competence and appropriate to their fields of practice. Respondents perceived the key benefit of non-medical prescribing to be enhanced patient convenience arising from reduced appointment times. Many voiced concerns around the need to access patients’ medical notes prior to any prescribing decisions or actions being taken.
were eligible to get their flu vaccination for free. Of the 199 patients who were eligible for free treatment, 100 (50%) had been contacted by their GP surgery to go for their vaccination, but had chosen not to go. Reasons given include accessibility, convenience and preference for pharmacy environment. Only 1% visited pharmacy in general (12/921) due to trust in the pharmacist.

Fakih et al. 2014

Quest

Questionnaire

215 women in Nottingham UK and 395 in Victoria, Australia

Weight loss treatment

To compare women pharmacy consumer experiences with weight loss treatment between Victoria, Australia and Nottingham, UK.

The majority of women (n = 334/436) felt comfortable receiving advice from pharmacists. In the logistic regression analysis women in Nottingham were found to be significantly less likely to have utilised a pharmacy weight management program in the last five years (OR: 0.23 CI: 0.08, 0.63) and were significantly less likely to want an ideal weight management program located in a pharmacy (OR: 0.49 CI: 0.30, 0.82) compared to women in Victoria. Women who had sought a pharmacist’s advice on health, in the last 12 months, were significantly more likely to want a pharmacist in their ideal weight management program (OR: 2.29 CI: 1.35, 3.90)

Hill et al. 2014

Quest

86 service users

Pharmacist prescribing in addiction services

To establish the efficacy or accessibility of pharmacist prescribing among stakeholders and service users.

Patients were very pleased with the use of pharmacist prescribing clinics. When asked to rate the pharmacist’s prescribing capability, 80 patients (93%) rated a 5 (very satisfied). The majority of patients agreed it was easy to make appointments,
Krska and Mackridge, 2014

Mixed methods study (survey, nominal group technique and telephone interviews)

150 members of the public completed questionnaires, 3 members of the public attended the nominal group technique and 10 service users were interviewed

Alcohol screening and brief advice

To explore the views of the general public and other stakeholders towards pharmacy-based alcohol screening and advice services

The general public viewed pharmacy-based alcohol screening services as acceptable and feasible. Privacy was the main concern of the public, but 80% were comfortable discussing alcohol in a pharmacy. Ten service users interviewed all considered the experience positive and all would recommend the service, but most wanted the service to be delivered in a private area.

Lowrie et al. 2014

Semi-structured interviews

65 patients

Heart failure service

To explore and portray in detail, the perspectives of patients receiving, and pharmacists delivering an enhanced, pay for performance community pharmacy HF service.

Patients were comfortable discussing symptoms and medicines with pharmacists; they identified pharmacists as fulfilling roles that were needed but not currently addressed. Patients reported the service helped them to enact HF medicines and HF self-care management strategies. Some used the pharmacist as a first port of call, to help decide whether to self-refer to a GP.

Saramunee et al. 2014

Focus groups

16 members of the general public

Public health services

To explore experiences and views of 4 groups of participants, the general public, PHs, general practitioners (GPs), and other stakeholders (STs) on pharmacy-based public

Accessibility and convenience were the advantages agreed by most participants. Barriers that could inhibit service utilization are perceptions of the general public toward pharmacists’ competencies, privacy and confidentiality in pharmacies, high dispensing workload, and inadequate
health services, and identify potential factors affecting service use. financial support. There was agreement among all participant groups that pharmacy-based public health services lacked publicity. A variety of promotional techniques were mentioned as potentially useful, including posters/leaflets, media advertising, and recommendation by GPs.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Methodology</th>
<th>Sample</th>
<th>Topic</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tucker &amp; Stewart, 2014</td>
<td>Semi-structured interviews</td>
<td>25 patients</td>
<td>Skin problems</td>
<td>Explore the reasons why patients with undiagnosed skin problems seek advice at pharmacies. Key themes around choice of pharmacy were convenience of professional advice, triage to general practitioner (GP) care if warranted, inaccessibility of GP care and perceived non-serious nature of the condition. Interviewees also described high levels of trust in their pharmacists. Few concerns centred on lack of privacy and the potential for misdiagnosis. Almost all participants felt positive about their pharmacy care and would re-visit for future skin problems.</td>
</tr>
<tr>
<td>Fitzgerald et al. 2015</td>
<td>Questionnaire</td>
<td>1573 members of the public</td>
<td>Alcohol interventions</td>
<td>Determine the Scottish general public’s views regarding the role and involvement of community pharmacists in reducing alcohol consumption. More than half (56.4%, 888) agreed that pharmacists could advise on safer alcohol consumption. Those agreeing expressed high levels of support (70% agreement) for all activities. However 78% of respondents preferred to discuss issues with doctors other than pharmacists. There was a high level of agreement of trust that pharmacists would discuss issues confidentially (68.7%, 1080), with a similar proportion (64.3%, 1011) agreeing that they would be concerned over privacy in a community pharmacy.</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Participants</td>
<td>Service/Care</td>
<td></td>
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<tr>
<td>McCann et al. 2015</td>
<td>Focus groups</td>
<td>34 patients</td>
<td>Pharmacist prescribing</td>
<td>The aim of the study was to explore patients’ perspectives of pharmacists as prescribers. There was an overwhelming lack of awareness of pharmacist prescribing. Patients discussed the importance of a multidisciplinary approach to their care and recognized limitations of the current model of prescribing. They felt that the doctor and pharmacist had varied yet complementary skills, all of which contributed to their overall care. The majority of participants could not think of any disadvantages to having a pharmacist prescribe for them, with the exception of concerns over responsibility and being limited to one area. Patients were generally very positive about this form of practice.</td>
</tr>
<tr>
<td>Saramunee et al. 2015</td>
<td>Mixed methods (surveys followed by a focus group discussion)</td>
<td>908 public members completed questionnaires and 5 participants in the focus group discussion</td>
<td>Cardiovascular public health services</td>
<td>To explore the experience of and willingness to use seven pharmacy public health services related to cardiovascular risk among the general public in England. Few respondents (2.1-12.7%) had experienced any of the seven pharmacy public health services. Frequent service users were more likely to use services. Focus group discussions identified barriers to service use; for example, frequent staff changes, seeing pharmacist as medicines suppliers and concerns about competence for these services.</td>
</tr>
<tr>
<td>Wood et al. 2015</td>
<td>Focus groups</td>
<td>25 people aged ≥ 65 years</td>
<td>Community pharmacy services in general</td>
<td>To explore older people’s opinions of current community pharmacy. The ability to build a trusting relationship over time was important to the people in this study. There was a general lack of</td>
</tr>
</tbody>
</table>
provision and identify potential areas for improvement.

awareness of the range of services available within community pharmacies, with some participants only recognising the dispensing role. Good communication from the community pharmacy helped to improve the experience. Specific concerns included cleanliness and privacy.

Of those 191 current non-users, 33% (n = 64) indicated that they would consider using this method if it was available at the pharmacy. The main perceived advantages of attending the pharmacy were quicker appointments (52%) and easier access (47%).

The experience of developing a trusting relationship with the pharmacist is an important consideration in the context of community pharmacy accessibility. There is also a perceived lack of awareness among the general public about the extended role of community pharmacy. Participants described several experiences where they felt guilty about using the doctor for healthcare advice or to access a public health service.

All women welcomed the interventions indicating the benefit of having different options available. They also identified possible advantages and disadvantages of each intervention. A few women questioned whether it was the role of the pharmacist to undertake contraception.

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<td>To describe how care is perceived and experienced in community pharmacies with particular focus on community pharmacy access.</td>
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<tr>
<td>Rodgers et al. 2016</td>
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<td>Medicines related services, particularly MUR and NMS</td>
<td>To compare the perceptions of pharmacists and the general public on medicines related services, particularly MUR and NMS services.</td>
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*Attitudes towards services: facilitators*
| Saramunee et al. 2016 | Questionnaire | 2661 members of the public | Public health services | To identify attitudes towards pharmacy characteristics and promotional methods for selected pharmacy public health services among different sectors of the general public | There were strong preferences for a pharmacy near to home or doctor’s surgery and for long opening hours. Fifty percent preferred not to use a pharmacy in a supermarket. Personal recommendation by health professionals or family/friends was reported as most likely to encourage uptake of pharmacy public health services. | Public cognizance: promotional strategies | Attitudes towards services: facilitators, barriers |
**Discussion**

To the authors’ knowledge, this is the first systematic review that has focused on patient and public perspectives specific to UK community pharmacy services. The past decade has seen the initiation of novel services and extended roles within a revised community pharmacy contractual framework. This review focused on gaining a deeper understanding of how these recent policy changes may have influenced patient and public views. Findings will also help to identify barriers to providing community pharmacy services which effectively meet patients’ needs, enhancing recommendations to policy makers.

The current review builds upon and extends the findings of two previous systematic reviews. There was similarity with these earlier reviews in that the perceived impact of pharmacy services was high despite low awareness. However, the current review provides a detailed account of the factors facilitating the use of pharmacy services and physicians’ influence on the public’s view of pharmacy services. In addition, the current review has provided evidence specific to MURs, the NMS, and pharmacist prescribing, none of which have been explored previously. Furthermore, the substantial increase in qualitative studies within the last decade allowed for a comprehensive understanding and description of findings in this review.

This review focused on the UK, which was effective in reducing studies to those conducted in a single administrative and organizational context. However, this served as a possible limitation in that other countries may have provided pertinent findings, particularly ones with similar advancements in community pharmacy such as the USA, Canada, Australia, and New Zealand. Another limitation was the omission of independent multiple-author study selection and data extraction to reduce bias. However, data extraction was reviewed and discussed thoroughly with the co-authors. Although not an exclusive community pharmacy role, the perceptions of pharmacist prescribing provided additional depth to the review, and were applicable to community pharmacy services more generally.

International literature addressing the first theme, "public cognizance," confirms that low public awareness is not exclusive to the UK. The considerable lack of awareness of extended pharmacy services and pharmacist roles suggests that more could be done to
promote the pharmacy setting as an attractive venue for healthcare delivery. Nevertheless, little has been done in the way of promoting pharmacy services or enhancing public understanding of pharmacists’ knowledge and skills. In relation to promotional strategies, patients in a Canadian study perceived word of mouth from pharmacy staff as the most effective method which correlated with findings in this review. However, international literature exploring effective promotional methods is also lacking. Moreover, pharmacists’ low confidence or unwillingness to perform non-traditional roles, together with the belief that balancing dispensing duties with extended services is unachievable, also needs to be addressed.

Perceptions of physicians being at the top of the healthcare hierarchy were also common in other countries, including Australasia, North America, Europe and Middle East. This is borne out in evidence where physician-pharmacist collaboration in clinical settings has been shown to significantly improve patient outcomes. However, physicians have shown a reluctance to support pharmacist integration due to their unawareness of extended services. Moreover, physicians believe that clinical roles are better suited for themselves, that pharmacists lack the training or ability to carry out extended roles, and have suspicion of pharmacists’ financial motives. Physicians have also been concerned that extending pharmacist roles and granting them more access to patient information would compromise patient confidentiality and threaten physicians’ healthcare authority. In order to achieve better recognition and integration of physician and pharmacy services, it will be crucial to develop a better understanding of each other’s knowledge, skills and potential contribution to patient care. In England, there has been a recent national initiative to introduce 490 clinical pharmacists across 650 general practice (GP) surgeries in phase 1, and a further 1500 in phase 2, which aims to use pharmacists’ clinical skills and knowledge to relieve pressures on physicians and thus optimising patient care. Initial feedback from the first phase has revealed improved integration between clinical pharmacists and other members of the healthcare team.

Regarding patient and public attitudes towards pharmacy services, international literature confirms findings from this review that the convenience of community pharmacies and having well-established patient-pharmacist relationships are key facilitators for the usage of pharmacy services. So if it is indeed important that patients experience services in order to build rapport with their pharmacists, fully acknowledge their worth and
consider recommending them to peers, then public promotion campaigns can only go so far. Furthermore, when designing effective community pharmacy services, it will be important to take patients’ preferences into account, where access to and convenience of pharmacy services is particularly valued.

Privacy and confidentiality of the pharmacy environment, or rather the lack thereof, was considered a major barrier for using advanced pharmacy services. Moreover, patient and public awareness of private consultation rooms remains low, despite their existence being a requirement of the new community pharmacy contract. Furthermore, patients/the public perceived pharmacists’ limited authority to be a barrier for broadening roles. Whilst the introduction of pharmacist independent prescribing in 2006 has gone some way to overcoming this, integration within the wider primary care team remains crucial. The introduction of “summary care records”, a scheme introduced in 2016, which permits a range of healthcare professionals, including pharmacists and pharmacy technicians, to access core clinical and medication information, with the patient’s consent, may prove to be another important step towards integration and autonomy.

**Conclusion**

This systematic review provides an update of patient and public perceptions of community pharmacy services since the introduction of a revised contractual framework for community pharmacy in the UK, which introduced funding for cognitive services. Whilst the majority of literature suggests that patient and public opinions about community pharmacy services are positive, awareness of pharmacy services beyond medicines supply remains low. Patients still look to their physicians, so successful integration of pharmacy services into the primary care pathway will be essential. For this to be achieved, pharmacists’ clinical skills beyond medicines supply need to be recognised and embraced by patients and physicians alike. Furthermore, potential barriers within pharmacy, such as low pharmacist confidence, reorganisation of workload to accommodate high quality services effectively and the potential conflict a commercial environment poses, also need to be addressed. Ease of access and convenience of pharmacies present a major advantage for their usage. Future research should explore different approaches to increasing awareness, evaluate the effectiveness of
different methods of promotion, and understand what the public as well as other stakeholders consider to be effective.

References


100. Torjesen I. More than 400 pharmacists will be recruited to GP surgeries by next year. *BMJ*, 2015; 351: h6167.


Supporting Information

Appendix 5a: Search strategy for each database

Appendix 5b: Critical appraisal using the nine item checklist by Hawker et al
Appendix 5a: Search strategy for each database

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- 2005-Present filter activated for all searches
- Mapping= matches terms with the controlled vocabulary of the database
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- Filters for all searches: Publication date from 2005/01/01 to 2016/12/31
- MeSH: Medical subject heading: a comprehensive controlled vocabulary
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- DOCTYPE (ar or re) = document type either Article or Review
- Timeline: 2005-present activated for all searches
- Scopus automatically searches for plurals
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- 2005-present filter activated for all searches
- Mapping= Matches terms with the controlled vocabulary of a database
### Science Direct

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- Journal tab was applied for all searches
- 2005-present filter activated for all searches
- Using the singular form of a word finds the singular, plural, and possessive forms of most words.

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- Timeline 2005-2016 applied for all searches
- When a singular word is searched, the plural and possessive forms of that word will also be searched
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- 2005-present filter activated for all searches
Appendix 5b: Critical appraisal using the nine item checklist by Hawker et al.

*Good* = 4 points, *Fair* = 3 points, *Poor* = 2 points, *Very poor* = 1 point

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*1. Abstract and title: Did they provide a clear description of the study? 2. Introduction and aims: Was there a good background and clear statement of the aims of the research? 3. Method and data: Is the method appropriate and clearly explained? 4. Sampling: Was the sampling strategy appropriate to address the aims? 5. Data analysis: Was the description of the data analysis sufficiently rigorous? 6. Ethics and bias: Have ethical issues been addressed, and what has necessary ethical approval gained? Has the relationship between researchers and participants been adequately considered? 7. Results: Is there a clear statement of the findings? 8. Transferability or generalizability: Are the findings of this study transferable (generalizable) to a wider population? 9. Implications and usefulness: How important are these findings to policy and practice?

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<th>Saramunee et al. 2016</th>
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<td>3.3 ± 0.7</td>
<td>3.3 ± 0.6</td>
<td>3.1 ± 0.6</td>
<td>3.3 ± 1.0</td>
<td>2.2 ± 0.6</td>
<td>3.6 ± 0.6</td>
<td>2.8 ± 0.7</td>
<td>3.2 ± 0.6</td>
<td>28.1 ± 3.4</td>
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*1. Abstract and title: Did they provide a clear description of the study? 2. Introduction and aims: Was there a good background and clear statement of the aims of the research? 3. Method and data: Is the method appropriate and clearly explained? 4. Sampling: Was the sampling strategy appropriate to address the aims? 5. Data analysis: Was the description of the data analysis sufficiently rigorous? 6. Ethics and bias: Have ethical issues been addressed, and what has necessary ethical approval gained? Has the relationship between researchers and participants been adequately considered? 7. Results: Is there a clear statement of the findings? 8. Transferability or generalizability: Are the findings of this study transferable (generalizable) to a wider population? 9. Implications and usefulness: How important are these findings to policy and practice?
Chapter Guide:

This chapter presents the manuscript for Study One Part 2 which was published in Health & Social Care in the Community in 2018.

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<td><strong>Manuscript type</strong></td>
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<tr>
<td><strong>Authors</strong></td>
<td>Ali M. K. Hindi, Ellen I. Schafheutle, Sally Jacobs</td>
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<td><strong>Journal</strong></td>
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<td><strong>Submission Status</strong></td>
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*Note: The formatting and layout are consistent with the requirements for the journal. Therefore, references will be placed at the end of this chapter rather than at the end of the thesis.*
Solidarity or Dissonance? A Systematic Review of Pharmacist and GP Views on Community Pharmacy Services in the UK

Ali M.K. Hindi* (BPharm, MSc)  
Ali.hindi@manchester.ac.uk

Sally Jacobs (BSc, PhD)  
Sally.jacobs@manchester.ac.uk

Ellen I. Schafheutle (PhD, MRes, MSc, FRPharmS, FFRPS)  
Ellen.schafheutle@manchester.ac.uk

*Author for correspondence

Full postal address for all:  
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry;  
School of Health Sciences; Faculty of Biology, Medicine and Health, The University of Manchester, 1st Floor Stopford Building, Oxford Road, Manchester M139PT, United Kingdom
Abstract

There has been a strong policy emphasis over the past decade on optimising patient-centred care and reducing general practitioners’ (GPs’) workload by extending community pharmacy services and collaboration between pharmacists and GPs. Our aim was to review current evidence of pharmacists’ and GPs’ views of extended community pharmacy services and pharmacists’ roles in the United Kingdom (UK). A systematic review was undertaken looking at UK studies investigating pharmacists’ and/or GPs’ views of community pharmacy services or roles from 2005-2017. A range of databases were searched including EMBASE, PubMed, Scopus, Web of Science, International Pharmaceutical Abstracts (IPA), PsycINFO, Science Direct and The Cumulative Index to Nursing and Allied Health Literature (CINAHL). In addition, reference lists of included studies were screened and grey literature was searched. Following the application of inclusion/exclusion criteria, the quality of papers was critically analysed, findings were extracted into a grid and subjected to narrative synthesis following thematic analysis. The search strategy yielded a total of 4,066 unique papers from which 60 were included. Forty-seven papers covered pharmacists’ views, nine combined both pharmacists’ and GPs’ views and four covered GPs’ views. Study designs included interviews (n=31, 52%), questionnaire surveys (n=17, 28%) and focus groups (n=7, 12%). Three main themes emerged from the data: “attitudes towards services/roles”, “community pharmacy organisations” and “external influences”. Pharmacists and GPs perceived a number of barriers to successful implementation and integration of pharmacy services. Moreover, collaboration between pharmacists and GPs remains poor despite the introduction of extended services. Overall, extending community pharmacy services require quality-driven incentives and joint working between community pharmacists and GPs to achieve better integration within the patient’s primary care pathway.

Keywords: community pharmacy, general practice, pharmacists, general practitioners, primary care, systematic review
What is known about this topic

- Policy makers have been promoting the expansion of community pharmacy services to relieve existing pressures in general practice.

- There is evidence of low public uptake and awareness for these extended services with the retail context of community pharmacies introducing barriers to successful implementation and integration.

What this paper adds

- Pharmacists were optimistic about the potential value of extended services whilst GPs were more cautious towards their implementation.

- GPs’ awareness of community pharmacy services was low and collaboration with pharmacists remain poor despite the introduction of these services.

- This review highlights the need to incentivise joint working between community pharmacists and GPs to achieve better integration within the patient’s primary care pathway.
Introduction

Healthcare organisations face a progressive increase in patient demand (Abbing, 2016, Baird et al., 2016). The shifting emphasis towards primary healthcare has led to a considerable increase in workload pressure on general practitioners (GPs) (Department of Health, 2012, Baird et al., 2016, NHS England, 2016). As a result, policymakers have emphasised the need to moderate primary care demands via innovative approaches using alternative healthcare channels (NHS England, 2013, Pharmacy Voice, 2016). As providers of primary care, community pharmacies are accessible and convenient, offering long opening hours and non-appointment-based services (Pharmacy Voice, 2016, NHS England, 2017), leading policymakers in the UK (Department of Health, 2008, NHS England, 2013) and other countries (Agomo, 2012, Houle et al., 2014) to promote the expansion of community pharmacy services to relieve existing pressures in general practice.

In recognition of this, the UK National Health Service revised the community pharmacy contractual framework for England and Wales in 2005 followed by Scotland in 2006. The revised contracts implemented novel reimbursement structures for a range of public health and medicines-related services (Pharmacy Voice, 2016). In England, the revised contractual framework consists of three types of service: “essential”, “advanced” and “locally commissioned”. “Essential services” cover traditional services provided by all community pharmacies (i.e. dispensing medications/appliances, repeat dispensing and signposting). “Advanced services” focus on medication reviews conducted by pharmacists in the form of one-to-one consultations. “Locally commissioned services” include a wide range of medication and public health services such as minor ailments management, lifestyle advice, substance misuse, and sexual health services (Agomo, 2012). To preserve patient privacy and confidentiality, consultation rooms became a prerequisite for community pharmacies subject to specific privacy requirements (PSNC., 2015). Similar novel services exist in Scotland (NHS Education for Scotland), Wales (Community Pharmacy Wales, NHS Wales, 2011), Northern Ireland (Health and Social Care Board, 2014) as well as other countries outside the UK such as the United States (Pellegrino et al., 2009), Canada (Canadian Pharmacists Association., 2016), Australia (White et al., 2012) and New Zealand (Central TAS, 2014).
Despite these reforms, there have been concerns regarding the provision and quality of extended pharmacy services (Bush et al., 2009, McDonald et al., 2010). Moreover, with evidence of low public uptake and awareness, demand for some of these services has been questionable (Eades et al., 2011, Famiyeh & McCarthy, 2017, Hindi et al., 2017). Furthermore, there have been concerns over the retail context of community pharmacies introducing structural and organisational barriers to integration between community pharmacies and GP practices (Royal Pharmaceutical Society, 2015, Jacobs et al., 2017). Consequently, pharmacists have been skeptical towards role expansion (Anderson et al., 2003, Eades et al., 2011, Hall et al., 2018) and GPs have been reluctant to accept extended services despite their potential to reduce their pressure and workload (McGrath et al., 2010, Smith et al., 2014, Dhillon et al., 2015, Hossain et al., 2017).

Recently, the UK government stated their intention to further extend community pharmacy services and implement new strategies to strengthen lines of communication between community pharmacies and GP practices (Department of Health, 2016, NHS England., 2017). In line with these recent policy changes, it is important to understand both pharmacists’ and GPs’ views of community pharmacy services to ascertain the extent to which they may become integrated into the patient pathway.

The aim of this article is to review current evidence of pharmacists’ and GPs’ perspectives regarding extended community pharmacy services and pharmacists’ roles in the UK.

**Methods**

The methods used for this study followed the key principles for systematic reviews (Petticrew & Roberts, 2006) and used narrative approach to report findings in a descriptive manner. This approach was particularly insightful for synthesising disparate evidence to inform healthcare policy making (Mays et al., 2005).
Information sources and search strategy
Eight academic databases (EMBASE, PubMed, Scopus, Web of Science, International Pharmaceutical Abstracts (IPA), PsycINFO, Science Direct and The Cumulative Index to Nursing and Allied Health Literature (CINAHL)) were searched for UK literature published from 2005 to 2017. Search terms were developed by all authors (see Table 6-1). Specific search strategies for each database are provided in Appendix 6a. In addition, references of included studies were scanned and Google Scholar was used to search for grey literature. The search took place in October/November 2017.

Table 6-1: Search terms used for the review

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<th>Concept</th>
<th>Search Terms</th>
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<tr>
<td>Perspectives</td>
<td>Perspective(s) OR preference(s) OR view(s) OR opinion(s) OR perception(s) OR awareness</td>
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<td>AND</td>
<td>Pharmacist(s) OR “general practitioner(s)” OR physician(s) OR doctor(s) OR “family doctor(s)” OR “family physician(s)”</td>
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<td>AND</td>
<td>“community pharmacy” OR “community pharmacies” OR “community pharmacist(s)”</td>
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<td>AND</td>
<td>Service(s) OR “pharmaceutical care” OR “public health” OR “medication therapy management” OR “long term care”</td>
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Data screening
Titles and abstracts were initially screened against the inclusion/exclusion criteria, followed by screening of the full text (see Table 6-2). Study screening was undertaken by the lead author. All papers to be potentially included in the review were discussed with the co-authors. Final decisions on inclusion/exclusion of papers were agreed jointly.
Table 6-2: Inclusion and exclusion criteria

<table>
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<th>Inclusion Criteria</th>
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<tr>
<td><strong>Setting:</strong> Community pharmacy</td>
<td><strong>Design/Study type:</strong> All types of reviews.</td>
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<td><strong>Location:</strong> UK</td>
<td>Randomised control trials (RCTs) with no secondary aim eliciting participants’ perspectives on the service</td>
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<tr>
<td><strong>Design/Study type:</strong> Qualitative and quantitative studies. Randomised control trials (RCTs) with a primary component eliciting participants’ perspectives on the service</td>
<td><strong>Publication type:</strong> Peer reviewed journal papers</td>
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<td><strong>Publication type:</strong> Peer reviewed journal papers</td>
<td><strong>Publication type:</strong> non-peer reviewed papers and conference abstracts</td>
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<tr>
<td><strong>Publication date:</strong> 2005-2017</td>
<td><strong>Focus of study:</strong> Studies not focusing on any pharmacy services/roles or mainly focusing on roles of healthcare professionals other than pharmacists. Studies only assessing clinical/economic outcomes and/or organizational factors/feasibility of services.</td>
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<tr>
<td><strong>Focus of study:</strong> Studies exploring pharmacist and/or GP views on any community pharmacy services and/or extended pharmacist roles that may take place in community pharmacy settings (e.g. independent prescribing)</td>
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Data extraction and synthesis

Data from included articles were extracted independently by the lead author and checked by the co-authors using a data extraction tool. The following data were extracted: author(s), year of publication, study design, number of participants, pharmacy service/roles, study aim, key findings, themes and quality score. A thematic analysis of the findings of included papers was conducted by the lead researcher following a modified version of the phases for thematic analysis described by Braun and Clarke (2006). These phases involved familiarisation with the data, searching for themes, reviewing themes, defining and naming themes, and producing the report. Theme identification involved categorising common findings for each paper under potential themes. Potential themes revealing similar trends and patterns were further analysed to interpret underlying meanings and linked together as initial themes and
subthemes. Initial themes/subthemes were mapped out and evaluated for strength and uniqueness (see Figure 6-2). The final themes/subthemes were revised and agreed with co-authors. A narrative approach was taken to the reporting of study findings within each of the themes/sub-themes.

**Critical appraisal**

The quality of papers included in the review was evaluated by the lead author using a nine-item checklist developed to appraise research from different paradigms (Hawker et al., 2002). These items included: abstract and title, introduction and aims, method and data, sampling, data analysis, ethics and bias, results, transferability or generalizability, implications and usefulness. Papers were rated “Good” (4), “Fair” (3), “Poor” (2), “Very poor” (1) for each of the 9 items. The authors of this appraisal tool did not suggest cut-offs for classifying the total quality of studies (Hawker et al., 2002). Nonetheless, we used cut-offs suggested by researchers who previously used this checklist (Lornec et al., 2014, Braithwaite et al., 2017): ‘low quality’ (9–23 points), ‘medium quality’ (24–29 points) and ‘high quality’ (30–36 points). Overall quality of the literature was evaluated and classified on the basis of the total score (min=9, max=36). Studies were not excluded based on quality, but the score helped to critically appraise findings.

**Results**

**Study selection**

After removing duplicates, a total of 4,066 papers were subjected to initial screening. 601 papers were assessed for eligibility via full-text reading. Of these, 58 papers were included in the review and two additional papers were identified via Google Scholar (Figure 6-1).
Records identified through database searching

Embase, PubMed, Scopus, Web of science, IPA, PsycINFO, ScienceDirect, CINAHL

Records after duplicates removed
(n = 4,066)

Records screened
(n = 4,066)

Records excluded
(n = 3,465)

Full-text articles assessed for eligibility
(n = 601)

Excluded (n = 543)

Do not provide views on pharmacy services or pharmacist roles (n = 11). Roles of different HCPs (n = 3). Non-community pharmacists (n = 2). Impact of extended roles on pharmacist (n = 4). Conference abstracts (n = 210). Other Countries (n = 313).

Papers included in the review
(n = 60)

Additional records identified through google scholar
(n = 2)

Figure 6-1: Flow diagram demonstrating the search procedure
Study characteristics
The majority of study designs involved semi-structured interviews (n=31, 52%), questionnaire surveys (n=17, 28%) and focus groups (n=7, 12%). The remaining papers used either two or more qualitative methods (n=3), mixed methods (n=1) or discrete choice experiments (n=1). More than half of the papers had been published in the last four years (n=34, 57%). Forty-seven papers covered pharmacists’ perspectives, four GPs’ and nine both perspectives. Only three papers looked at perceptions on community pharmacy services in general (Scott et al., 2007, Al Hamarneh et al., 2012, Butterworth et al., 2017) whilst the rest were service(s) specific (see Table 6-3).

Critical appraisal
The overall quality of papers was medium (mean total score 26.1± 3.0) (see Table 6-3). However, most papers did not reflect on ethical issues (confidentiality, sensitivity and consent) and/or potential researcher biases. Only four qualitative papers acknowledged interviewer bias/reflexivity (Pumtong et al., 2008, Thomas et al., 2010, Dabrera et al., 2011, Savage et al., 2013). The majority of papers did not justify sampling strategies/techniques used. All but six papers provided participant demographics. Whilst the methodologies used were appropriate for all papers; some did not provide sufficient details on data collection. Some papers did not clearly explain how themes were derived and provided minimal details on statistical analysis. Findings were clearly stated for most papers and all but one paper explicitly stated implications to policy and/or practice.

Thematic Analysis
Three overarching themes emerged from the data as components influencing service provision/quality in community pharmacies: “attitudes towards services/roles”, “community pharmacy organisations” and “external influences” (Figure 6-2). “Attitudes towards services” provided insights into the mind-sets of pharmacists and GPs regarding extended pharmacy services. “Community pharmacy organisations” and “external influences” explored influences within and outside the pharmacy organisation, respectively.
Figure 6-2: Thematic map of themes/subthemes
Attitudes towards services/roles
This theme described how pharmacists and GPs perceived the concept of extended services and pharmacist roles in community pharmacies. This theme covered three subthemes: “awareness of services/roles”, “perceived value of services/roles” and “pharmacists’ competence and confidence”.

Awareness of services/roles
Pharmacists commonly voiced concerns over the lack of awareness of extended services particularly by patients and members of the public, but also amongst GPs. Studies reporting GP views confirmed their low awareness of extended services (Bradley et al., 2012, Saramunee et al., 2014, Latif et al., 2016, Agomo et al., 2017). Pharmacists believed that a lack of well-defined roles made their responsibilities unclear to patients and GPs and led to services being perceived as crossing GP boundaries (Horsfield et al., 2011, Morton et al., 2015, Mantzourani et al., 2016, Butterworth et al., 2017).

“The public doesn’t fully understand what the pharmacy has to offer. They see us as a supplier of medicines only” (Pharmacist, Saramunee et al., 2014)

Perceived value of services/roles
Pharmacists voiced enthusiasm towards the concept of extended services, commonly referring to the accessibility/convenience of pharmacy services to patients and providing an alternative healthcare destination to GPs. Pharmacists in two studies mentioned potential financial benefits to patients (Pumtong et al., 2008, Butt & Ream, 2016) with one of these studies highlighting the importance of minor ailments to those in highly deprived areas who may not be able to afford over-the-counter medications (Pumtong et al., 2008). Other patient benefits discussed were reassurance (Thomas et al., 2010, Lucas & Blenkinsopp, 2015, Morecroft et al., 2015, Urwin et al., 2016), increased patient confidence (Urban et al., 2008) and improved clinical outcomes (Campion et al., 2007, Latif & Boardman, 2008, Paudyal et al., 2010, Wells et al., 2014, Lucas & Blenkinsopp, 2015, Morecroft et al., 2015, Ogunbayo et al., 2015).
They perceived the main benefit to GPs of extended pharmacy services was to reduce workload pressures (Pumtong et al., 2008, Morecroft et al., 2015, Agomo et al., 2016a, Atkins et al., 2016), freeing up GPs time to deal with more urgent matters (Morecroft et al., 2015, Heller et al., 2017). In terms of their own benefit, most pharmacists viewed these services as an opportunity for role expansion/professional development, improving their relationships with patients (Campion et al., 2007, Pumtong et al., 2008, Paudyal et al., 2010, Butt & Ream, 2016, Latif et al., 2016, Urwin et al., 2016) and GPs (Pumtong et al., 2008, Agomo et al., 2016a). However, this optimism was not entirely shared by all pharmacists as some were less enthusiastic about extended services and roles (Pfleger et al., 2008, Pumtong et al., 2008, Savage et al., 2013, Saramunee et al., 2014, Wells et al., 2014, Ogunbayo et al., 2015, Sohanpal et al., 2016, Butterworth et al., 2017). Interestingly, newly registered pharmacists in one study were more enthusiastic towards role expansion than their veteran counterparts (Butterworth et al., 2017).

“The surgeries are happy that they’re not getting so many people coming in [that] we can deal with. We’re happy because we’re using our professional role and can deal with people quickly and effectively, and the patients are happy because they’re getting medicine free of charge” (Pharmacist, Pumtong et al., 2008)

GPs were generally less positive about extended pharmacy services (Porteous & Bond, 2005, Wilcock & Harding, 2007, Atkins et al., 2016, Latif et al., 2016). Some GPs did not see extended pharmacy services as a priority for them (Wilcock & Harding, 2007), were not convinced that these services reduced their workload (Porteous & Bond, 2005, Atkins et al., 2016, Latif et al., 2016) and preferred services to be simplified (Porteous & Bond, 2005, Wilcock & Harding, 2007). Even when GPs were supportive of community pharmacy services (Wilcock & Harding, 2007, Blenkinsopp et al., 2008, Michie et al., 2014, Morecroft et al., 2015), this was associated with suggestions that they supervised and authorised pharmacists’ activities (Blenkinsopp et al., 2008, Bradley et al., 2012, Michie et al., 2014, Maddox et al., 2016).
Pharmacists’ competence and confidence

Pharmacists emphasised the importance of receiving training in order to provide extended services. In some studies, pharmacists mentioned specific training needs such as communication (Horsfield et al., 2011, Morton et al., 2015, Weidmann et al., 2015, Urwin et al., 2016, Twigg et al., 2017) and clinical (George et al., 2006b, Weidmann et al., 2015) skills. In another study, pharmacists recommended interactive training strategies such as visual scenarios/role plays to be able to develop their skills (Sohanpal et al., 2016). This commonly stemmed from a perceived lack of confidence amongst pharmacists to provide extended services. In two studies, pharmacists highlighted the need to train locum pharmacists to provide the services on offer as many pharmacies hired them (Akram et al., 2012, Butt & Ream, 2016). GPs also often doubted pharmacists’ competence to provide extended services (Blenkinsopp et al., 2008, Bradley et al., 2012, Saramunee et al., 2014, Atkins et al., 2016), expressing concerns with their ability to provide services beyond medicines management (Blenkinsopp et al., 2008, Bradley et al., 2012, Saramunee et al., 2014, Atkins et al., 2016).

“There is a lack of training as to how we will approach patients which I say is one of the challenges and how we would approach patients on you know, giving smoking [cessation advice] erm sort of the social skills side as well, having a general conversation with people and how we would convince them [to change their behavior]” (Pharmacist, Morton et al., 2015)

“I would say that given their training neither nurses nor pharmacists should be independent prescribers, I know its coming but I just don’t think they’ve got the appropriate training” (GP, Blenkinsopp et al., 2008)

Community pharmacy organisations

“Community pharmacy organisations” consisted of three subthemes: “venue and resources”, “management” and “workload”, which described how working in
community pharmacies impacted pharmacists’ ability to manage extended services alongside traditional roles.

**Venue and resources**

Pharmacists commonly identified a lack of access to patient records as a barrier to providing extended services. This was particularly problematic during out of hours when contacting other staff was difficult (Akram et al., 2012) and increased the likelihood of pharmacists making errors (Savage et al., 2013). Many pharmacists also voiced concerns over the suitability or availability of pharmacy consultation rooms. Moreover, they perceived that the retail environment of community pharmacies reinforced negative perceptions of patients towards their suitability as providers of extended healthcare services (Hall et al., 2008, Horsfield et al., 2011, Morton et al., 2015, Michie et al., 2016).

“We feel we are out on a limb, and the only, first, contact we have is when we get a prescription through for a CD (controlled drug), and then we are left wondering what it’s for. It’s like doing a jigsaw and only having half the parts, and trying to make the picture, you know?” (Pharmacist, Savage et al., 2013)

“Health centre would be ideal, they can go and do needles, and they would probably be better placed than us” (Pharmacist, Hall et al., 2008)

**Management**

Pharmacists perceived insufficient management support for extended services, describing pressure to perform services to generate revenue without additional staff or training (Wilcock & Harding, 2008, Wells et al., 2014, Rodgers et al., 2016). GPs were also critical of the way chain pharmacies were run, being suspicious of commercial motives and a lack of continuity of care for patients (Bradley et al., 2012, Agomo et al., 2017).

“The company is pushing too hard for MURs... The method of payment causes increased pressure to perform” (Pharmacist, Urban et al., 2016)

“They want to obviously dispense more items because they get paid for every item, don’t they?” (GP, Bradley et al., 2012)
Workload

Pharmacists frequently mentioned having insufficient time to balance dispensing duties alongside extended services. They acknowledged the need for community pharmacies to employ sufficient pharmacy staff to be able to manage and distribute responsibilities to provide a range of extended services. At times, pharmacists were reluctant to approach patients/provide extended services due to high workload (Horsfield et al., 2011, Evans et al., 2016, Michie et al., 2016, Sohanpal et al., 2016) which was mainly linked to dispensing duties (Saramunee et al., 2014, Ogunbayo et al., 2015, Tucker & Stewart, 2015, Latif et al., 2016). Some reconfigured service delivery (Morton et al., 2015, Latif et al., 2016, Sohanpal et al., 2016) or prioritised information provided due to high workload (Sturrock et al., 2017).

“There’s just not enough pharmacist hours in branch to do everything that pharmacists need to do ... because we are busy you kind of don’t drive it as much as you could” (Pharmacist, Evans et al., 2016)

External influences

“External influences” focuses on factors outside the pharmacy premises which facilitate/hinder the quality and demand of pharmacy services. This theme contains three subthemes: “collaboration with general practitioners”, “promotion of services/roles” and “remuneration”.

Collaboration with general practitioners

Despite both pharmacists and GPs acknowledging the importance of collaboration to optimise the provision of extended services, they commonly perceived collaboration to be poor. This perception was influenced by GPs’ negative attitudes towards pharmacists (George et al., 2006b, Campion et al., 2007, Urban et al., 2008, Wilcock & Harding, 2008, Agomo et al., 2016b, Evans et al., 2016, Latif et al., 2016), GPs being suspicious of pharmacists’ financial motives (Urban et al., 2008) and competition for services (Wilcock & Harding, 2008, Agomo et al., 2016b, Evans et al., 2016, Latif et al., 2016). Examples of poor engagement included lack of GP availability (Mackridge et al., 2010, Savage et al., 2013), patient referrals (Pumtong et
Both pharmacists and GPs believed that collaboration could be improved by enhancing their relationships (Horsfield et al., 2011, Bradley et al., 2012, Wells et al., 2014, Butterworth et al., 2017). However, existing relationships were often perceived as poor and extended services did little to improve this (Pumtong et al., 2008, Paudyal et al., 2010, Bradley et al., 2012, Latif et al., 2016). Even when GPs viewed relationships with pharmacists to be positive, communication was not frequent (Porteous & Bond, 2005, Wilcock & Harding, 2007).

“Having a good relationship with the local GP ...I think to make referrals easier, to feel like you’re part of the team, dealing with it, would obviously help.” (Pharmacist, Horsfield et al., 2011)

“I’ve worked in practices where there’s very often been a pharmacist like you who you get to know personally...The problem is when requests are coming for prescriptions to pay back tablets that have been lent out from a chemist that you’re not really that familiar with, and we start to wonder about what the patient’s up to” (GP, Morecroft et al., 2015)

**Promotion of services/roles**

Lack of publicity for extended services and roles was commonly cited both by pharmacists and GPs. Some pharmacists perceived promotion to be a governmental duty (Dewsbury et al., 2015, Agomo et al., 2016b, Agomo et al., 2017) with recommendations through public health campaigns and advertising (Urban et al., 2008, Horsfield et al., 2011, Agomo et al., 2016b). In one study, pharmacists perceived recommendations by other healthcare professionals, other pharmacists and patients to be the most effective means of raising awareness for medicine-related...
services (Gammie et al., 2016). In another study, pharmacists mentioned recruiting patients to smoking cessation services through GP referrals (Sohanpal et al., 2016).

“I think the main thing is just advertising the service... we have leaflets and things like that but somehow the service still doesn’t appeal ... there will be a percentage of people who will see pharmacists as just dispensers” (Pharmacist, Latif et al., 2016)

**Remuneration**

Pharmacists were undivided in their opinion that remuneration was insufficient for the additional time and work required to perform additional services. Pharmacists were more willing to perform additional services if there were reasonable financial incentives (Latif & Boardman, 2008, Horsfield et al., 2011). Some argued that unless their pharmacy received remuneration for additional services, they would receive less support from employers (Morton et al., 2015, Sohanpal et al., 2016, Ogunbayo et al., 2015). Some even suggested being remunerated directly rather than through their employers (Pumtong et al., 2008, Agomo et al., 2016a). A GP in one study argued that financing extra requirements to provide additional pharmacy services was challenging due to limited NHS funds (Agomo et al., 2017).

“The pharmacy [dispensary] can’t function without us. Um you know, that’s probably the biggest barrier. And employers, um, will look at um, what’s in it for them, its money. Um, you know, because they are out to make money, the patient care um, isn’t really given the priority, unless, there is a monetary value attached to it” (Pharmacist, Ogunbayo et al., 2015)
Table 6-3: A summary table of included studies and quality assessment scores

<table>
<thead>
<tr>
<th>Author(s) &amp; year</th>
<th>Study design</th>
<th>Number of participants</th>
<th>Pharmacy service/role</th>
<th>Brief description of the study aim</th>
<th>Key Findings</th>
<th>Theme(s) &amp; subtheme(s)</th>
<th>Quality score (out of 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porteous &amp; Bond, 2005</td>
<td>Questionnaire</td>
<td>27 GPs</td>
<td>Pharmacist-managed repeat dispensing system</td>
<td>To collect data on GPs’ experiences of the new repeat dispensing system</td>
<td>The system was liked by GPs and most said they would prefer to provide this system or a modified version of it for their patients. Just over half of GPs (15/27, 56%) said that the relationship was not altered by the study. GPs did not like having to sign all three copies of the prescription.</td>
<td>Attitudes towards services/roles: Perceived value of services/roles Community pharmacy organisations: Workload External influences: Collaboration with general practitioners</td>
<td>21</td>
</tr>
</tbody>
</table>
Semi-structured interviews

44 community pharmacists

To investigate pharmacists’ views and experiences of supplying Emergency hormonal contraception (EHC) via a group prescribing protocol in community pharmacies in the UK.

Pharmacists were broadly very positive about their experiences supplying EHC via the group prescribing protocol. Pharmacists identified many benefits of the EHC schemes for clients, in particular, improved access to EHC at no cost to clients. The confidential nature of the scheme was also seen as an advantage as was the scope for referral to other service providers. Pharmacists also believed that the scheme had benefits for the profession in terms of enhanced professional standing.

**Attitudes towards services/roles:**
Perceived value of services/roles

**External influences:**
Collaboration with general practitioners
To explore Supplementary prescribing (SP) pharmacists’ early experiences of prescribing and their perceptions of the prescribing course.

Those practicing SP perceived the following as benefits: better patient management (139, 71.3%); greater job satisfaction (137, 70.3%); greater patient satisfaction (109, 55.9%); increased self-confidence (79, 40.5%); greater independence (75, 38.5%); better recognition of pharmacy role by other health professionals (75, 38.5%); and other, such as time saving (19, 9.7%). The challenges included funding issues (71, 36.4%); information technology issues (54, 27.7%); difficulties in referral process/identification of suitable patients (53, 27.2%); poor recognition of pharmacy role by other health professionals (51, 26.2%); inadequate administrative support (45, 23.1%); and other challenges, such as CMP-related difficulties, lack of space/facilities, and shortage of staff (50, 25.6%).
To explore Scottish community pharmacists’ awareness, views and attitudes towards independent prescribing by community pharmacists

Despite expressing confidence in their abilities to become independent prescribers and feeling competent in diagnosing and treating those conditions listed in the questionnaire, clinical training prior to implementation of independent prescribing was regarded important by 211 (97.7%) respondents, while 191 (88.4%) regarded clinical training in drugs used for treating the conditions to be important. The majority of pharmacists agreed/strongly agreed that prescribers must have access to a dedicated consultation area and information in GP held medical notes.

Four themes emerged from the data: the pharmacist–patient relationship; the pharmacist–general practitioner (GP) relationship; the pharmacists’ continuing professional development; and the role of peer support. Pharmacists welcomed this opportunity for more collaborative working with patients, GPs and peers.

To explore attitudes of community pharmacists towards the process of ‘pharmaceutical care’ as tested in the trial

External influences: Collaboration with general practitioners
<table>
<thead>
<tr>
<th>Study/s</th>
<th>Method</th>
<th>Sample Size</th>
<th>Service</th>
<th>Description</th>
<th>Findings</th>
<th>External Influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott et al., 2007</td>
<td>Discrete choice experiment (DCE)</td>
<td>914 community pharmacists</td>
<td>Extended roles</td>
<td>To examine the strength of preference of community pharmacists for existing and potential new roles, prior to the introduction of the new contract.</td>
<td>Community pharmacists preferred to work in an extended pharmacy team, to have strong integration with secondary care, and to provide a minor illness advice service. The pharmacists significantly preferred more income to less.</td>
<td>External influences: Collaboration with general practitioners, Remuneration</td>
</tr>
<tr>
<td>Silcock et al., 2007</td>
<td>Questionnaire</td>
<td>335 community pharmacists</td>
<td>Self-management of low back pain</td>
<td>To determine the attitudes, knowledge and reported practice of English pharmacists advising people who present with acute or chronic low back pain.</td>
<td>Pharmacists expressed some caution about recommending activity. Most respondents said they would benefit from more education about back pain.</td>
<td>Attitudes towards services/roles: Pharmacists' competence and confidence</td>
</tr>
<tr>
<td>Wilcock &amp; Harding, 2007</td>
<td>Questionnaire</td>
<td>52 GPs</td>
<td>Medicines use reviews (MURs)</td>
<td>To explore GPs' perceptions of community pharmacist-conducted MURs.</td>
<td>Nearly two-thirds of the doctors claimed to have a good working relationship with their local community pharmacist. Half of the respondents consulted with the community pharmacist on drug-related issues at least once a month. However, GPs in general expressed negative views about MURs.</td>
<td>Attitudes towards services/roles: Perceived value of services/roles</td>
</tr>
</tbody>
</table>
To explore general practitioner (GP) perceptions of the advantages and disadvantages of pharmacist supplementary prescribing and the future introduction of independent prescribing. Not all GPs in the practices referred patients to the prescribing pharmacists. Those GPs who did refer patients generally described benefits from the service, with some ambivalence. There was evidence that the GPs had, to some extent, redefined their professional boundaries, and delegated some routine work which involved no diagnosis and only limited decision making.
To investigate the attitudes of pharmacists to the provision of needle-exchange services (NES) at community pharmacies and, if barriers exist, explore means by which they may be overcome.

Attitudes towards NES and service users varied widely; pharmacists expressed their own views, company policy and the views of their staff, both positive and negative. Newly identified barriers included the negative influence of security staff, a local policy against NES provision and a lack of awareness of other services available for drug users. It was evident that all pharmacy personnel dealing with drug users would benefit from education and training.

Attitudes towards services/roles:
- Perceived value of services/roles,
- Awareness of services/roles,
- Pharmacists' competence and confidence

Community pharmacy organisations:
- Venues and resources,
- Management

External influences:
- Remuneration

(Hall & Matheson, 2008)
To investigate factors that influence the number of MURs performed by community pharmacists and to explore community pharmacists’ attitudes towards the service. Most respondents reported that MURs were an opportunity for pharmacist to use their professional skills in an extended role and patients would benefit from the service. However they reported concerns about GPs opinion of the service, lack of time and support staff to conduct MURs and were unhappy about consultation areas. Nearly half concurred that they would perform more if they had a reasonable financial incentive.

Attitudes towards services/roles: Perceived value of services/roles

Community pharmacy organisations: Workload, Venues and resources

External influences: Remuneration
(Pfleger et al., 2008)  
Mixed methods (Focus groups followed by questionnaires)  
8 community pharmacists participated in focus groups & 223 completed the questionnaire.

Expanded public health role  
To assess the education and training needs of community pharmacists to support the delivery of an expanded public health role.

Pharmacists participating in the focus groups described differing levels of awareness of pharmaceutical public health. The majority of pharmacists completing the questionnaire saw the importance of public health to their practice (n = 177, 79%) agreeing/strongly agreeing, they were less comfortable with the term ‘specialist’. The main barriers to developing competence were time, training and space. Whilst the importance of collaborative working was demonstrated with 67% (n = 149) responding that all pharmacists should be competent in working with and for communities and 62% (n = 138) for collaborative working for health, this was not matched with high levels of self-assessed competence in these areas.

Attitudes towards services/roles: Perceived Value of services/roles, Awareness of services/roles, Pharmacists’ competence and confidence.

Community pharmacy organisations: Workload, Venue and resources.

External influences: Collaboration with general practitioners.
To investigate pharmacists’ perspectives about the acceptability of the Pharmacy First Minor Ailments Scheme and barriers to the use of the scheme as well as to determine potential improvements to the scheme. Pharmacists were positive about the benefits of the scheme to both patients and healthcare professionals, despite raising some problems. Most pharmacists did not feel they needed any extra training since the scheme only covered aspects of treatment that they were already familiar with and trained to perform. Findings highlighted a number of important issues that might be barriers to running the minor ailments scheme, including the quantity of paperwork involved, the lack of privacy in a pharmacy, and the restrictive nature of the formulary and protocols of the scheme. Most pharmacists said that they had few interactions with their surrounding GPs and felt that the scheme had not affected these relationships. Around one-third of pharmacists blamed the lack of scheme activity on insufficient publicity. Quite a few felt the scheme would be beneficial to them financially.

Pumtong et al., 2008

Semi-structured interviews
26 community pharmacists
Pharmacy First Minor Ailments Scheme

Attitudes towards services/roles:
Perceived value of services/roles, Pharmacists’ competence and confidence

Community pharmacy organisations:
Venue and resources

External influences:
Collaboration with general practitioners, Promotion of services/roles, Remuneration
To explore community pharmacists’ experiences of conducting MURs, including how this affects their relationship with GPs and the extent to which training and accreditation prepared them for this work.

Pharmacists believed that MURs enhanced their relationship with patients. However, many of the pharmacists thought the accreditation processes had not prepared them for face-to-face consultations, communicating with patients or keeping patients within time constraints. Generally, appointments for MURs were made on an ad-hoc basis rather than by a formal system. A predominant view was that GPs were cynical about the value of MURs. The main suggestions to improve GP/pharmacist relationships were with regard to increasing promotion of MURs and developing initiatives to improve communication between GPs and pharmacists.

Attitudes towards services/roles:
- Perceived value of services/roles,
- Pharmacists’ competence and confidence

Community pharmacy organisations:
- Workload,
- Venue and resources

External influences:
- Collaboration with general practitioners,
- Promotion of services/roles
To evaluate the quantifiable difference of MURs on GP prescribing for patients who have undergone such a review and to explore community pharmacists’ perceptions of MURs and their impact on patients.

Analysis of interviews yielded four themes relating to perceived constraints on pharmacists, their confidence in undertaking MURs, educating patients on medicines use, and impact of MURs on pharmacist/prescriber relations.

Attitudes towards services/roles: Pharmacists’ competence and confidence

Community pharmacy organisations: Management

External influences: Collaboration with general practitioners
| (Mackridge et al., 2010) | Focus groups | 6 community pharmacists | Problematic drug users | To qualitatively explore the feasibility and desirability of further developing community pharmacy services to meet the wider health needs of problematic drug users. Providers identified the cost of delivering services as the most significant barrier. Another very significant barrier that was that of effective communication between providers and other health services, in particular prescribers. Existing knowledge and skills among pharmacists and their support staff were highlighted as a potential barrier for new services. Privacy and the availability of consultation areas were raised by all participant groups as a significant barrier. |

| Attitudes towards services/roles: Pharmacists’ competence and confidence |
| Community pharmacy organisations: Venue and resources, Management |
| External influences: Collaboration with general practitioners |
To investigate community pharmacists’ views on the implementation of the e-MAS in Scottish community pharmacies and to quantify the barriers and facilitators to service provision.

A majority identified opportunities to extend professional roles (83.3%), opportunities for more effective patient treatment (78.5%), opportunities to better meet patient expectations (74.4%) and financial advantage to their pharmacy (52.6%) as benefits of e-MAS. Suspected misuse/overuse of the service by some customers (75.1%) and time required for recording each consultation or supply (61.3%) were two barriers agreed upon by the majority of the respondents. In addition, there were concerns over the lack of opportunities for promoting the service, clear practice guidelines and support from GPs.

Attitudes towards services/roles:
Perceived value of services/roles

Community pharmacy organisations:
Workload, Venue and resources

External influences:
Collaboration with general practitioners, Promotion of services/roles
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Sample Size</th>
<th>Research Questions</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Thomas et al., 2010)</td>
<td>Semi-structured</td>
<td>12 community</td>
<td>Chlamydia screening to women requesting emergency hormonal contraception</td>
<td>To understand why pharmacists, asked to offer free chlamydia postal screening to Emergency Hormonal Contraception clients had not offered screening to all eligible women. Although pharmacists were keen to expand their services, they were reluctant to offer chlamydia screening to women who were married or in a long term relationship. All had adequate facilities to offer postal screening and though most were kept busy with their normal workload, none said that lack of time had prevented them offering a kit.</td>
</tr>
<tr>
<td></td>
<td>interviews</td>
<td>pharmacists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Dabrera et al., 2011)</td>
<td>Semi-structured</td>
<td>10 community</td>
<td>Chlamydia screening</td>
<td>To understand the issues facing pharmacists in offering chlamydia screening. Participants had good awareness of the importance of chlamydia infection and the need for screening. The majority were supportive of it, although some were concerned about approaching some younger individuals. A number of pharmacists suggested that the extra services they offered did not specifically prevent them from offering screening. However, some expressed reservations about the level of privacy available in which to explain it.</td>
</tr>
<tr>
<td></td>
<td>interviews</td>
<td>pharmacists</td>
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</table>
Alcohol screening and brief interventions (SBI) To explore the views of community pharmacists toward the development of SBI for risky drinkers. Pharmacists considered there was a place for alcohol health promotion in community pharmacy. However, not all participants were positive about this potential new role and some expressed apprehension about implementing SBI services due to concerns about offending or alienating customers. Other barriers included lack of experience and confidence, problems faced with other health promotion initiatives, time, privacy and remuneration. Facilitators included a public health campaign to raise awareness of problem drinking, having appropriate screening tools available and training for pharmacists.

Attitudes towards services/roles: Perceived value of services/roles, Awareness of services/roles, Pharmacists’ competence and confidence

Community pharmacy organisations: Workload, Venue and resources, Management

External influences: Collaboration with general practitioners, Promotion of services/roles, Remuneration
<table>
<thead>
<tr>
<th>Study</th>
<th>Method</th>
<th>Participants</th>
<th>Objective</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(McCaig et al., 2011)</td>
<td>Questionnaire</td>
<td>497 community pharmacists</td>
<td>Provision of advice on alcohol use</td>
<td>Around a quarter were confident in explaining alcohol limits, binge drinking and confidentiality issues, but about 40% lacked confidence in screening and providing a brief intervention on alcohol. Respondents expressed mixed views on the appropriateness of pharmacist involvement in discussing alcohol use with clients.</td>
</tr>
<tr>
<td>(Akram et al., 2012)</td>
<td>Focus groups</td>
<td>35 community pharmacists</td>
<td>Palliative care services</td>
<td>Three key themes were identified: medication supply, communication, and education and training. For some participants, the limited knowledge and understanding of their role by palliative care team members was a key factor affecting their provision of services to patients and carers. Almost all the participants identified the out-of-hours period as being more vulnerable to problems.</td>
</tr>
</tbody>
</table>
| Study (Author) | Methodology | Participants | Pharamacist roles | Findings | Attitudes towards services/roles:
|---------------|-------------|--------------|-------------------|----------|-----------------------------|  |
| Al Hamarneh et al., 2012 | Telephone interviews | 100 community pharmacists in Northern Ireland, UK & 100 in Alberta, Canada | To explore how community pharmacists from Alberta, Canada, and Northern Ireland, UK, describe what a pharmacist does and to compare their responses. | In Northern Ireland, 40% of the community pharmacists’ responses were categorised as patient-centred, 39% as product-focused and 21% as ambiguous. Word-cloud analysis highlighted the relative lack of patient-care-related terms, suggesting that when it comes to the pharmacists’ practice patient care is still not their first priority. | Perceived value of services/roles, Awareness of services/roles,  |
| Bradley et al., 2012 | Semi-structured interviews | 13 GPs and 18 community pharmacists local pharmaceutical services pilots & repeat dispensing | To present a new model of collaboration derived from interviews with GPs and community pharmacists in England involved in service provision that required some form of collaboration. | The model highlights key components of collaboration, including the importance of trust, communication, professional respect, and “knowing” each other. Some GPs exhibited a territorial approach and a preoccupation with defined boundaries and roles. Other GPs expressed the view that the pharmacist could play a useful substitute role dealing with minor ailments, if appropriately trained, with the intention of easing GP workload. The commercial aspect of community pharmacy was viewed negatively and with suspicion by some GPs. The main criticism directed toward GPs by pharmacists was their lack of awareness about pharmacy’s potential contribution to patient care or about the specific services that the pharmacists were trying to operate. | Perceived value of services/roles, Awareness of services/roles, Pharmacists’ competence and confidence  |
**Tucker, 2012**

**Questionnaire**

870 community pharmacists

Dermatological care

To explore pharmacists’ perceptions of the skin conditions they encounter, sources of postgraduate dermatological training and views of their role in the management of patients with skin problems.

Seventy-eight per cent of pharmacists felt that patients sought their advice on problems about dry skin on a weekly basis. The majority agreed that they played an important role in managing patients with skin problems.

**Attitudes towards services/roles:**

- Perceived value of services/roles

**Savage et al., 2013**

Semi-structured interviews

25 community pharmacists

Management of cancer pain

To explore and describe community pharmacists’ current and potential place in the cancer pain pathway

Pharmacists had no reliable method to identify patients with cancer and no access to disease stage and treatment plan information. There was little evidence of any routine communication with other professionals about patient care. Contact with patients was limited. Access to palliative care medicines could be problematic for patients and medicines use reviews (MURs) were rarely done. Many felt that their potential contribution to cancer pain management was constrained but aspired to do more.

**Attitudes towards services/roles:**

- Perceived value of services/roles,
- Awareness of services/roles

**Community pharmacy organisations:**

Venue and resources

**External influences:**

Collaboration with general practitioners
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Method</th>
<th>Sample Size</th>
<th>Description</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown et al., 2014</td>
<td>Semi-structured interviews</td>
<td>25 community pharmacists</td>
<td>Services part of the healthy living pharmacy (HLP) framework</td>
<td>To assess the impact on service provision and staff engagement at an early stage in HLP program development. Interviews revealed a positive impact on service development in HLPs, largely engineered through revision of Skill mix and additional training of non-pharmacist staff to become healthy living champions. Obstacles to HLP development were managing the increased workload, raising awareness of clients and other healthcare professionals of the services available, and receiving remuneration for service provision.</td>
</tr>
</tbody>
</table>
Focus groups | 10 community pharmacists | Heart failure service | To explore and portray in detail, the perspectives of patients receiving, and pharmacists delivering an enhanced, pay for performance community pharmacy heart failure service.

Pharmacists voiced their confidence in delivering the service and highlighted valued aspects including the structured consultation and repeated contacts with patients enabling the opportunity to improve self-care and medicines adherence. However, approachability came at a price, for pharmacists felt under increased pressure to manage their time amidst unpredictable fluctuations in pharmacy workload. In some cases, confidence in delivering the service appeared conditional on strong collaboration with GPs.

**Attitudes towards services/roles:**
- Perceived value of services/roles,
- Pharmacists’ competence and confidence

**Community pharmacy organisations:**
- Workload

**External influences:**
- Collaboration with general practitioners

---

Questionnaire | 99 doctors | Sexual and reproductive health services | To determine the views of women obtaining EC from pharmacies and clinicians working in sexual and reproductive health care (SRH) about the possibility of pharmacists providing a temporary supply of a progestogen-only pill (POP) together with EC.

The majority of respondents were positive about a pharmacist supplying a POP at the time of EC.

**Attitudes towards services/roles:**
- Perceived value of services/roles
To explore experiences and views of 4 groups of participants, the general public, PHs, general practitioners (GPs), and other stakeholders (STs) on pharmacy-based public health services, and identify potential factors affecting service use. Accessibility and convenience were the advantages agreed by most participants. Crucial obstacles that could inhibit service utilization are perceptions of the general public toward pharmacists' competencies, privacy and confidentiality in pharmacies, high dispensing workload, and inadequate financial support. There was agreement among all participant groups that pharmacy-based public health services lacked publicity. A variety of promotional techniques were mentioned as potentially useful, including posters/leaflets, media advertising, and recommendation by GPs.

**Attitudes towards services/roles:**
Perceived value of services/roles,
Awareness of services/roles,
Pharmacists' competence and confidence

**Community pharmacy organisations:**
Workload, Venue and resources, Management

**External influences:**
Collaboration with general practitioners, Promotion of services/roles, Remuneration
<table>
<thead>
<tr>
<th>Wells et al., 2014</th>
<th>Focus groups</th>
<th>15 community pharmacists</th>
<th>New Medicine Service (NMS)</th>
</tr>
</thead>
</table>

To explore community pharmacist and superintendent pharmacist views and experiences of the NMS in the 5 weeks prior to its implementation to identify potential facilitators and barriers to its success. The study also investigated participant experiences of the introduction and provision of existing pharmacy services in order to contrast with the implementation of the NMS.

Pharmacists were positive about the NMS and identified potential benefits for patients and the pharmacy profession. Awareness of the service was high, however, some confusion between the NMS and changes to Medicine Use Reviews was evident in all focus groups due to their similarity and coincidental implementation. Participants identified pharmacists’ positive attitude, the similarity to current practice and the self-accreditation procedure as potential facilitators to service implementation. Potential barriers identified included a perceived lack of interest and awareness by GPs of the service, and the payment structure. Participants were concerned about the speed of implementation, and the absence of some materials needed prior to the start of the service.

**Attitudes towards services/roles:**
- Perceived value of services/roles,
- Awareness of services/roles,
- Pharmacists’ competence and confidence

**Community pharmacy organisations:**
- Venue and resources,
- Management

**External influences:**
- Collaboration with general practitioners,
- Remuneration
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Data Collection</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dewsbury et al., 2015)</td>
<td>Questionnaire</td>
<td>206 community pharmacists</td>
<td>Public health services</td>
<td>Sought views of community pharmacists in 16 areas of England on services provided, decisions about services, support, promotion and future developments. Pharmacists had positive attitudes towards providing public health services, but mixed views on support for services and their promotion. Most thought services would increase in future, but were concerned about commissioning.</td>
</tr>
<tr>
<td>(Firth et al., 2015)</td>
<td>Structured interview</td>
<td>11 community pharmacists</td>
<td>Services part of the healthy living Pharmacy (HLP) framework</td>
<td>To explore the barriers to the implementation and progression of the HLP framework, from both provider and commissioner perspectives, and to ascertain whether the successes and barriers of the framework perceived by pharmacies are shared with commissioners. There were many aspects of the HLP framework that the service ‘providers’ were positive about, namely, workforce development, engagement (particularly with the smoking cessation service) and as a motivation for pharmacy teams. However, there were areas of concern about low awareness among pharmacy users, the time involved in delivery, as well as financial considerations.</td>
</tr>
</tbody>
</table>
(Lucas & Blenkinsopp, 2015) Semi-structured interviews 14 community pharmacists New Medicines Service (NMS) To explore community pharmacists’ experiences and perceptions of NMS within one area of the United Kingdom

Pharmacists gave a mixed response to the operationalisation, ranging from positive opportunities for improving adherence and enhancement of practice to difficulties in terms of its administration. Pharmacists generally welcomed opportunities to utilise their professional expertise to achieve better patient engagement and for pharmacy practice to develop as a patient resource. There was a perceived need for better publicity about the service. Different levels of collaborative working were reported.

Attitudes towards services/roles: Perceived value of services/roles, Awareness of services/roles, Community pharmacy organisations: Management

External influences: Collaboration with general practitioners
(Morecroft et al., 2015) Multi methods (Semi structured interviews with community pharmacists & qualitative interactive feedback sessions with medical practice teams)

26 community pharmacists participated in the focus groups & 25 GPs took part in the general practice interactive feedback sessions

Emergency supply of prescription-only medicines

To evaluate and inform emergency supply of prescription-only medicines by community pharmacists, including how the service could form an integral component of established healthcare provision to maximise adherence.

Pharmacists and GPs identified the role that CPs could have in removing unnecessary demand from GP out-of-hours services regarding medicines supply and that this could be a driver for change to a funded emergency supply service in community pharmacies. This provision was considered to be likely to be comparatively cost-effective, directing limited NHS resources to be used in the best way. A coordinated approach to promoting such a service was preferred, with other relevant NHS service providers having clear pathways for referral.

Attitudes towards services/roles: Perceived value of services/roles

Community pharmacy organisations: Management

External influences: Collaboration with general practitioners
<table>
<thead>
<tr>
<th>Study (Morton et al., 2015)</th>
<th>Method</th>
<th>Participants</th>
<th>Objective</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured interviews</td>
<td>15 community pharmacists</td>
<td>Lifestyle advice to patients with cardiovascular disease (CVD)</td>
<td>To explore community pharmacists’ experiences and perceptions of providing lifestyle advice to patients with CVD.</td>
<td>Pharmacists categorized patients according to their perceptions of the patients’ ability to benefit from advice. Many barriers to providing lifestyle advice were identified. The most frequently cited barriers were time and workload. Most pharmacists explicitly made reference to the community pharmacy being a business environment in addition to a provider of health care. Confidence to provide lifestyle advice varied. Some pharmacists felt lifestyle advice was an integral part of their role whilst others questioned whether pharmacists should give lifestyle advice at all, particularly when receiving no remuneration for doing so.</td>
</tr>
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</table>

**Attitudes towards services/roles:**
- Perceived value of services/roles,
- Awareness of services/roles,
- Pharmacists’ competence and confidence

**Community pharmacy organisations:**
- Workload,
- Venue and resources,
- Management

**External influences:**
- Remuneration
Semi-structured interviews with 24 community pharmacists

To explore community pharmacy’s contribution to self-care support of long-term conditions (LTCs)

Self-care support was found to be medicines focused, opportunistic and dependent on the services they provided, rather than being patient centered and proactive. The barriers to providing self-care support were described as priority accorded to dispensing activities, the structure of the community pharmacy contract, lack of incentives to provide self-care support and patients’ expectations and lack of awareness of community pharmacy’s role in LTCs management.

**Attitudes towards services/roles:**
- Perceived value of services/roles
- Awareness of services/roles
- Pharmacists’ competence and confidence

**Community pharmacy organisations:**
- Workload
- Venue and resources
- Management

**External influences:**
- Collaboration with general practitioners
| (Tucker & Stewart, 2015) | Semi-structured interviews | 10 community pharmacists | Dermatological care | To explore pharmacist and medicine counter assistant (MCA) perceptions of community pharmacy management of patients presenting with symptomatic skin problems. | Pharmacists identified two key themes that defined their role; triage and reassurance. Themes identified by both pharmacists and MCAs relating to the use of pharmacy as a source of advice were convenience, the perceived non-serious nature of conditions and inaccessibility of the GP. Both pharmacists and MCAs identified their lack of dermatological knowledge as a barrier with pharmacists reporting insufficient time to deal effectively with patients. | **Attitudes towards services/roles:** Perceived value of services/roles, Pharmacists’ competence and confidence | **Community pharmacy organisations:** Workload |
Semi-structured interviews
31 community pharmacists
Weight management services

To explore the beliefs and experiences of pharmacists and medicines counter assistants (MCAs) in the North-East of Scotland on community pharmacy weight management.

There were mixed responses from pharmacists and MCAs around pharmacy based weight management services from positive views of providing the service in community pharmacy to those more reticent who would always favour patients visiting their physician. While all described similar services they acknowledged that support was often opportunistic at the request of customers, with little integration of other providers. While pharmacists generally felt comfortable and confident, MCAs gave more diverse responses. Both Pharmacist and MCAs highlighted the need for a practice model which is systematically developed.
### (Agomo et al., 2016a) Semi-structured Interviews

<table>
<thead>
<tr>
<th>Participants</th>
<th>Public health role</th>
<th>To identify strategies enhancing the public health role of community pharmacists in the UK.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 pharmacists [1 pharmacist/PhD student; 1 community intern-pharmacist; 4 community locum pharmacist; 1 community relief pharmacist; 1 pharmacy manager/pharmacist; and 1 community pharmacist]</td>
<td></td>
<td>Participants suggested a number of strategies and benefits to enhancing the public health role of community pharmacists in the UK. They included empowerment through education and awareness, empowerment through direct remuneration of pharmacists, the teaching as well as the use of new technologies and social media in practice, the use of independent pharmacist practitioners (IPPs) and pharmacists working closely with other healthcare practitioners. In terms of benefits, enhancing the public health role of community pharmacists could help: enhance preventative care, enhance accessibility, enhance collaboration between healthcare professionals, enhance the knowledge base of practitioners, reduce negative perceptions about pharmacists and bring financial savings and better time management to the NHS.</td>
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<td>3 GPs [1 GP partner, 2 GP locums]</td>
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### Attitudes towards services/roles: Perceived value of services/roles

<p>| Community pharmacy organisations: Venue and resources, Management |
| External influences: Collaboration with general practitioners, Promotion of services/roles, Remuneration |</p>
<table>
<thead>
<tr>
<th>(Agomo et al., 2016b)</th>
<th>Questionnaire</th>
<th>147 community pharmacists</th>
<th>Public health role</th>
<th>To identify barriers in the public health role of community pharmacists</th>
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<td></td>
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<td>A majority of the respondents identified time pressure and workload (89.7%, C.I. ±4.94); lack of patients’ records (78.6%, C.I. ±6.66); insufficient funding from the government (75.2%, C.I. ±7.01); lack of understanding by healthcare providers of the training and skill sets of pharmacists (73.7%, C.I. ±7.25); and lack of understanding by the public of the training and skill sets of pharmacists (72.7%, C.I. ±7.29), as the main barriers in enhancing the public health role of community pharmacists in the UK. Free text comments also highlighted a number of barriers, which included, among other things, time pressure and workload, commercial pressure from employers, lack of collaboration between healthcare professionals, and inadequate funding.</td>
</tr>
<tr>
<td>Attitudes towards services/roles:</td>
<td>Awareness of services/roles, Pharmacists’ competence and confidence</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Community pharmacy premises:</td>
<td>Workload, Venue and resources, Management</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>External influences:</td>
<td>Collaboration with general practitioners, Promotion of services/roles, Remuneration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Methodology</td>
<td>Participants</td>
<td>Service Description</td>
<td>Findings</td>
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<td>---------------------</td>
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<td>---------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Atkins et al., 2016*</td>
<td>Questionnaire</td>
<td>58 community pharmacists &amp; 344 GPs</td>
<td>Vaccination service</td>
<td>Responses from the online survey showed that the vast majority of pharmacists thought that the pharmacy initiative eased the burden on the healthcare system. By contrast, there was an equal split between GPs as to whether the initiative increased or decreased the administrative burden on them. GPs were concerned with a reduced quality of healthcare provision for their patients.</td>
</tr>
<tr>
<td>Butt &amp; Ream, 2016</td>
<td>Semi-structured interviews</td>
<td>5 community pharmacists</td>
<td>Oral chemotherapy services</td>
<td>Community pharmacists viewed services as having potential to broaden and extend their roles, provide personal and professional satisfaction and engender opportunities to form better relationships with cancer patients. The lack of patient information, care and support provision was emphasised. Training and education for community pharmacists and inter-professional issues were facilitators to oral chemotherapy services. The service environment and dispensing process-related constraints were significant barriers.</td>
</tr>
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</table>

**Attitudes towards services/roles:**
- Perceived value of services/roles,
- Pharmacists’ competence and confidence
To explore and verify the factors that influence the relative performance of pharmacies providing NHS influenza vaccinations. Extended opening hours and urban locations were positively associated with the number of vaccinations given, although pharmacists reported that workload, vaccine costs, unforeseen delays, lack of public awareness, and GPs’ views of the service limited their contribution. Pharmacists, aware of the potential for conflict with GPs, moderated their behaviour to mitigate such risk.

**Attitudes towards services/roles:**
Perceived value of services/roles, Awareness of services/roles

**Community pharmacy organisations:**
Workload, Venue and resources, Management

**External influences:**
Collaboration with general practitioners
<table>
<thead>
<tr>
<th>(Gammie et al., 2016)</th>
<th>Questionnaire</th>
<th>341 community pharmacists</th>
<th>Medicine-related services</th>
</tr>
</thead>
</table>

To compare the public’s preferred attributes of pharmacies and methods for promoting medicine-related services with community pharmacists’ perceptions of their customers’ views.

Pharmacists’ perceptions of customer preferences for using the same pharmacy, independent ownership, and personal knowledge of the pharmacist were higher than actual public preferences. More pharmacists than public respondents also believed that approachability and previous good service would be important. Pharmacists’ expectations of the effectiveness of posters and mass media methods were much higher than those of the public.

**Attitudes towards services/roles:**

- Perceived value of services/roles

**External influences:**

- Promotion of services/roles
**Latif et al., 2016**

Multi methods (ethnographic observations, in situ workplace interviews & semi-structured interviews)

Ethnographic observations and in situ workplace interviews with pharmacists & support staff were undertaken within 23 English community pharmacies. Semi-structured interviews were carried out with 47 community pharmacists and 11 GPs.

**New Medicine Service (NMS)**

To explore the recent implementation of the NMS in community pharmacies across England.

The NMS workload had been implemented and absorbed into pharmacists’ daily routines alongside existing responsibilities with no extra resources and little evidence of reduction in other responsibilities. Despite pharmacists holding positive views about the value of the NMS, not all were convinced of its perceived benefits and necessity, with reports that many consultations did not identify any problems with the patients’ medicines. GPs were generally supportive of the initiative but were unaware of the service or potential benefits. Poorly developed existing pharmacist-GP relationships impeded implementation.

**Maddox et al., 2016**

Interviews using a combination of the critical incident technique and open questions.

5 pharmacist non-medical prescribers (NMPs) (3 working in GP practices and 2 in community pharmacies)

Non-medical prescribing

To explore the factors influencing whether nurse and pharmacist NMPs in community and primary care settings take responsibility for prescribing.

Participants experienced situations where they were reluctant to accept responsibility for prescribing. Perceptions of competency, role and risk influenced their decision to prescribe. Workarounds such as delaying the prescribing decision or refer the patient to a doctor were used.

**Attitudes towards services/roles:**
- Perceived value of services/roles,
- Awareness of services/roles

**Community pharmacy organisations:**
- Workload,
- Venue and resources

**External influences:**
- Collaboration with general practitioners,
- Promotion of services/roles

**Attitudes towards services/roles:**
- Pharmacists’ competence and confidence
<table>
<thead>
<tr>
<th>Reference</th>
<th>Method</th>
<th>Sample Size</th>
<th>Study Objective</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mantzourani et al., 2016</td>
<td>Semi-structured interviews</td>
<td>7 community pharmacists</td>
<td>To explore the perceptions of stakeholders on a national pilot of a new service, the ‘Choose Pharmacy’ Common Ailments Service in Wales.</td>
<td>The benefits of encouraging self-care by patients were widely recognised in terms of their impact on patients, health professionals and wider society. Although some challenges of introducing a new service were identified, these did not appear to be insurmountable.</td>
</tr>
<tr>
<td>Michie et al., 2016*</td>
<td>Semi-structured interviews with pharmacists involved in the pilot study</td>
<td>9 community pharmacists were interviewed pre-study and 10 post-study</td>
<td>To identify barriers and facilitators to providing interventions from pharmacies routinely</td>
<td>All pharmacists were positive about their involvement in the study. They felt that pressure on consultation time had not been a significant issue, although there were some occasions when the pharmacy was too busy to allow recruitment.</td>
</tr>
</tbody>
</table>
To compare the perceptions of pharmacists and the general public on medicines related services, particularly MUR and NMS services. Both pharmacists and the public had high expectations that services would be beneficial in terms of increasing knowledge and understanding, but public expectations and experiences of services helping to sort out problems fell well below pharmacists’ perceptions.
To understand views of pharmacy advisers about smoker recruitment and retention in the National Health Service community pharmacy stop smoking programme.

Actively recruiting smokers was accorded low priority due in part to perceived insufficient remuneration to the pharmacy and anticipated challenging interactions with smokers. There were also perceived structural/organisational challenges involving programme delivery. Suggestions to improve smoker recruitment and retention included developing a more holistic and supportive approach using patient-centred communication.

Attitudes towards services/roles:
Perceived value of services/roles, Pharmacists’ competence and confidence

Community pharmacy organisations:
Workload, Venue and resources, Management

External influences:
Promotion of services/roles, Remuneration
<table>
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<tr>
<th>Study (Ref.)</th>
<th>Study Design</th>
<th>Participants</th>
<th>Objective</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Urwin et al., 2016</td>
<td>Proof of concept study with pharmacist interviews</td>
<td>8 participating community pharmacists were interviewed</td>
<td>Active case finding of patients with coeliac disease</td>
<td>To test the use of community pharmacies for active case finding of patients with coeliac disease</td>
</tr>
<tr>
<td>Agomo et al., 2017</td>
<td>Semi-structured interviews</td>
<td>11 pharmacists [1 pharmacist/PhD student; 1 community intern-pharmacist; 4 community locum pharmacist; 1 community relief pharmacist; 1 pharmacy manager/pharmacist; and 1 community pharmacist] 3 GPs [1 GP partner, 2 GP locums]</td>
<td>Public health role</td>
<td>To identify barriers in the public health role of UK community pharmacists.</td>
</tr>
</tbody>
</table>

**Attitudes towards services/roles:**
- **Perceived value of services/roles, Pharmacists’ competence and confidence**
- **Awareness of services/roles, Pharmacists’ competence and confidence**
- **Promotion of services/roles**
  - **Workload, Venue and resources, Management**
  - **Community pharmacy organisations**
  - **External influences:**
    - **Promotion of services/roles**
To explore pharmacists’ perceptions of primary care roles including the potential for greater integration of their profession into general practice.

Many felt they were in the best position to address medication adherence and to monitor prescribed medications that could otherwise lead to adverse events. Participants varied in levels of expressed self-confidence for working in general practice. Several speculated about allocating more time per patient encounter than is currently possible for a busy GP and managing their own appointments to ensure better continuity of care. However, those with experience of general practice acknowledged logistical factors that limited these ideal circumstances including shortages of clinic rooms and high levels of patient demand. Participants recognised the importance of being part of a multidisciplinary team but drew clear distinctions between themselves and other practitioners.

Attitudes towards services/roles:
Perceived value of services/roles,
Awareness of services/roles,
Pharmacists’ competence and confidence

Community pharmacy organisations:
Workload,
Venue and resources

External influences:
Collaboration with general practitioners
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Research Question</th>
<th>Findings/Implications</th>
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<tbody>
<tr>
<td>(Gray et al., 2017)</td>
<td>Multi methods (focus groups, telephone interviews and multidisciplinary group discussions)</td>
<td>Focus groups with 9 community Pharmacists. Interviews with 5 rheumatology professionals. Multidisciplinary discussion groups with 9 Community pharmacists, 7 rheumatology physicians, 5 specialist nurses and 1 physiotherapist.</td>
<td>Care of young people with chronic illness</td>
<td>To explore the perceived and potential roles of pharmacists in the care of young people aged 10-24 years with chronic illness, through the exemplar of juvenile arthritis, from the perspectives of UK community and hospital pharmacists, health service commissioners, rheumatology health professionals, and lay advocates. Participants identified associated challenges for pharmacists in supporting young people with chronic illness. These challenges included parents collecting prescription refills alone, thus reducing opportunities to engage, and pharmacist isolation from the wider health care team. Many participants supported pharmacists sharing Web sites and applications that could help young people to manage chronic illness.</td>
</tr>
<tr>
<td>(Heller et al., 2017)*</td>
<td>Semi-structured Interviews</td>
<td>Exact number not given</td>
<td>Sexual and reproductive health service</td>
<td>To examine the feasibility and acceptability of users receiving the subcutaneous form of the contraception injection from pharmacists in the community pharmacy setting. Pharmacists were enthusiastic about this expansion of their role, and did not view their availability as a barrier to service delivery. Pharmacists felt that the pharmacy was an appropriate place for women to receive contraceptive services and advice.</td>
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</table>
To explore community pharmacists’ contributions to self-care support of long-term conditions by; investigating their conceptual understanding of self-care principles; identifying self-care support activities they considered important and their engagement in them; and examining barriers and enablers. Whilst many agreed that other self-care support activities such as supporting self-monitoring and collaborative care planning were important, they indicated only limited engagement. Respondents identified access to patient records and availability of private consultation rooms as their main barriers and enablers, respectively; working relationship with GPs and skill-mix in community pharmacy were viewed as both barriers and enablers. Qualitative analysis of open comments suggests an interplay of other factors affecting individual community pharmacists’ ability to engage in self-care support.
Rutter et al., 2017 Questionnaire 19 pharmacists Post discharge MURs (dMURs) 

To investigate the perspective of community pharmacists on the usefulness of dMUR referrals from hospital, the suitability of patients referred and overall views on the service.

Seven (36.8%) felt that it was hard to engage patients with dMURs. Failure or inability of patients to attend the pharmacy were the most common barriers. Reasons for medication changes (n = 5) and indications for new medicines (n = 4) were the most common examples of extra information that would be useful on referral. Community pharmacists held positive opinions on the dMUR service and could see the benefit to patients. Pharmacists wanted more referrals but reported performing few dMURs outside this study.

| Attitudes towards services/roles: Perceived value of services/roles |
| Community pharmacy organisations: Venue and resources |
Semi-structured interviews with 9 community pharmacists and 8 GPs were conducted to explore the attitudes and perceptions of GPs and community pharmacists on the risks and preventative strategies for the development of bisphosphonate-related osteonecrosis of the jaw (BRONJ).

Four salient and inter-related themes emerged: (1) uncertain knowledge, indicating limited exposure of respondents to BRONJ, and limited awareness of the implications of its diagnosis, risk factors and preventative strategies; (2) patient specific, referring to the complexity of patients, patient education and prioritising aspects of care; (3) wider context, indicating a lack of interdisciplinary communication and referral processes between professions, workload pressures, access and patient receptivity to dental services; and (4) professional, reflecting professional roles and responsibilities, authority and educational initiatives.
<table>
<thead>
<tr>
<th>(Twigg et al., 2017)</th>
<th>Focus group</th>
<th>7 community pharmacists</th>
<th>UK Pharmacy Care Plan service</th>
<th>To describe the initial findings from the set up and delivery of a novel community pharmacy based person-centred service</th>
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<td>Pharmacists could see the potential patient benefit and the extended role opportunities the service provided. Pharmacists were positive regarding the consultation skills training which had been provided and recognised the need to practise when they returned to the pharmacy in order to become competent at delivering the service. All of the pharmacists identified the difficulty with conducting the initial consultations with patients. They reported techniques to manage their workload by staging appointments over a longer period and asking for locum pharmacist cover to enable them to spend the time with patients. However, this cover was difficult to arrange and variable in availability.</td>
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<td><strong>Attitudes towards services/roles:</strong> Perceived value of services/roles, Pharmacists’ competence and confidence</td>
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<td><strong>Community pharmacy organisations:</strong> Workload, Venue and resources</td>
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<td><strong>External influences:</strong> Collaboration with general practitioners</td>
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* For these papers, eliciting pharmacist/GP perspectives was not the main component hence, reporting was minimal which produced low scores.
Discussion

This systematic review summarised and compared evidence of both pharmacist and GP views of UK services extending beyond community pharmacy’s traditional medicines supply functions published since the introduction of revised contractual frameworks in 2005/6. This review builds upon the findings of existing systematic reviews looking at pharmacists/GPs views on community pharmacy services in the UK. Unlike existing reviews, this review was not specific to any conditions/services thus covering an extensive range of community pharmacy issues and providing broader implications. Also, this is the first review which compares and contrasts pharmacist and GP views rather than grouping them together as healthcare professional views. Due to a rapid increase in research in this area, particularly in the last few years, this review could cover a wide range of extended services, not in existence at the time of previous reviews (Anderson et al., 2003, Eades et al., 2011). Moreover, identifying both GPs’ and pharmacists’ perceptions allowed their views to be compared to better understand how/if their relationship had developed since the introduction of these extended services. However, there was a heavy weighting towards data collected from pharmacists and a relative paucity of research amongst GPs. Nonetheless, the findings from this review mirrored earlier reviews eliciting pharmacists’(Anderson et al., 2003, Eades et al., 2011, Hall et al., 2018) and GPs’(Hall et al., 2018) views on community pharmacy services in the UK. Those reviews also demonstrated issues with low awareness, time constraints, training needs, venue and resources (Anderson et al., 2003, Eades et al., 2011, Hall et al., 2018). The importance of community pharmacy integration within the primary care pathway has also been acknowledged previously (Hall et al., 2018). This suggests that progress in these areas has been slow since the introduction of the revised contractual framework.

Focusing on the UK could be considered both a strength and limitation. It permitted a focus on studies conducted in a single administrative and organizational context. However, it excludes similar community pharmacy advancements in other countries, particularly the United States, Canada, Australia and New Zealand. Nonetheless, pharmacists’ and GPs’ attitudes towards extended services in this review reflected international findings, where pharmacists in North America, Asia, Australasia, South America and Europe were also enthusiastic towards the concept of providing extended
services (Kjome et al., 2008, Fang et al., 2011, Kinsey et al., 2016, Dosea et al., 2017, Schindel et al., 2017). Moreover, lack of awareness (Bjorkman et al., 2008, Freeman et al., 2012, Fakih et al., 2016, Wibowo et al., 2016), issues with community pharmacy premises (Bjorkman et al., 2008, Babiker et al., 2014, Gray et al., 2016, Hattingh et al., 2016, Murphy et al., 2016, Donald et al., 2017), lack of management support (Casserlie & Mager, 2016, Kinsey et al., 2016, Tsao et al., 2016, Donald et al., 2017, Watkins et al., 2017) and remuneration (Gray et al., 2016, Kinsey et al., 2016, Donald et al., 2017, Watkins et al., 2017) have also been found in other countries. Many pharmacists elsewhere also stressed the need for sufficient pharmacy staff (Casserlie & Mager, 2016, Gray et al., 2016, Kinsey et al., 2016, Murphy et al., 2016, Tsao et al., 2016), and pharmacists’ (Jorgenson et al., 2014, Wibowo et al., 2016, Donald et al., 2017, Watkins et al., 2017) and GPs’ (Bryant et al., 2009, Tan et al., 2014, Dhillon et al., 2015) views confirmed poor engagement between pharmacists and GPs.

This review highlights factors relevant to policymakers for enhancing community pharmacy services for patients within the primary care pathway. For instance, it is apparent that pharmacists are eager to expand their roles but lack the confidence to do so. Implementing regular training and increasing opportunities to apply training could enhance their confidence and reassure them of their competence (Donald et al., 2017, Dosea et al., 2017, Sim et al., 2017, Watkins et al., 2017). Pharmacists’ confidence could also be enhanced by having the ability to witness improved outcomes for patients. Hence, it is important for community pharmacy services to set goals and establish continuity of services with patients to encourage feedback.

In addition, to integrate fully into the patient’s primary care pathway, it will be important that pharmacists have access to patients’ medical information. This has been recognised to some extent with the implementation of the NHS Summary Care Record in 2016, but this is limited to details on allergies, adverse reactions and medication (current repeats, 12 months’ history or acute and 6 months’ history of discontinued medicines), unless the patient agrees to additional details, such as significant diagnoses (PSNC, 2015). Pharmacists having access to patients’ medical information is particularly useful for them to be able to communicate decisions with
GPs and improve safe delivery of pharmacy services when GPs are unavailable (Andalo & Sukkar, 2015, Gibson & Smith, 2016).

Moreover, publicising extended community pharmacy services could enhance the credibility of such services and establish clearly defined roles for pharmacists, thus increasing public awareness and reducing tensions with GPs (Hindi et al., 2017, Hall et al., 2018). In particular, patients’ perception of GPs as authoritative figures within their primary care pathway (Hindi et al., 2017) suggests that GPs’ role in signposting and referral to community pharmacies may be fundamental to increasing service uptake. Yet, GP referrals would depend on community pharmacies having resources to provide consistent, high quality services. This requires community pharmacies having adequate size, space and privacy alongside fully adequate and soundproof consultation rooms to provide extended services (Hindi et al., 2017). It is also necessary to assign sufficient pharmacists and support staff on duty to manage extended services together with dispensing prescriptions. Furthermore, developing quality measure assessment tools which evaluate the delivery of extended services amongst community pharmacies could be another important step towards ensuring high quality services (Jacobs et al., 2017).

To overcome some of the barriers to better integration of GP and community pharmacy services, existing remuneration models will also need to be reviewed to incentivise both service quality and an alignment of outcome measures used for both GP and community pharmacy contractual arrangements (Bradley et al., 2008, Jacobs et al., 2017, Jacobs et al., 2018). Incentivising GP referrals and remunerating joint working between community pharmacists and GPs could strengthen integration (Bradley et al., 2008, Hann et al., 2017, Jacobs et al., 2017). In addition, GPs inclination to recommend patients to community pharmacy services relies on them having confidence in the pharmacist’s ability to provide a valuable and competent service. Implementing more multidisciplinary team activities which require mutual responsibilities and shared decision-making could strengthen solidarity between pharmacists and GPs and increase GPs confidence in pharmacists’ abilities (Braithwaite et al., 2016, Bradley et al., 2018). More research is needed to explore how GPs confidence in community pharmacists could be improved.
Conclusion

GPs’ awareness of community pharmacy services was low, and whilst pharmacists were optimistic about the potential value of extended services, they believed there were a number of barriers to successful implementation and integration. GPs were more cautious, and collaborations between pharmacists and GPs were found to remain poor despite the introduction of extended services which required additional communication. Future research should explore different approaches to raise awareness for pharmacy services and better understand how pharmacists and GPs could achieve better collaboration.

References


Hossain, L. N., Fernandez-Llimos, F., Luckett, T., et al. (2017) Qualitative meta-synthesis of barriers and facilitators that influence the implementation of community pharmacy services: perspectives of patients, nurses and general medical practitioners. BMJ Open 7 (9), e015471.


Appendix 6a: Search strategy for each database

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- **Mapping** = matches terms with the controlled vocabulary of the database
- **Note**: terms are mapped in addition to keywords
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- `DOCTYPE (ar or re)` = document type either Article or Review
- `Timeline: 2005-present activated for all searches`
- `Scopus automatically searches for plurals`
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- **Filters for all searches:** Publication date from 2005/01/01 to 2017/12/31
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* Timespan 2005-2017 activated for all searches
**Science Direct**

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- 2005-present filter activated for all searches and Journals filter activated
- Using the singular form of a word finds the singular, plural, and possessive forms of most words.
Timeline 2005-2017 applied for all searches

When a singular word is searched, the plural and possessive forms of that word will also be searched

Mapping= matches terms with the controlled vocabulary of the database

Note: terms are mapped in addition to keywords

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- Note: terms are mapped in addition to keywords
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Chapter Seven - Study Two

Chapter Guide:

This chapter presents the manuscript for Study Two which was published in BMC Family Practice in 2019.

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<td>Authors</td>
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Note: The formatting and layout are consistent with the requirements for the journal. Therefore, references will be placed at the end of this chapter rather than at the end of the thesis.
Community pharmacy integration within the primary care pathway for people with long-term conditions: a focus group study of patients’, pharmacists’ and GPs’ experiences and expectations

Ali M.K. Hindi* (BPharm, MSc)  
PhD student  
Ali.hindi@manchester.ac.uk

Ellen I. Schafheutle (PhD, MRes, MSc, FRPharmS, FFRPS)  
Professor of Pharmacy Policy and Practice  
Ellen.schafheutle@manchester.ac.uk

Sally Jacobs (BSc, PhD)  
Lecturer  
Sally.jacobs@manchester.ac.uk

*Author for correspondence  
Full postal address for all:  
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry; School of Health Sciences; Faculty of Biology, Medicine and Health, The University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom
Abstract

Background: This study aimed to use marketing theory to examine the views of patients, pharmacists and general practitioners (GPs) on how community pharmacies are currently used and to identify how community pharmacy services may be better integrated within the primary care pathway for people with long-term conditions (LTCs).

Methods: A qualitative research design was used. Two focus groups were conducted with respiratory patients (n=6, 5) and two with type 2 diabetes patients (both n=5). Two focus groups were held with pharmacists (n=7, 5) and two with GPs (both n=5). The “7Ps marketing mix” (“product”, “price”, “place”, “promotion”, “people”, “process”, “physical evidence”) was used to frame data collection and analysis. Data was analysed using thematic analysis.

Results: Due to the access and convenience of community pharmacies (“place”), all stakeholder groups recommended using community pharmacies over GP practices for services such as management of minor ailments, medication reviews and routine check-ups for well managed LTCs (“product”). All stakeholder groups preferred pharmacy services with clear specifications which focused on specific interventions to reduce variability in service delivery and quality (“process”). However, all stressed the importance of having an appropriate system to share relevant information, allowing pharmacists and GPs two-way flow (“process”). Pharmacists and GPs mentioned difficulties in collaborating with each other due to inter-professional tensions arising from funding conflicts, which leads to duplication of services and inefficient workflow within the primary care pathway (“people”). Patients and GPs were sometimes doubtful of community pharmacies’ potential to expand services due to limited space, size and poor quality consultation rooms (“physical evidence”). However, all stakeholder groups recommended promoting community pharmacy services locally and nationally (“promotion”). Patients felt the most effective form of promotion was first-hand experience of high quality pharmacy services and peer word-of-mouth. The added value of using pharmacy services was faster access and convenience for patients, and freeing up GPs’ time to focus on more complex patients (“value”).

Conclusions: Using the 7Ps marketing mix highlighted factors which could influence utilisation and integration of community pharmacy services within the primary care pathway for patients with LTCs. Further research is needed to identify their relative importance.

Keywords: community pharmacy, primary care, general practice, long-term condition, patients, pharmacists, general practitioners, integration, collaboration.
Background

Healthcare organisations worldwide are under substantial pressure from increasing patient demand [1]. In the United Kingdom (UK), this has led to shifting many secondary care activities towards primary care and increasing workload pressures on general practitioners (GPs) [2, 3]. The increasing population of patients with long-term conditions (LTCs) are associated with high levels of morbidity, healthcare costs and GP workloads [4-6]. These patients present with a range of healthcare needs such as regular monitoring of condition(s), management of complex dosing regimens, ensuring appropriate use of medications and lifestyle education [7, 8].

Policymakers worldwide have recognised the potential of community pharmacies to meet some needs of patients with LTCs and reduce workload pressures on GPs [9-12]. Community pharmacies are accessible and convenient primary care venues with long opening hours and non-appointment-based services [9, 10]. Community pharmacists are increasingly clinically trained healthcare professionals whose skills and knowledge could be further utilised [7, 11, 13]. International health policy initiatives have focused on extending community pharmacy services through novel reimbursement structures to help alleviate existing pressures in general practice [14].

The UK National Health Service (NHS) introduced new community pharmacy contractual frameworks in England and Wales in 2005 and Scotland in 2006, which reimburse pharmacists for clinical, medicines and public health services, in addition to medicines supply (i.e. dispensing) [9]. In England, the contractual framework composes of three service types: “essential”, “advanced” and “locally commissioned”. “Essential services” cover traditional services provided by all community pharmacies (dispensing medications/appliances, repeat dispensing, signposting i.e. informing or advising people to visit other health/social care providers and support organisations, when appropriate). “Advanced services” focus on medication reviews conducted by pharmacists as well as flu vaccinations and urgent medicines supply. The two main medicines review services are the Medicines Use Review (MUR) and the New Medicine Service (NMS). Both services focus on improving medication understanding and adherence for patients with LTCs [15]. Similar services also exist in Wales [16], Northern Ireland [17] and Scotland [18]. To preserve patient privacy and confidentiality, consultation rooms became a prerequisite for community
pharmacies offering advanced services under the new contract. There are also other medication and public health services which can be commissioned according to local need. These “Locally commissioned services” include minor ailments management, lifestyle advice, blood pressure checks, cholesterol tests and smoking cessation services. These extended services currently provide opportunities for community pharmacists to offer support for patients with LTCs that extends beyond medicines supply.

Despite the new community pharmacy contractual frameworks in the UK, there have been barriers to pharmacists providing extended services such as inadequate resources, time constraints, unsuitable premises and lack of management support [11, 19-21]. There is also evidence that patient awareness, demand and uptake of community pharmacy services are low [22-25] and community pharmacy integration within primary care has been slow [26]. The primary care pathway for patients with LTCs is the healthcare route these patients take for ongoing treatment and management of their conditions [4, 6]. GPs are central to this patient pathway, but community pharmacy services have traditionally been quite separate and GPs may not be aware or necessarily supportive of extended services due to concerns about pharmacists’ financial motives, competencies, and encroachment of professional boundaries [27]. This lack of GP support/awareness also impacts patients’ awareness, demand and use of community pharmacy services as many patients seek GPs endorsement for use of healthcare services [25, 26]. A lack of community pharmacy integration within this patient pathway prevents benefits to patients or the healthcare system through the optimal use of extended pharmacy services [27]. It is important to identify how community pharmacies could be better used and integrated within the patient’s primary care pathway, as effective collaboration between GPs and community pharmacists will be an important factor to optimise patient care [25, 26].

Recent UK policy initiatives have highlighted the need to further extend community pharmacy services and enhance integration within primary care [7, 10]. This requires better understanding of key stakeholders’ (patients’, pharmacists’, and GPs’) expectations, needs and preferences regarding the contribution of community pharmacy. Previous research has explored stakeholders’ perspectives of community pharmacy services [22, 23, 25, 28-30]. However, these studies focused on specific services, rather than the general expectations and awareness of the extended role of
community pharmacies. Moreover, despite GP practices being central to the patient primary care pathway, studies rarely consider the influence that GPs have on patients accessing community pharmacy services, nor do they explore GPs’ expectations of community pharmacy services in relation to services they currently deliver.

There has been growing interest from public sector organisations in the application of marketing theories to enhance service provision to achieve organisational goals [31, 32]. The driver being that marketing theories focus on identifying consumer (and other stakeholder) needs and preferences whilst considering other organisational complexities [31, 32]. It has been argued that the use of marketing theories in public sectors could provide a better understanding of how these organisations could meet the expectations of their target population [31, 33]. Moreover, previous studies have demonstrated the applicability of marketing theories to shed light on factors which influence the demand and uptake of public sector services[34, 35]. Therefore, marketing theories may be applied to primary healthcare and, specifically, the community pharmacy context to provide valuable insights such as: identifying stakeholders’ needs and preferences, understanding factors that influence service uptake, and exploring how services could meet quality standards [36-38].

Despite the wide recognition that marketing theories are the cornerstone for successful implementation of new products or services [36, 39], marketing theory has had limited application in community pharmacy research [36, 38-40].

The “7Ps marketing mix” which was used in this study has been considered as one of the cornerstones of marketing theory [32, 41]. The 7Ps consists of seven components (“product”, “price”, “place”, “promotion”, “people”, “process” and “physical evidence”) (Figure 7-1) that an organisation should account for to successfully market their product or service to target customers [41]. The 7Ps are based on understanding what consumers want/need from a service whilst accounting for the influence of service design, service delivery and external communications on consumers’ perceptions of services. Evidence has shown that the 7Ps can be applied to organisations providing public services [31, 36, 42]. Moreover, two studies demonstrated the influence of 7Ps on patients’ accessing and utilising hospitals [43, 44].
The aim of this study was to use marketing theory (7Ps marketing mix) to explore how community pharmacies in the UK are currently used and to identify how their services may be better used and integrated within the primary care pathway for people with LTCs.

**Methods**

**Study design and setting**

A qualitative research design was used. Separate focus groups were conducted to explore the views of stakeholders, i.e. patients with LTCs, pharmacists and GPs. The study was set in Greater Manchester, England.
Theoretical framework

The “7Ps marketing mix” was used to frame data collection and analysis. The 7Ps was applied here in relation to community pharmacy services (Table 7-1), informed by findings from an earlier systematic review [22].

Table 7-1: 7Ps marketing mix components in relation to community pharmacy services within the primary care pathway for patients with long-term conditions

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<td>Exploring stakeholders’ expectations and experiences regarding utilisation and delivery of community pharmacy services.</td>
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<tr>
<td><strong>People</strong></td>
<td>Exploring how interactions between stakeholders affect perceptions and delivery of community pharmacy services.</td>
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<td><strong>Place</strong></td>
<td>Exploring access to community pharmacies</td>
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<tr>
<td><strong>Physical evidence</strong></td>
<td>Identifying how physical characteristics of community pharmacies influence expectations and perceptions of stakeholders</td>
</tr>
<tr>
<td><strong>Promotion</strong></td>
<td>Investigating how community pharmacy services are communicated and promoted</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td>Investigating what added value stakeholders place on community pharmacy services within the primary care pathway</td>
</tr>
</tbody>
</table>
Sampling

Purposive criterion sampling was used to recruit study participants [45]. The characteristics patients were selected on were that they had one or more of the common long-term conditions: type 2 diabetes, asthma, chronic obstructive pulmonary disease (COPD). Many community pharmacy services already exist which are relevant to patients with these conditions such as medication reviews, health checks (blood pressure, cholesterol tests etc.), influenza vaccinations and smoking cessation [46-50]. Community pharmacists were recruited based on experience offering extended pharmacy services. There were no specific characteristics set for recruitment of GPs.

Two focus groups were conducted for each: patients with diabetes, patients with respiratory conditions, pharmacists, and GPs. Based on expert recommendations, this sample was deemed sufficient to meet the aims of this study [51-53].

Recruitment

Patients were identified through two patient charity organisations and two NHS-supported online resources involving patients and members of the public in research. The research team provided study information for dissemination with contact details (invitation letters, participation information sheets and/or participation flyers). Patients who contacted the research team were invited to take part via phone/email.

Pharmacists were identified through existing networks. Known contacts, the Greater Manchester Local Pharmaceutical Committee and Greater Manchester Clinical Commissioning Groups were asked to circulate study information to pharmacists and GPs respectively. Pharmacists/GPs who contacted the research team were invited to take part by phone/email. Pharmacists and GPs were also identified and recruited through advertising on social media. The research team was unable to identify how many participants refused to participate due to these recruitment methods. Prior to study commencement, the research team had no established relationship with participants. All participants were reimbursed for their time and reasonable travel expenses.
Data collection

The development of the focus group topic guides was informed by the 7Ps marketing mix framework and existing literature on the topic [22]. Each marketing mix component (“P”) was used to frame questions relative to participants’ experiences and expectations of community pharmacy services. As prompts, a list of community pharmacy services was provided for participants during the focus groups (Table 7-2). The topic guide differed somewhat for patients, pharmacists and GPs, to account for their different roles within primary care (Appendix 7a). The pharmacist topic guide was tested in a pilot focus group with university staff who had experience working in community pharmacies. Following the pilot, participants were asked for feedback and final revisions made. The lead author received considerable training to conduct focus groups (i.e. courses, workshops, focus group pilot) and was supported by both co-authors who are both experienced qualitative researchers and co-facilitated all groups.

Table 7-2: List of services community pharmacies offer

<table>
<thead>
<tr>
<th>Medicines related services</th>
<th>Public health services</th>
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</thead>
<tbody>
<tr>
<td>• Medicines Use Review</td>
<td>• NHS Health checks</td>
</tr>
<tr>
<td>• New Medicine Service</td>
<td>• Asthma management (support)</td>
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<tr>
<td>• Minor Ailments scheme</td>
<td>• Diabetes management (support)</td>
</tr>
<tr>
<td>• Asthma inhaler technique service</td>
<td>• Flu vaccination</td>
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<tr>
<td>• COPD rescue packs toolkit</td>
<td>• Travel health</td>
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<tr>
<td>• Repeat dispensing</td>
<td>• Smoking cessation</td>
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<tr>
<td>• Independent prescribing by pharmacists</td>
<td>• Weight management</td>
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<tr>
<td>• Out of hours (access to medicines)/emergency supply</td>
<td>• Alcohol screening and brief advice</td>
</tr>
<tr>
<td>• Domiciliary/ Home care support</td>
<td>• Emergency hormonal contraceptive</td>
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</table>
Most focus groups were conducted at The University of Manchester; only one GP group was conducted at a GP surgery conference room, between January and April 2018. The focus groups were facilitated by the first author and co-facilitated by one of the co-authors, who took handwritten notes. Each focus group lasted between 50 and 110 minutes. After each focus group, a debrief session was held between the facilitators to discuss and summarise key points.

Data analysis

All focus groups were audio-recorded with verbal and written consent and transcribed verbatim. Transcriptions were imported into NVivo11 to manage the data analysis process [54]. Data analysis was iterative, commencing after the first focus group, with transcripts analysed using thematic analysis [55]. This method provided rich detailed descriptions of the dataset under themes identified using both inductive and deductive approaches, arising from the data itself whilst mapping onto the 7Ps marketing mix model. The first author followed the six phases of thematic analysis: familiarisation with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report [55]. Analysis and themes were discussed with the co-authors in regular meetings throughout analysis.

Results

A total of 43 participants took part in eight focus groups. Two focus groups were conducted with asthma/COPD patients (n=6 and 5), two with type 2 diabetes patients (both n=5). Two focus groups were held with pharmacists (n=7 and 5) and two with GPs (both n=5). Participant characteristics are provided in Table 7-3.

Emerging themes were mapped onto the 7P components to develop a conceptual framework (Figure 7-2). This identified factors influencing awareness, demand and use of community pharmacy services for patients with LTCs. Findings are presented together, whilst identifying which of the three stakeholder groups they stemmed from, thus similarities and key differences between them.
Table 7-3: Participant demographics

<table>
<thead>
<tr>
<th>Focus group</th>
<th>Participants</th>
<th>Participant Number</th>
<th>Gender</th>
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<tbody>
<tr>
<td>1</td>
<td>Asthma/COPD patients</td>
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<td>6</td>
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<tr>
<td>2</td>
<td>Asthma/COPD patients</td>
<td>7</td>
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<td>11</td>
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<td>3</td>
<td>Diabetes patients</td>
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<td>4</td>
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<td>5</td>
<td>Pharmacists</td>
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<td>Pharmacists</td>
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<td>43</td>
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Figure 7-2: Conceptual framework developed from mapping themes/subthemes onto 7Ps marketing mix components
Product

Community pharmacy expectations

All groups of stakeholders discussed their expectations of community pharmacy services within the primary care pathway. These expectations were centred on “key pharmacy services” and “expanding pharmacists’ roles”.

Key pharmacy services

All stakeholders’ expectations of community pharmacy services were based on how patients used community pharmacies for their LTCs. All stakeholder groups’ expectations of community pharmacies over and above traditional supply functions were predominantly to provide medicines management for patients with LTCs. This involved ensuring appropriate medication usage, educating patients on their medications, double-checking prescriptions and referring patients to GPs if necessary. Public health services were not usually discussed by any of the stakeholder groups. Even when stakeholder groups were probed about public health services, all stakeholders mentioned that patients rarely used them and were unaware of them being offered by community pharmacies. Moreover, participants in all focus groups considered public health services to be expanded rather than standard community pharmacy services.

“Being able to talk about the medicines and the side-effects and any worries or concerns that I’ve got and anything associated with it. That’s the main thing to me, ‘cause that’s the basis of how a pharmacist used to be” [F1, asthma/COPD patient FG1]

All focus groups saw the potential for using community pharmacies to reduce GP visits. Most diabetes patients had experienced difficulties in obtaining GP appointments for regular check-ups/procedures for well-managed conditions (e.g. blood tests) and recommended community pharmacies to deliver such services. Some asthma/COPD patients were aware that community pharmacies offered inhaler technique services but proposed community pharmacies routinely provide inhaler technique and nebuliser services due to difficulties accessing GP services. Similarly, some GPs suggested community pharmacies could provide regular check-ups and medication reviews for patients with well-managed LTCs to reduce their workload pressures. Overall, there was a shared agreement between all focus groups that
patients with LTCs would benefit from community pharmacies regularly providing check-ups and medication reviews.

“I have to have blood tests and then I wait ten days and another appointment and it's clogging up their [GPs] resources for just managing a condition that's not changing. Admittedly, if it changes, the levels change, then go to the doctor, but for someone like me that it hasn't changed in ten years, it would probably be more efficient for that diabetic management service to actually do what the GP does for me.” [M15, diabetes patient FG3]

On the other hand, all groups of stakeholders perceived GP practices to be more suitable than community pharmacies for management of patients’ conditions which required a range of clinical interventions such as diagnosis of symptoms, physical examinations and alteration of medications. GPs and practice nurses were viewed by most patients and all GPs as more experienced and authoritative healthcare professionals to manage patients’ conditions and perform clinical services. Only a few patients in the respiratory and diabetes focus groups argued that pharmacists were well-suited to manage patients’ conditions and perform clinical services. All pharmacists also believed that patients would be more comfortable with GPs and practice nurses managing their conditions and performing clinical services.

“I'd rather see him [GP] when I'm thinking of changing medication ...because he knows sort of all different episodes I've had so...I think for things like physical health because you may have been to your GP several times for different aspects, then I think it’s better to see them for that”. [F8, asthma/COPD patient FG2]

**Expanding pharmacists’ roles**

All stakeholder groups perceived pharmacists’ skills to be underutilised and supported more active involvement in patients’ LTCs. Patients and pharmacists were generally more confident than GPs in pharmacists’ abilities to expand their roles. Most patients were supportive of pharmacists providing minimally invasive procedures, such as blood tests. Similarly, most GPs supported pharmacists providing minimally invasive procedures but needed to be assured that the pharmacists providing these services were competent.

“I'm just wondering if there is just a small leap, sort of like an additional professional training that would allow pharmacists who are trained medical people to be able to take
Conversely, pharmacists underestimated patients’ support for them and perceived that they preferred GPs and nurses to manage their LTCs.

“But I think people’s expectation is that the GP and the nurse manages their diabetes and that’s not really much to do with pharmacy”. [M24, pharmacist FG5]

Some patients and GPs were indeed critical of pharmacists, indicating that they lacked determination to take more responsibility. They expressed a need for pharmacists to be more active in expanding their roles and to distinguish themselves from other pharmacy staff. Pharmacists also acknowledged that not all pharmacists were willing to expand their roles and face new challenges. The general consensus amongst all stakeholder groups was that, unless pharmacists took the initiative, their perceived status as “shopkeepers” would not change.

“But what are they [pharmacists] doing? Because they should be doing a lot more than they’re being paid to do or whatever, they’re running a business to sell their shampoos and whatever, but there must be something else that we could be doing to really enhance that role. So why aren’t they coming out?” [M36, GP FG7]

**Process**

**Access to extended services**

There was little indication by patient and pharmacist focus groups that patients with LTCs sought out extended services. Rather, patients obtained access through active recruitment by pharmacy staff at the counter. None of the patients recalled GPs referring them to pharmacy services. Similarly, most GPs did not recall referring patients to any pharmacy services. Both patients and GPs held pharmacists partially responsible for this lack of GP referrals, believing pharmacists did not promote their skills and services beyond dispensing.

“It [accessing a pharmacy service] will depend on the people who sell it...how much further they are prepared to go that extra half mile by telling you or helping you with things, or giving you advice” [F5, asthma/COPD patient FG1]
Service delivery

Both pharmacists and GPs suggested that some extended services lacked clear specifications, leading to disparities in service delivery and quality. Some GPs’ mentioned that they were less likely to refer their patients to community pharmacy services which they believed lacked clear specifications.

“I’m probably not gonna actually advise someone to go to a community pharmacist weight management, because I just don’t know what they do and how useful it is”. [M40, GP FG8]

Most pharmacists and GPs proposed developing community pharmacy services that had clear specifications and focused on a single, specific intervention, mentioning flu vaccination and inhaler technique services as examples. Pharmacists believed that such services would enhance consistency in service delivery and quality as they were easier for pharmacists to deliver and promote to patients and other healthcare providers. All of the patients in the respiratory and diabetes focus groups similarly expressed preferences for community pharmacy services that focused on one particular intervention such as cholesterol and blood tests emphasising that procedures for these services were easy for them to understand.

“They need to be specific as well. If the service is well designed, well explained and you’re just focusing on one particular problem, one specific thing that you can everybody fully understands, you know, what is it all about, then you can well...easily communicate that with a doctor, patient, yourself” [M26, pharmacist FG5]

Pharmacists and GPs also perceived that inadequate time, management pressures to perform services and pharmacy managers’ financial conflicts of interest negatively influenced the quality of community pharmacy services. Some patients in the respiratory and diabetes focus groups were wary of pharmacists’ workload pressures and doubted their capacity to provide extra services beyond dispensing medications. When discussed, all stakeholder groups generally agreed that pharmacists’ workload was a major barrier to providing extra services beyond dispensing medications.

“I was thinking to myself, if they’re so stretched and they’re so busy and they’re sometimes making mistakes with prescriptions, there’s a chain of pharmacies, how are
they going to offer all these things if they’re struggling to just do the medication, you know?” [F10, asthma/COPD patient FG2]

Integration of services

It was evident from all focus group discussions that community pharmacies and GP practices needed to improve integration to establish a seamless pathway for patients with LTCs. All stakeholder groups agreed that they currently worked in separate siloes which led to duplication of services and miscommunication between pharmacists and GPs.

“You've got to address the problem of duplication of effort as well, it's not a seamless setup, is it, they've not really thought through the process” [F30, pharmacist FG6]

Some pharmacists and GPs suggested community pharmacies should provide services that were not widely offered by GPs such as domiciliary support and medication reconciliation. All GPs in one of the focus groups also discussed including community pharmacies as part of care plans for patients with LTCs. GPs felt that having a shared care plan would significantly enhance teamwork between community pharmacy and GP practice staff. GPs also believed that GP practices would be more likely to collaborate with community pharmacies if they had shared care plans.

“I would say that there hopefully would be some agreement about when that patient needs a routine review, who does it, what particular things need to be checked, the action plan, and it would be a standard plan that everybody’s got... I think that could be applied to several different long-term conditions cause you’d have the buy-in then of the practice”. [F37, GP FG7]

All stakeholder groups believed pharmacists required more access to patient information (i.e. medical records) to have a better overall understanding of patients’ conditions. Lacking full patient information made pharmacists hesitant in clinical decision-making for fear of making mistakes. GPs were similarly concerned with the safety implications of pharmacists providing extra services without having access to patients’ medical records and it also reduced patients’ confidence.

“We've not got the full picture. Certainly with me, you know I will think twice about, do I really want to go down this process, because I don’t know where it's going to lead and I
might find myself unable to give the right answers or not be confident that what I've said is correct in light of information that I don't know” [M23, pharmacist FG5]

Conversely, some pharmacists were concerned that being granted more access to patient information could hold them more accountable for patient outcomes. Hence, some suggested restricting pharmacists’ access to specific services which required additional patient information. All GPs and patients suggested restricting pharmacy access to medical records to maintain patient confidentiality and were mainly concerned about non-healthcare staff accessing medical records.

“So if they could have obviously not the whole patient record, but if they could have access to part of it, mainly the meds and the bloods, would work. Because it's patient confidentiality issues, isn't it?” [F39, GP FG8]

Nonetheless, all focus groups emphasised the importance of having a shared information system to facilitate collaborative working. Pharmacists and GPs referred to current difficulties for GPs to embed community pharmacy services: referring patients to community pharmacy services was considered “unsafe” by GPs as patient interactions and outcomes were not documented and communicated to them.

“But we don’t really know what interactions are occurring until the patients come back in and tell us that I saw A, B, C or D healthcare professional. So ideally to back all of this up, we need an integrated IT system and we haven’t got one. Then we could do a lot more if we did. Otherwise there are gaps in information” [M35, GP FG7]

People

Pharmacy workforce

Pharmacist-patient relationship

Patients in all focus groups often referred to their relationship with their pharmacists and how it influenced their perceptions of community pharmacies. There was agreement amongst pharmacist and patient focus groups that patients were more willing to accept extended services if they had good relationships with the pharmacist. They believed that continuity of care with the pharmacist added a “personal touch” to services provided which enhanced their
uptake. However, all focus groups perceived patients with LTCs to be more familiar with their GPs and practice nurses than with their pharmacists. They mentioned that unlike GP practice staff, community pharmacists changed regularly. Therefore, GP practice staff offered more continuity in provision of services which was seen as an important factor for managing long-term conditions.

“Yeah, and of course... there isn’t that constant workforce within pharmacies also, so they come and go, and that’s a problem”. [M36, GP FG7]

Pharmacy staff involvement

All pharmacists mentioned the importance of having the whole pharmacy team engaged with delivery of services in order to reduce workload pressures on pharmacists and enhance workflow. Pharmacists believed their staff played an important role in identifying and recruiting patients for extended services. Patient and GP focus groups did not discuss the importance of other pharmacy staff.

“There is something about counter staff because things like new medicine service...I gave them all of the responsibility to get the patients in. But that was brilliant and then that responsibility shifted from me and it was then, the care of the patients was my focus”. [M27, pharmacist FG6]

Pharmacist-GP collaboration

All Pharmacists and GPs stressed the importance of enhancing inter-professional relationships to improve the delivery and uptake of services for patients with LTCs. Both referred to difficulties in collaborating due to tensions arising from funding conflicts, giving the example of influenza vaccination services, where GPs sometimes worked against pharmacists and advised patients to avoid using community pharmacies. Some patients in the respiratory focus groups were also aware of these funding conflicts which made them question collaboration between pharmacists and GPs. Regardless of funding conflict awareness, patients in all focus groups were in agreement that their pharmacists and GPs did not collaborate with each other.

“I think it would be nice for us all to be working together but there are barriers, I think, they’re potential barriers. One, for example, is with the flu vaccine, the pharmacist is
looking for their income and we're looking for our income, so that has a sort of a point of contention” [M35, GP FG7]

Pharmacists and GPs in all focus groups argued that unless both were adequately remunerated for joint working, they were unlikely to prioritise the promotion or provision of extended pharmacy services.

“But I think realistically, this is more than sharing the love, it's sharing the funding, because no one’s going to do this [extended pharmacy services] unless they have suitable recompense, so they'll [pharmacists] be, yes, helping us out...but at the same time, they're not gonna do it for free, are they?” [F37, GP FG7]

All of the pharmacists also discussed GPs’ unwillingness to recognise pharmacists as healthcare providers as another barrier to collaboration. They believed GPs did not have an understanding of what pharmacists could offer to patients with LTCs. Conversely, all GPs often discussed community pharmacists’ potential to expand and become an integral part of patients’ primary care pathways. Moreover, GPs expressed interest in enhancing communication with pharmacists, preferring face-to-face communication over telephone/fax.

“If they [community pharmacists] actually came into the surgery one day a week or something... because we could flag up any concerns or issues and we could discuss things there and then. So yeah, if they had direct contact once a week or something that would be quite handy” [M41, GP FG8]

A few pharmacists in both focus groups mentioned instances of successful collaboration when they had invested time and effort to communicate their roles and demonstrate their skills to GPs. When discussed, all pharmacists and GPs believed that although GPs were receptive to such approaches, they wanted pharmacists to be more proactive.

“But then to be honest with you, when you try to go and try to advertise it [extended services], you're trying to go and make that relation happening, they see you as a useful point of contact for various reasons and where you can build on it”. [M26, pharmacist FG5]
However, some pharmacists were cautious of getting more involved with GPs as negative outcomes could reduce their pharmacy’s revenue.

“Because the danger of getting more involved and communicating more with GPs is if something goes wrong that's your pipeline of money threatened because GPs do influence where patients go. So, you might be savvy to just have a little bit of communication now and again” [M23, pharmacist FG5]

Place

Accessibility of community pharmacies

Flexible opening hours and non-appointment based services were considered by all stakeholder groups to be community pharmacies’ greatest advantage over general practices. Due to the accessibility of community pharmacies, patients preferred them over GP practices for non-urgent and less invasive services.

“But my biggest thing is like the simple stuff when you're going for your six-monthly checks for your blood tests and your blood pressure, you're waiting for at least three weeks to get a doctor's appointment. So stuff like that can probably be done, I think, at a pharmacy” [M20, diabetes patient FG4]

Paradoxically, some pharmacists perceived this ease of access as a significant barrier to providing extended services as it increased workloads and tied them to medicines supply.

“It’s quite difficult to deliver quality services on top of doing other stuff...because part of the advantage of community pharmacy is that people don’t need to book an appointment, but actually that makes it more difficult to plan into your workflow...” [M24, pharmacist FG5]

GP practice and community pharmacy co-location

There were mixed opinions amongst patients and pharmacists on the importance of community pharmacies being located next to GP practices. GPs, however, were unanimous in their opinions that community pharmacies were better co-located in GP practices, which some patients also perceived to be more convenient. Both pharmacists and GPs perceived co-location to improve their communication, relationship and workflow.
“But in the previous practice I was in, the pharmacist... it was a community pharmacy, it wasn’t the GP’s pharmacy, but it was co-located in the same building. And in that situation I knew all the pharmacists by face and I’d sometimes just pop in there to ask a question and they’d sometimes just pop in to ask me a question. So I had a much more solid understanding of what they did” [M40, GP FG8]

Physical evidence

Community pharmacy premises

Patients and GPs were sometimes doubtful of community pharmacies’ potential to expand services for LTCs due to limited space and size. All stakeholder groups were in agreement that current community pharmacy premises gave the impression of a retail shop rather than a healthcare venue.

“They have a shop and there’s a professional and there’s somebody counting pills and there’s somebody producing a prescription. Well that just doesn’t make sense in the twenty-first century... I think something more radical has to happen and we have to break down these kinds of physical walls”. [M36, GP FG7]

In addition, all focus groups criticised the size and quality of consultation rooms and stressed the importance of having sufficient privacy within the pharmacy.

“M4: It’s only like a little cupboard, isn’t it?

F5: Yeah, a lot of them have a poky little room, yeah.”

[Asthma/COPD patients FG1]

Promotion

Awareness of community pharmacy services

Community pharmacy engagement with patients and GPs

All patients were generally unaware of the considerable heterogeneity in community pharmacy types and organisations. Hence, patients and pharmacists believed that patients’ awareness of community pharmacy services was influenced by how active their usual pharmacy was at offering a range of services. Patients’ rarely or infrequently visiting community pharmacies were unaware of most services offered by their pharmacy. All GP
participants’ awareness of community pharmacy services was mostly dependent on services delivered by community pharmacies near their GP practice.

“If they [patients] go to one of the really engaged sort of right on the cusp of the profession, delivering lots of services, multiple consultation rooms, everything going there, then generally just because that's happening around them, they'll have much more exposure. If it's not happening and it is very much a supply shed style, then it's probably not so much” [M27, pharmacist FG5]

Patients and pharmacists both felt that patients needed to better engage with the community pharmacy to be aware of services offered. Pharmacists also stressed the need to incentivise GPs to refer patients to extended pharmacy services. GP participants were concerned that referring patients might affect GP practice revenue.

“There's got to be benefit in it to a GP [to refer patients to community pharmacy services]. You've got to sell it on the basis that this is going to make your life easier and it'll count towards your QOFs [quality and outcomes framework] if you do that. If it's a win-win then yes, but as [other participant] said, if it's a competitive thing, no” [M24, pharmacist FG5]

**Commissioning of services**

Both pharmacists and GPs were critical of the lack of consistency with which community pharmacy services were delivered. This was primarily due to differences in the commissioning of community pharmacy services within different localities. Hence, some pharmacists mentioned being unable to offer some services to patients which reduced patients’ awareness of services offered.

“Especially because a lot of patients talk to each other, oh, you know, take your child to such and such a pharmacy you can get it free. But then when they turn up to that pharmacy and they say, sorry, we don't do it, they feel disappointed and that way, they might not bother next time to ask for any service”. [F33, pharmacist FG6]

Pharmacists also highlighted that there were different service specifications within different commissioning areas which made it even more difficult for patients to know what extended services were offered. All stakeholder groups were in agreement that the
variation in services offered amongst different community pharmacies blurred patients’ awareness of services offered.

“And I said could you possibly check my blood pressure? Yeah, no problem, so I did it and it was fine, and everything seemed to just go back to normal, so I thought, hang on a minute, if it’s the pharmacists that won’t do can’t do it, why is one saying we can’t do it and one does say we can do it?” [F9, asthma/COPD patient FG2]

In addition, all GPs and pharmacists emphasised that service delivery was often dependent on individual pharmacists. Therefore, even if services were commissioned, patients who visited these pharmacies were not guaranteed to receive them. In addition, GPs in all focus groups did not want to risk referring patients to community pharmacies for services that may not be offered.

“It’s very frustrating because the uptake from community pharmacists varies, and you send a patient off to this particular branch where you know they do it and the patient comes back after twenty minutes, oh, that pharmacist is not on today, you know? So, well, that was a wasted effort” [F37, GP FG7]

**Strategies to promote services**

**Local promotion**

Some patients suggested that pharmacists put leaflets in patients’ bags and use emails/texts/social media to promote services. Nonetheless, most patients in all focus groups felt that the most powerful form of service promotion would be experiencing extended pharmacy services first hand. In addition, pharmacists and patients discussed patients being more confident in the quality of services if recommended by peers with a good service experience (i.e. word-of-mouth). GPs made little mention of local promotion as they were mainly concerned with promoting community pharmacy services on a national level.

“Do you know what the best thing's been for us this year being with the flu jab service is word-of-mouth. Oh, I went to Ken down the road, it was fantastic I didn't feel it. You had your flu jab, and then Ken’s got a line of people outside his branch, because that one person's had a really good experience” [F28, pharmacist FG6]
National promotion

All stakeholder groups highlighted the importance of nationally promoting community pharmacy services to attain a wider level of public awareness. They commonly attributed the success of influenza vaccinations to its consistent national promotion through the media. In addition, some pharmacists mentioned educating patients that NHS community pharmacy services are free to them as some patients assumed all community pharmacy services charged a fee.

“We can advertise all day long in our pharmacy, putting posters up, but unless someone’s going to come into the pharmacy and see those posters who's going to see it? So, if it's advertised further afield, on TV, radio, newspapers, and so on, that's going to get people to realise what can be done in a pharmacy” [M25, pharmacist FG5]

All GPs stressed the importance of raising public awareness regarding the benefits of using community pharmacy services to reduce unnecessary patient visits to GPs.

“So I think overall, I'm talking about a strategic level now in terms of informing and education, educating patients as to what services they can get, at the right time, at the right place and that would help a lot in reducing unnecessary visits to the GP”. [M43, GP FG8]

Price

Added value of community pharmacy services

Patient and GP focus groups discussed features which added value to obtaining extended services from community pharmacies. Faster access and convenience were the main features valued by patients, who also valued having sufficient time during consultations and a relaxed atmosphere for services such as blood pressure tests. For GPs, the main value derived from such services was freeing up their time to focus on more complex patients.

“They're [community pharmacies] more accessible and less formal” [F16, diabetes FG3]

“Some of these medication reviews for asthma and COPD as well, you know, it will free some of our appointment time for us to, you know, deal with some other things” [M43, GP FG8]
Discussion

This study used marketing theory to explore patients’, pharmacists’ and GPs’ views on utilisation and integration of community pharmacy services within the primary care pathway for patients with LTCs. Application of the 7Ps marketing mix theoretical framework has identified a number of key areas where developments could potentially increase patients’ (and GPs’) awareness of and demand for extended community pharmacy services, thus relieving some of the burden on general practice.

Findings from this study highlight important implications for policy and practice in relation to utilisation and integration of community pharmacy services within the primary care pathway for patients with LTCs. The potential for community pharmacies to moderate patient demands and reduce GP workload by providing services such as minor ailments and medication reviews has previously been recognised [27, 56-60]. However, this study has further highlighted strong support for community pharmacies to regularly provide routine check-ups/procedures (e.g. blood tests) for well managed LTCs.

Lack of access to medical records has been identified as a barrier to community pharmacists’ role expansion here, as in previous studies [61-65]. Having an integrated information system which enables community pharmacists’ read-write access to patient records may enhance communication with GPs and ensure safe provision of extended services. However, it would be important to consider indemnity and safeguarding against unauthorised access by non-healthcare staff. There have been some developments in this area in the UK with the implementation of the NHS Summary Care Record (SCR) in 2016 [66, 67]. However, the SCR provides read-only access and is limited to allergies, adverse reactions and medication history [68]. Another step towards integration could be to include community pharmacy services as part of care plans for patients with LTCs. Multidisciplinary care planning within primary care could help overcome common issues such as duplication of services [60, 69-71] and miscommunication between pharmacists and GPs [27, 64, 72, 73].

GPs’ willingness to collaborate with community pharmacists in the current study contrasted with previous findings [24, 58, 71, 74-76]. Nonetheless, this study strengthens the evidence for incentivising GPs to refer patients to community pharmacy services [19, 77, 78]. Remunerating joint working between community pharmacies and GP practices through the GP contractual framework could increase GP referrals to community pharmacies. Policymakers could also consider developing services with similar designs to influenza
vaccinations and inhaler techniques as these services focus on a specific intervention. The current findings suggest that developing services with clear service specifications which focus on a particular problem could enhance the consistency and quality of service provision and encourage GP referrals. Increasing the consistency of service commissioning within and between different localities and regions may further enhance their uptake as it remains unclear which services are available to patients.

This study highlights the potential to promote community pharmacy services through national campaigns as patients are generally unaware of what community pharmacies offer [22]. However, further research is needed to determine the most effective promotional strategies. The current findings also stress the importance of first-hand experience and word-of-mouth for enhancing the credibility of extended services to patients – this is something that any promotional strategies may wish to take account of. To ensure that extended services take equal priority to dispensing, reimbursement models should take account of the workload implications for community pharmacies. It is also important for pharmacies to ensure premises are suitable to deliver extended services and to fully utilise skill-mix by delegating more technical activities of medicines supply to pharmacy support staff [78].

To the authors’ knowledge, this is the first study to use marketing theory to understand how community pharmacy services could be better used and integrated within the primary care pathway for patients with LTCs. In addition, exploring the views of key stakeholders (patients, pharmacists, GPs) provided the breadth necessary to identify broad concepts influencing the use of community pharmacy services. Furthermore, this study was not limited to a specific service which widened the scope of the findings and implications. The application of the 7Ps marketing mix conceptualised key components influencing better use and integration of community pharmacy services within the primary care pathway. Hence, it led to the formation of a framework which can inform policy makers and future research in this area. Policymakers can use the ideas presented here from the 7Ps to develop strategies to enhance the development and integration of current/future community pharmacy services. Future research could apply this framework to evaluate the extent these 7P components could influence better use and integration of community pharmacy services within the primary care pathway.

A key limitation was the selection bias associated with the identification and recruitment of participants. Volunteers may have been more positive about the expanding role of community
pharmacy. Future research could explore the opinions of a wider range of patients, pharmacists and GPs to compare/contrast findings in this study. Another limitation was having one researcher code the data. Nonetheless, one co-author co-facilitated each group, so were familiar with discussions and emerging themes, which added rigor to the process of data analysis and interpretation was reviewed and agreed between all authors. Any potential bias that could occur due to two of the authors being pharmacists was mitigated due to both co-authors being very experienced health services researchers, and one being a social scientist.

Whilst this study focused on community pharmacy services in England, findings could be tested/further explored in other countries with similar community pharmacy advancements such as the United States, Canada, Australia and New Zealand. However, differences in organisational and administrative context will need to be considered. Moreover, this study focussed on patients with respiratory conditions or type 2 diabetes as exemplar LTCs, and further research will need to establish whether the findings are applicable to other LTCs.

Conclusion

This study used marketing theory to identify factors which could influence the utilisation and integration of community pharmacy services for patients with LTCs. In the main, these centred on appropriately distributing services within primary care, enhancing communication and incentivising joint working between community pharmacies and GP practices. Other factors involved enhancing the consistency and quality of community pharmacy services and strategically promoting community pharmacy services. Future research should evaluate the extent to which these factors could influence better use and integration of community pharmacy services within the primary care pathway and positively impact outcomes for patients with LTCs.

Acknowledgements

The authors would like to thank the patients, pharmacists and general practitioners who took part in this study. We would also like to thank everyone who helped with the recruitment of participants.
Ethics approval and consent to participate

This study received NHS Research Ethics Committee approval and NHS Health Research Authority approval (Ref: 17/NE/0371).

Written and verbal consent to participate in the study was obtained from each participant prior to conducting the focus groups.

Consent to publish

We confirm that we have obtained consent to publish from all focus participants to report anonymised individual patient data from the focus groups.

References


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Appendix 7a: Participant topic guides used for the focus groups

**Patient Interview Guide**

**Product (“service”)**

- Tell me what do you know about services a chemist can offer?

- Tell me what services do you think they should be offering for someone with a condition like yours?
  
  - **Prompts:** Are you aware chemists offer these services for your condition (offer a written list of services)? Would you use any of these services? Which ones?
  
  - **Probes:** How do you feel about pharmacists taking more responsibilities in the management of your conditions? Why?

- Tell me what do you know about the different services a GP practice can offer?

- Tell me what services do you think GPs should offer for someone with [state condition of particular FG]?

- Thinking about the chemist services we discussed earlier; would you prefer any of them to be performed by your GP instead? Which ones? Why? – Conversely, are there some that your GP currently offers, that you think could equally be offered by the chemist?

**Process**

- For those who visit chemists for services other than dispensing, could you describe how the process works? (I.e. how do you access services/how do you get recruited/how does follow-up work?)
  
  - **Prompts:** □ busyness □ appointments □ waiting times

- Now could you describe how the process works when using the GP practice for a consultation service in relation to your [condition]?
  
  - **Probe:** Is there anything you prefer about the way in which GP practices or chemists function?

- For those who **do not** visit chemists for services other than dispensing, could you explain how you would want the process to work if you were to visit a chemist for such services?
**Price (Value)**

- What makes you/would make you choose to use your chemist as opposed to GP practice?
  
  - **Prompts:** □ Contributing to their care □ Accessibility and convenience of the pharmacy □ Pharmacist availability □ Pharmacist approachability

- Thinking about some of the chemist services mentioned earlier in addition to the list provided, which do you feel are the most/least beneficial to you? Why?

- Would you be willing to pay for any of these services? If so, how much?
  
  - **Prompt:** How about GP practice services?

**People**

- Tell me who do you get advice from about your medications when visiting the chemist?
  
  - **Probes:** How do they speak to you? How do they present themselves?
  
  - **Prompts:** □ friendliness □ communication □ trustworthiness □ professionalism

- Do you know who the pharmacist is? Do you know the other pharmacy staff, and how they differ?
  
  - **Probes:** Does knowing who the pharmacist is make any difference to you? How so/why not?

- Are there any other healthcare professionals that you see for your [condition]?
  
  - **Probes:** Have they referred or recommend going to the pharmacy for something? If yes, what did they recommend? To what extent do they influence your decision to use chemists?
  
  - **Prompt:** What about GPs?

**Promotion**

- For those who visit chemists for services other than dispensing or are aware those services exist, can you remember when you first became aware that chemists provide these services for you?
  
  - **Probe:** Who told you?
  
  - **Prompts:** □ friends/family □ GPs □ other pharmacists

- Is there anything that influences/would influence you to try new chemist services?
  
  - **Prompts:** □ Posters □ leaflets □ social media. What do you think of them? Do they work?
- Is there anything else you think that can be done to advertise or promote chemist services?

**Physical evidence**

- Which do you think about the environment of the chemist as a place to provide healthcare services for patients with long-term conditions?
  
  - **Prompts:** privacy and confidentiality of: chemists □ consultation rooms □

**Place**

- Can you describe how you feel about the accessibility of your chemist?
  
  - **Prompts:** □ Opening hours □ Transport □ Parking □ Pharmacies: in a supermarket □ owned by large companies □ near GP surgeries

**Final Statement**

The purpose of this study is to collect your views regarding community pharmacy services (chemists) for patients with long-term conditions. Is there anything anyone would like to add that you believe was not covered during this discussion?
Pharmacist Interview Guide

Product (“service”)

- Tell me what do you think patients know about services a pharmacy can offer?

- Tell me are there any services that you think patients with asthma/ COPD/ diabetes want community pharmacies to offer them?

  - **Prompts:** Do you think they are aware pharmacies offer these services for their conditions (offer a written list of services)? Do you think they (would) use any of these services? Which ones?

  - **Probes:** How do you think they feel about pharmacists taking more responsibilities in the management of their conditions? Why?

- Thinking about the pharmacy services we discussed earlier; do you think patients prefer any of them to be performed by their GP instead? Which ones? Why? – Conversely, are there some that GP currently offers, that they think could equally be offered by the community pharmacy?

- Tell me what do you think **GPs** know about services a pharmacy can offer?

- Tell me are there any services that you think **GPs** want community pharmacies to offer someone with a condition like asthma/ COPD/ diabetes?

  - **Prompt:** Do you think they are aware pharmacies offer these services for these conditions (refer to written list of services again)?

  - **Probe:** How do you think they feel about pharmacists taking more responsibilities in the management of patients with conditions such as asthma/ COPD/ diabetes?

- Once again, referring to the pharmacy services we discussed earlier; do you think **GPs** prefer any of them to be performed by GP practices instead? Which ones? Why? – Conversely, are there some that GPs currently offer, that they think could equally be offered by the community pharmacy?

Process

- Have you previously encountered a patient with asthma/COPD/diabetes who used the pharmacy for a healthcare service other than dispensing? If so, could you describe how the process works? (I.e. how do patients access services/how do you recruit them/ how do you follow-up?)

  - **Prompts:** □ busyness □ appointments □ waiting times

- How do you think **GPs** feel about patients with these conditions using the pharmacy for services other than dispensing?
• **Probe:** What do you think they like/dislike about patients using the pharmacy for such services?

• **Prompts:** □ advice given to patients □ reducing workload □ conflicting with their roles

**Price (Value)**

- Explain to me why do you think patients (would) choose to use the pharmacy as opposed to GP practice?

• **Prompts:** □ Contributing to their care □ Accessibility and convenience of the pharmacy □ Pharmacist availability □ Pharmacist approachability

- Thinking about some of the pharmacy services mentioned earlier in addition to the list provided, which services do you think are most/least beneficial for patients with long-term conditions?

• **Probes:** Do you think patients/GPs would agree?

- In terms of **GPs**, do you think they would be willing to recommend any of these services to their patients? If so, which services do you think they are most willing to recommend? Which services are they least willing to recommend? Why?

- Would patients be willing to pay for any of these services? If so, how much?

• **Probe:** How about GP practice services?

**People**

- Tell me do you think pharmacists and pharmacy staff are in a position to be able to deliver these services well? Why/why not?

• **Prompts:** □ Workload □ Corporate pressure □ Motivation □ Staff □ Training □ Standards

- Describe how you think pharmacy staff could communicate effectively/more effectively with patients?

• **Prompts:** □ friendliness □ communication □ trustworthiness □ professionalism

- Do you know the GP(s) in your local area? How often do you communicate with them?

• **Probes:** How do they speak to you? How do they present themselves? How do you think you could communicate more effectively with them? Does knowing the GP make any difference to you/patient care? How so/why not?
**Promotion**

- If you are familiar with patients who visit pharmacies for services other than dispensing or are aware those services exist, how do you think they first became aware that pharmacies provide these services for them?
  
  • **Probe:** Who do you think tells them?
  
  • **Prompts:** □ friends/family □ GPs □ other pharmacists

- Is there anything that you think influences/would influence patients to try new pharmacy services?
  
  • **Prompts:** □ Posters □ leaflets □ social media. What do you think of them? Do they work?

- Is there anything that you think influences/would influence GPs to recommend new pharmacy services?

- Explain to me how do you think community pharmacy services should be promoted to patients?
  
  • **Probe:** Who do you think should be responsible for this?

**Physical evidence**

- Which do you think about the environment of the pharmacy as a place to provide healthcare services for patients with long-term conditions?

  • **Prompts:** privacy and confidentiality of: community pharmacies □ your consultation room □

**Place**

- Explain to me how you think patients feel about the accessibility of community pharmacies?

  • **Prompts:** □ Opening hours □ Transport □ Parking □ Pharmacies: in a supermarket □ owned by large companies □ near GP surgeries

- Do you think GPs share the same view? How so?

**Final Statement**

The purpose of this study is to collect your views regarding community pharmacy services for patients with long-term conditions. Is there anything anyone would like to add that you believe was not covered during this discussion?
GP Interview Guide

**Product (“service”)**

- Tell me what do you know about services a community pharmacy can offer?

- Tell me what services do you think they should be offering for someone with a condition like asthma/COPD/diabetes?

  - **Prompts:** Are you aware community pharmacies offer these services for these conditions (offer a written list of services)? Would you recommend patients to use any of these services? Which ones?

  - **Probes:** How do you feel about pharmacists taking more responsibilities in the management of patients with these conditions? Why?

- Thinking about the pharmacy services we discussed earlier; would you prefer any of them to be performed by GPs instead? Which ones? Why? – Conversely, are there some services that GPs currently offer, that you think could equally be offered by the community pharmacy?

**Process**

- How do you feel about patients using the pharmacy for services other than dispensing?
  
  - **Probe:** What do you like/not like about patients using the pharmacy for such a service?
  
  - **Prompts:** □ reducing your workload □ conflicting with your roles □ advice given

**Price (Value)**

- Thinking about some of the pharmacy services mentioned earlier in addition to the list provided, which do you feel are the most/least beneficial to your patients? Why?

- Do you think patients would be willing to pay for any of these services? If so, how much?
  
  - **Prompt:** How about GP practice services?

**People**

- Do you know the community pharmacist(s) in your local area? How often do you communicate with them?
  
  - **Probes:** How do they speak to you? How do they present themselves?
  
  - **Prompts:** □ friendliness □ communication □ trustworthiness □ professionalism

- Does knowing who the pharmacist is make any difference to you? How so/why not?
- Have you referred or recommend any of your patients to go to the pharmacy for something? If yes, what did you recommend? Did they take the recommendation?

**Promotion**

- For those who have recommended pharmacy services other than dispensing or are aware those services exist, can you remember when you first became aware that pharmacies provide these services?
  - **Probe:** Who told you?
  - **Prompts:** □ friends/family □ other GPs □ pharmacists

- Is there anything that influences/would influence you to recommend new pharmacy services to your patients?
  - **Prompts:** □ Posters □ leaflets □ social media. What do you think of them? Do they work?

- Explain to me how do you think community pharmacy services should be promoted to patients?
  - **Probe:** Who should be responsible for this?

**Physical evidence**

- Which do you think about the environment of the pharmacy as a place to provide healthcare services for patients with long-term conditions?
  - **Prompts:** privacy and confidentiality of: community pharmacies □ consultation rooms □

**Place**

- Explain to me how you think patients feel about the accessibility of community pharmacies?
  - **Prompts:** □ Opening hours □ Transport □ Parking □ Pharmacies: in a supermarket □ owned by large companies □ near GP surgeries

**Final Statement**

The purpose of this study is to collect your views regarding community pharmacy services for patients with long-term conditions. Is there **anything anyone would like to add** that you believe was not covered during this discussion?
Chapter Eight - Study Three

Chapter Guide:

This chapter presents the manuscript for Study Three which is under review with BMJ Open.

<table>
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<tr>
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<td>Submission Status</td>
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Note: The formatting and layout are consistent with the requirements for the journal. Therefore, references will be placed at the end of this chapter rather than at the end of the thesis. Also, the full regression tables (Appendix 12.0) and themes from the comments section (Appendix 13.0) are provided in the thesis appendices.
Applying a whole systems lens to the GP crisis: A cross-sectional survey looking at patients with long-term respiratory conditions’ use of community pharmacy services

Ali M.K. Hindi* (BPharm, MSc)
PhD student
Ali.hindi@manchester.ac.uk

Ellen I. Schafheutle (PhD, MRes, MSc, FRPharmS, FFRPS)
Professor of Pharmacy Policy and Practice
Ellen.schafheutle@manchester.ac.uk

Sally Jacobs (BSc, PhD)
Lecturer
Sally.jacobs@manchester.ac.uk

*Author for correspondence

Full postal address for all:
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry; School of Health Sciences; Faculty of Biology, Medicine and Health, The University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom
Abstract

Objectives: Use marketing theory, to conceptualise how community pharmacy services could be better used and integrated within the primary care pathway.

Design: Cross-sectional postal survey design applying the “7Ps marketing mix” (“product”, “price”, “place”, “promotion”, “people”, “process”, “physical evidence”).


Participants: Patients with asthma or chronic obstructive pulmonary disease registered at two GP practices.

Results: The response rate was 29% (289/1003). Most respondents preferred to use GP practices for invasive/diagnostic services (“product”) whilst preferring using community pharmacy for medicines supply and minor ailments (“place”). Stronger preferences for using GP practices over community pharmacy were significantly associated with gender (male > female), age group (≥ 65 years) and healthcare services previously accessed at the pharmacy. Respondents perceived they would be more likely to use community pharmacy services if pharmacists offered them enough time to discuss any concerns (73.3%) (“price”), community pharmacies had private/clean consultation rooms (70-73%) (“physical evidence”) and pharmacy staff had strong interpersonal skills (68-70%) (“people”). Respondents were divided on likelihood to use community pharmacy services if pharmacists could access their whole medical record but wanted pharmacists to add information about their visit (59.6%) (“process”). Respondents were less likely to use community pharmacy services if other members of pharmacy staff could access their whole medical record (55.7%) (“people”). The two main ways to encourage respondents to use community pharmacy for healthcare services were if they were offered services by pharmacy staff or recommended/referred to services by their GP (44%) (“promotion”).

Conclusions: Using the 7Ps marketing mix highlighted that community pharmacies with staff with strong interpersonal skills, good quality consultation rooms and integrated information systems could positively influence patients to use community pharmacies for management of long-term conditions. There are opportunities for community pharmacy to alleviate the GP crisis but a whole system approach will be essential.
Article Summary

Strengths

- This study is the first to apply marketing theory to explore how to improve patient uptake of community pharmacy services with a view to better integrate community pharmacy services into the patient pathway and reduce GP workload pressures.

- This study was informed by, and adds to, previous findings from an earlier study examining awareness, uptake and integration of community pharmacy services within primary care.

- Most studies have generally explored patient perceptions or preferences for specific community pharmacy services. Instead, patients were asked to choose preferences for long-term conditions services at GP practices vs. community pharmacy, and factors which influence these preferences.

Limitations

- This survey was confined to one region and therefore may not be wholly representative of patients in England.

- The low survey response rate increased the potential of non-response bias.
Introduction

Increasing patient demand has led to a substantial increase in both the volume and complexity of general practitioner (GP) workload.\(^1\) Furthermore, fewer GPs work full-time and many retire at an earlier age.\(^2\) In England, long-term conditions (LTCs) make up 50% of all GP appointments and 70% of acute and primary care expenditure.\(^3\) The rise in patients with LTCs poses a challenge for GP practice to maintain efficient and high quality services.\(^4\) The number of GPs who report working outside their regular hours has been steadily increasing and patients are finding it more difficult to obtain GP appointments.\(^5\)–\(^7\) In light of this crisis, policy initiatives have focused on developing new strategies to meet the needs of patients with LTCs and reduce GP workload pressures.\(^8\)–\(^10\)

The potential role of community pharmacies as accessible primary care venues\(^9\) which could meet some of the needs for patients with LTCs has been recognised by policymakers in the United Kingdom (UK).\(^11\) In 2005/06, the NHS introduced community pharmacy contracts which reimburse community pharmacies for clinical, medicines-related and public health services, in addition to dispensing.\(^12\) However, patient awareness and use of these services has been low, and community pharmacy services are commonly not integrated with other primary care services.\(^13\),\(^14\)

In order to provide evidence-based community pharmacy services that integrate with primary care and thus achieve the potential of shifting demand away from GP practices and optimising patient care, it is important to understand the reasons patients with LTCs might use community pharmacy services over those offered by their GP practice. This study aimed to use marketing theory to conceptualise how community pharmacy services could be better used and integrated within the primary care pathway.\(^15\)

Methods

Participants

Adult patients with asthma/chronic obstructive pulmonary disease (COPD) were chosen as they are among the most common users of primary care consultations\(^16\) and a range of relevant community pharmacy services already exist (e.g. inhaler techniques, respiratory Medicines Use Reviews [MURs], smoking cessation, influenza vaccinations).\(^17\) Participants
were eligible if aged at least 18 years and able to provide consent and complete the questionnaire.

Having approached eight practices in Greater Manchester, two agreed to recruit. Practice managers identified 1003 eligible patients through patient records. Assuming a response rate of 25% (n=250), this sample size had 80% power to detect a correlation of 0.18 between any 2 derived continuous variables, based on a 5% level of statistical significance.

**Study procedure**

Practice managers were provided with recruitment packs (containing invitation letter, participant information sheet, questionnaire, reply paid envelope, addressed to research team), which they posted between January-February 2019. Unique ID numbers allowed identification of non-respondents; one postal reminder was sent after three weeks.

**Questionnaire development**

The 7Ps marketing mix model (product; price; place; promotion; people; process; physical evidence) was used to frame this study, informed by a previous qualitative study and existing literature. The questionnaire involved closed questions and Likert type agreement statements on preferences for using services at the community pharmacy or GP surgery, and features influencing these preferences. The questionnaire was piloted using cognitive interviews with a convenience sample of 12 people with LTCs (six with a respiratory condition) and four who used community pharmacies for collecting/purchasing medications.

**Analyses**

Data on respondents’ characteristics: preferences for using services at the community pharmacy or GP surgery; features influencing likelihood to use community pharmacy services; and views on promotional strategies are reported descriptively. Responses to the frequency of community pharmacy use («/> once per month), variety of pharmacies used (same/different pharmacy), age group (<65/ ≥65 years of age), and type of services used by respondents (only medication supply/other services), were dichotomized.
Two sets of regression analysis were conducted. The first explored whether these respondents’ characteristics were associated with ‘service preference for community pharmacy over GP services’ (a score derived from summing the Likert responses to items in Table 8-3, with higher scores indicating a greater preference for community pharmacy; three items were removed as they were applicable to less than 40% of the sample (α=0.839)). The second explored whether respondent characteristics were associated with ‘likelihood of using community pharmacy services’ (binary response to the statement “I would be more likely to use the pharmacy than I currently do if all of the features [Table 8-5] ticked as “more/much more likely” were all in place”).

For purposeful selection of covariates in the regression models, univariable analysis examined potential respondent characteristics associated with service preferences (independent sample t-tests) and likelihood of using community pharmacy services (Pearson’s chi-squared test). A conservative p-value of 0.2 was used to indicate a significant association. Independent variables which met this criterion were included in a multivariable regression model to examine if their association remained when controlling for other factors. Variables were retained in the final model if significance at p<0.05 was achieved.

Quantitative analysis was conducted using SPSS version 22. Free-text responses were analysed based on commonly reoccurring themes.

**Patient and Public Involvement**

This study is part of a larger PhD project. To ensure the project was grounded in patient priorities, members of the public were consulted about study design through The Patient and Public Advisory Board (PPAB) of The University of Manchester Division of Pharmacy and Optometry. Eight members of the public who took part in the PPAB were living with one or more LTCs and had experience using primary care services. Members were provided a lay summary of the PhD project and consulted on the importance of the research topic. In addition, PPAB members were consulted on the participant information sheet and recruitment strategies for the focus group study which informed this survey study.
Results

Of 1003 mailed questionnaires, 289 were returned (29% response rate). Most respondents were female (63%), visited the pharmacy once a month (61%) and used the same pharmacy most/all of the time (85%). Most respondents had asthma (58%), 35% had COPD and 6.2% had both asthma and COPD or other breathing problems (1.5%). The majority of respondents was white (90.2%), and most (73.4%) were 55 years and older. Respondent characteristics are shown in Table 8-1.
### Table 8-1: Respondent characteristics (n=289)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group (years):</strong></td>
<td></td>
</tr>
<tr>
<td>18-24 years old</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>25-34 years old</td>
<td>14 (4.9)</td>
</tr>
<tr>
<td>35-44 years old</td>
<td>19 (6.6)</td>
</tr>
<tr>
<td>45-54 years old</td>
<td>36 (12.6)</td>
</tr>
<tr>
<td>55-64 years old</td>
<td>61 (21.3)</td>
</tr>
<tr>
<td>65-74 years old</td>
<td>83 (29.0)</td>
</tr>
<tr>
<td>75+ years old</td>
<td>66 (23.1)</td>
</tr>
<tr>
<td><strong>Ethnicity:</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>258 (90.2)</td>
</tr>
<tr>
<td>Asian</td>
<td>12 (4.2)</td>
</tr>
<tr>
<td>Black</td>
<td>6 (2.1)</td>
</tr>
<tr>
<td>Mixed/multiple ethnic groups</td>
<td>6 (2.1)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (1.4)</td>
</tr>
<tr>
<td><strong>Frequency of pharmacy use:</strong></td>
<td></td>
</tr>
<tr>
<td>Less than once a month</td>
<td>25 (8.7)</td>
</tr>
<tr>
<td>Once a month</td>
<td>175 (61.0)</td>
</tr>
<tr>
<td>Once every 2-3 months</td>
<td>46 (16.0)</td>
</tr>
<tr>
<td>Once every 6-12 months</td>
<td>16 (5.6)</td>
</tr>
<tr>
<td>Less than once a year</td>
<td>5 (1.7)</td>
</tr>
<tr>
<td>Never (delivered/someone else collects medications)</td>
<td>20 (7.0)</td>
</tr>
<tr>
<td><strong>Range of pharmacies used:</strong></td>
<td></td>
</tr>
<tr>
<td>Visit the same pharmacy all of the time</td>
<td>186 (66)</td>
</tr>
<tr>
<td>Visit a variety of different pharmacies but visit one most often</td>
<td>54 (19.1)</td>
</tr>
<tr>
<td>Visit a variety of different pharmacies and none more frequently than any other</td>
<td>19 (6.7)</td>
</tr>
<tr>
<td>Not applicable</td>
<td>23 (8.2)</td>
</tr>
</tbody>
</table>

*Respondent characteristics had missing/incomplete data. Percentages are based on number of item responses.*
Table 8-2 lists community pharmacy services used by respondents. The most commonly used services were traditional medicines supply, purchasing medicines and advice on minor ailments.

**Table 8-2:** Community pharmacy services used by respondents

<table>
<thead>
<tr>
<th>Type of community pharmacy service(s) used</th>
<th>n (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving medication that has been prescribed</td>
<td>271 (93.8)</td>
</tr>
<tr>
<td>Buying medicines</td>
<td>122 (42.2)</td>
</tr>
<tr>
<td>Advice on minor conditions</td>
<td>97 (33.6)</td>
</tr>
<tr>
<td>Medication review consultation</td>
<td>61 (21.1)</td>
</tr>
<tr>
<td>Influenza vaccination</td>
<td>56 (19.4)</td>
</tr>
<tr>
<td>Assistance with medication use</td>
<td>46 (15.9)</td>
</tr>
<tr>
<td>Inhaler technique</td>
<td>28 (9.7)</td>
</tr>
<tr>
<td>Help when breathing condition gets worse (e.g. breathlessness, coughing)</td>
<td>12 (4.2)</td>
</tr>
<tr>
<td>Blood pressure checks</td>
<td>11 (3.8)</td>
</tr>
<tr>
<td>Regular check-ups for respiratory condition (e.g. spirometry tests)</td>
<td>11 (3.8)</td>
</tr>
<tr>
<td>Finger prick blood tests (e.g. for checking cholesterol)</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>Advice on vaccinations for travelling abroad</td>
<td>6 (2.1)</td>
</tr>
<tr>
<td>Weight management</td>
<td>2 (0.7)</td>
</tr>
<tr>
<td>Smoking cessation</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>None of these services</td>
<td>7 (2.4)</td>
</tr>
<tr>
<td>Other service</td>
<td>4 (1.4)</td>
</tr>
</tbody>
</table>

*Total for the type of community pharmacy services accessed by respondents exceeds 100% as respondents were asked to indicate all services which they used.

**Preferences for utilising different services at community pharmacy compared to GP practice (“product” & “place”)**

Table 8-3 shows preferences for utilising different services at community pharmacy compared to GP practice. Most respondents’ preferred using GP practice for more invasive/diagnostic services (53-89%). Community pharmacy was preferred for purchasing/receiving medicines and minor ailments (46%-72%). Just under half of respondents either preferred GP practices or had no preference for receiving advice/assistance with medications usage and public health services.
Table 8-3: Respondents’ preferences for utilising services at community pharmacy compared to GP practice*

<table>
<thead>
<tr>
<th>Service: (7Ps: “product” &amp; “place”)</th>
<th>Strongly/slightly prefer GP practice</th>
<th>Strongly/slightly prefer community pharmacy</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prefer GP Practice</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help when symptoms for breathing condition get worse (e.g. breathlessness, coughing)</td>
<td>236 (89.1)</td>
<td>7 (2.6)</td>
<td>22 (8.3)</td>
</tr>
<tr>
<td>Regular check-ups to see how well breathing condition is progressing (e.g. spirometry tests)</td>
<td>215 (81.7)</td>
<td>10 (3.8)</td>
<td>38 (14.4)</td>
</tr>
<tr>
<td>Consultation to review all the medications used</td>
<td>163 (65.2)</td>
<td>37 (14.8)</td>
<td>50 (20.0)</td>
</tr>
<tr>
<td>Influenza vaccination</td>
<td>145 (61.2)</td>
<td>27 (11.4)</td>
<td>65 (27.4)</td>
</tr>
<tr>
<td>Blood pressure checks</td>
<td>150 (60.2)</td>
<td>22 (8.8)</td>
<td>77 (30.9)</td>
</tr>
<tr>
<td>Finger prick blood tests (e.g. for checking cholesterol)</td>
<td>112 (53.1)</td>
<td>21 (10.0)</td>
<td>78 (37.0)</td>
</tr>
<tr>
<td><strong>No Preference</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advice on vaccinations for travelling abroad</td>
<td>75 (46.6)</td>
<td>18 (11.2)</td>
<td>68 (42.2)</td>
</tr>
<tr>
<td>Help with Inhaler technique</td>
<td>97 (43.7)</td>
<td>40 (18.0)</td>
<td>85 (38.3)</td>
</tr>
<tr>
<td>Help with losing weight</td>
<td>36 (39.1)</td>
<td>15 (16.3)</td>
<td>41 (44.6)</td>
</tr>
<tr>
<td>Assistance with how to take medications</td>
<td>88 (37.0)</td>
<td>61 (25.6)</td>
<td>89 (37.4)</td>
</tr>
<tr>
<td>Help with stopping smoking</td>
<td>19 (34.5)</td>
<td>13 (23.6)</td>
<td>23 (41.8)</td>
</tr>
<tr>
<td><strong>Prefer Community pharmacy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying medicines</td>
<td>15 (6.8)</td>
<td><strong>159 (71.6)</strong></td>
<td>48 (21.6)</td>
</tr>
<tr>
<td>Getting advice on minor conditions (e.g. cough, cold)</td>
<td>40 (16.8)</td>
<td><strong>134 (56.3)</strong></td>
<td>64 (26.9)</td>
</tr>
<tr>
<td>Obtaining medication that has been prescribed</td>
<td>83 (30.2)</td>
<td><strong>125 (45.5)</strong></td>
<td>67 (24.4)</td>
</tr>
</tbody>
</table>

* One of the response options was “not applicable” as some of the services may not apply to all respondents. Services which were not applicable to respondents were counted as missing data. Percentages are based on the actual number of individual responses to services.
The mean score (±SD) for respondents’ overall preference for using services at community pharmacy over GP practice from was 28.45±8.374 (range 11, 55). In the final regression model, age group (<65 years), gender (female), and already using healthcare services other than medication supply were significantly associated with a higher preference for receiving services at community pharmacy (p-value <0.05) (Table 8-4).

**Table 8-4:** Significant associations between respondent characteristics from regression models

<table>
<thead>
<tr>
<th>Respondent characteristics</th>
<th>Preference for GP practice or community pharmacy</th>
<th>Likelihood to use community pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β coefficient (95% CI)</td>
<td>P value</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (reference)</td>
<td></td>
<td>0.012</td>
</tr>
<tr>
<td>Female</td>
<td>0.16 (0.59-4.82)</td>
<td></td>
</tr>
<tr>
<td>Service usage at pharmacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only use pharmacy for medication supply (reference)</td>
<td>&lt;0.001</td>
<td>0.009</td>
</tr>
<tr>
<td>Use pharmacy for other services</td>
<td>0.25 (2.21-6.40)</td>
<td>1.86 (1.19-3.22)</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 65 years of age (reference)</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>&lt; 65 years of age</td>
<td>0.17 (0.83-4.93)</td>
<td></td>
</tr>
</tbody>
</table>
Pharmacy features influencing respondents’ likelihood of using community pharmacy services (“price”, “physical evidence”, “place”, “people”, “process”)

Features influencing respondents’ likelihood of using community pharmacy services are provided in Table 8-5. The feature which respondents perceived would make them most likely to use community pharmacy services was if the pharmacist offered them enough time to discuss any concerns (73.3%; ‘price’). ‘Price’ – defined as added value from obtaining services from community pharmacies – was also important in patients being offered a follow-up appointment with the pharmacist (63.0%). ‘Physical evidence’ was important in terms of community pharmacies having clean (72.9%) and private (69.6%) consultation rooms with enough space (58.5%).

In relation to ‘people’, the most important feature encouraging patients to use community pharmacies was if the pharmacist (69.9%) and other pharmacy staff (67.6%) were friendly and approachable. Respondents were divided on likelihood (more likely/no difference/less likely) of using community pharmacy services if pharmacists could access patients’ whole medical record but 55.7% were less likely to use community pharmacies if other pharmacy staff had access. In terms of “process”, 60% of respondents perceived they would be more likely to use community pharmacy services if the pharmacist could add information to their medical record.

Almost half of the respondents indicated they would be more likely to use the pharmacy than they currently do if all of the features they wanted were in place (47.7%). The final regression model demonstrated that respondents who used community pharmacy for healthcare services other than purchasing/collecting medications were significantly more likely to use community pharmacy if the features they wanted were in place (Table 8-4).
Table 8-5: Features influencing respondents’ likelihood to use community pharmacy services*

<table>
<thead>
<tr>
<th>7Ps</th>
<th>Likelihood to use health services at the community pharmacy:</th>
<th>More likely</th>
<th>No difference</th>
<th>Less likely</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>If the pharmacist offers you enough time to ask questions or discuss any concerns</td>
<td>189 (73.3)</td>
<td>54 (20.9)</td>
<td>15 (5.8)</td>
</tr>
<tr>
<td></td>
<td>If you were offered a follow-up appointment with the pharmacist</td>
<td>160 (63.0)</td>
<td>76 (29.9)</td>
<td>18 (7.1)</td>
</tr>
<tr>
<td><strong>People</strong></td>
<td>If the pharmacist is friendly and approachable</td>
<td>181 (69.9)</td>
<td>62 (23.9)</td>
<td>16 (6.2)</td>
</tr>
<tr>
<td></td>
<td>If the other pharmacy staff are friendly and approachable</td>
<td>175 (67.6)</td>
<td>66 (25.5)</td>
<td>18 (6.9)</td>
</tr>
<tr>
<td></td>
<td>If you see the same pharmacist each time you visit the pharmacy</td>
<td>144 (56.3)</td>
<td>100 (39.1)</td>
<td>12 (4.7)</td>
</tr>
<tr>
<td></td>
<td>If pharmacists can see only important information on your medical record (e.g. current medications, allergies, name/address)</td>
<td>134 (52.5)</td>
<td>96 (37.6)</td>
<td>25 (9.8)</td>
</tr>
<tr>
<td></td>
<td>If you are known to the other staff at the pharmacy</td>
<td>132 (51.2)</td>
<td>105 (40.7)</td>
<td>21 (8.1)</td>
</tr>
<tr>
<td></td>
<td>If other members of pharmacy staff can see only important information on your medical record (e.g. current medication, allergies, name/address)</td>
<td>94 (37.0)</td>
<td>81 (31.9)</td>
<td>79 (31.1)</td>
</tr>
<tr>
<td></td>
<td>If pharmacists can see your whole medical record</td>
<td>92 (36.2)</td>
<td>97 (38.2)</td>
<td>65 (25.6)</td>
</tr>
<tr>
<td></td>
<td>If other members of pharmacy staff can see your whole medical record</td>
<td>35 (13.8)</td>
<td>77 (30.4)</td>
<td>141 (55.7)</td>
</tr>
<tr>
<td><strong>Physical evidence</strong></td>
<td>If pharmacy services are provided to you in clean consultation rooms</td>
<td>186 (72.9)</td>
<td>55 (21.6)</td>
<td>14 (5.5)</td>
</tr>
<tr>
<td></td>
<td>If pharmacy services are provided to you in private consultation rooms that cannot be overheard</td>
<td>179 (69.6)</td>
<td>63 (24.5)</td>
<td>15 (5.8)</td>
</tr>
<tr>
<td></td>
<td>If pharmacy services are provided to you in consultation rooms with enough space</td>
<td>148 (58.5)</td>
<td>90 (35.6)</td>
<td>15 (5.9)</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>If pharmacists can add information about your visit to the pharmacy to your medical record so the GP knows</td>
<td>152 (59.6)</td>
<td>79 (31.0)</td>
<td>24 (9.4)</td>
</tr>
<tr>
<td></td>
<td>If you could book an appointment for pharmacy services in advance</td>
<td>114 (44.9)</td>
<td>95 (37.4)</td>
<td>45 (17.7)</td>
</tr>
<tr>
<td><strong>Place</strong></td>
<td>If you can get to the pharmacy easily</td>
<td>135 (53.1)</td>
<td>90 (35.4)</td>
<td>29 (11.4)</td>
</tr>
<tr>
<td></td>
<td>If the pharmacy is located next to your GP surgery</td>
<td>120 (45.3)</td>
<td>100 (37.7)</td>
<td>45 (17.0)</td>
</tr>
<tr>
<td></td>
<td>If the pharmacy is located in the same building as your GP surgery</td>
<td>103 (41.0)</td>
<td>117 (46.6)</td>
<td>31 (12.4)</td>
</tr>
</tbody>
</table>

I would be more likely to use the pharmacy than I currently do if all of the features ticked as “more/much more likely” were all in place: 127 (47.7)

It would not make a difference to my current use if all of the features ticked as “more/much more likely” were all in place: 139 (52.3)

*Respondents had missing/incomplete data. Percentages are based on number of item responses.
Sixty-seven respondents provided free-text comments, which offered insights into their reasons for not using/preferring community pharmacy services for LTCs. Respondents mentioned community pharmacies having limited size, long waiting times, pharmacy staff’s limited interpersonal skills and pharmacists’ busyness with dispensing duties.

“Promotion” of community pharmacy services

Respondents’ views on promotional methods which could encourage their use of community pharmacy services are provided in Figure 8-1. Being offered services by pharmacy staff when visiting the community pharmacy (44.3%) or their GP recommending/referring to services (43.6%) were the most influential promotional methods.

![Figure 8-1: Promotional methods which could encourage respondents to use community pharmacy services (7Ps: “Promotion”)](image-url)
Discussion

Principal findings

This study was undertaken within the policy context of the burden of LTCs, GP shortages and workloads, and the potential for community pharmacies to contribute to the care of patients with LTCs. Considering the accessibility yet low patient awareness of services available in community pharmacy, this study used marketing theory to identify factors which influenced patients’ health seeking behaviour. This survey of 289 patients with long-term respiratory conditions identified service characteristics which could encourage patients to use community pharmacy instead of GP practices, such as pharmacy staffs’ interpersonal skills; community pharmacies having private/clean consultation rooms and integrated information systems with GP practices. Patients considered GP referral or recommendation to use pharmacies as the most effective forms of service promotion.

Strength and weaknesses of this study

The novel approach of using the 7Ps marketing mix model offers valuable insights into patients’ preferences for LTC services at GP practices vs. community pharmacy, and factors which influence these preferences. This study is limited because it only involved patients from two GP practices in one geographical region. The low response rate of 29% increased the risk of non-response bias; however, this response rate is to similar GP patient surveys, and the sample size was statistically powered.

Comparison with existing literature

Findings in this study confirm that patients’ preference for using GP-led LTC services remain unchanged. However, the application of marketing theory has helped to identify key factors which could shift patients into community pharmacy and reduce GPs workload. Our data corroborate that GP endorsement is fundamental to patients’ willingness to use community pharmacy services. Moreover, regression analysis strengthens previous findings which suggest that patients who have experienced non-traditional pharmacy services are more receptive to using them despite initial reluctance.
Previous studies suggest that lack of privacy in community pharmacy settings negatively impacts patient/public perceptions. Our study builds on these findings by demonstrating the relative importance of consultation room features (size, privacy etc.) on patients’ likelihood to use LTC services at community pharmacy. To the authors’ knowledge, this is the first study to quantitatively assess patients’ views on the importance of pharmacists having read-write access to their medical records. Some ambivalence was shown by patients as they were uncertain about pharmacists accessing their whole medical records but wanted them to add information.

**Implications for policymakers**

Tackling the GP crisis requires a “whole systems approach” rather than silo working to avoid misaligned incentives, duplicated work and shifting existing problems in general practice into another overstretched sector such as community pharmacy. Interpersonal skills such as community pharmacists being approachable and offering patients enough time to discuss their concerns could encourage patients with LTCs to use community pharmacies for healthcare services. However, community pharmacists have limited opportunity for face-to-face interactions with patients due to high dispensing workloads, limited staff and restrictive reimbursement models. Policymakers should therefore reassess the current funding model for community pharmacy in the context of the need to transfer some routine/monitoring services out of general practice.

Medication review consultations at community pharmacy are generally provided ad-hoc with inadequate privacy therefore making them less desirable/beneficial to patients who already receive GP practice reviews. With joined-up and coordinated healthcare services underpinning the NHS long-term plan, it is essential to have integrated information systems between community pharmacies and GP practices to improve the quality and safety of patient care by enhancing communication and reducing duplication.

This study also suggests that publicising community pharmacy services has limited influence on patients if they are not endorsed by GPs and pharmacists are not proactively offering them. Policymakers should be aware it is unlikely pharmacists will prioritise healthcare services over dispensing or that GPs will refer patients to community pharmacies under current reimbursement models. Thus, incentivising joint-working between community
pharmacists and GPs should be a key priority for policymakers seeking to lessen burden on GP practices by enhancing patient demand and uptake of community pharmacy services.\textsuperscript{35, 36} 

**Unanswered questions and future research**

This study conceptualised how community pharmacy services could be better used and integrated within the primary care pathway for patients with LTCs. After first confirming findings through a large national study, it would be necessary to test the feasibility of implementing new community pharmacy models of care which offer medicines-related and/or public health services that integrate with GP practice through agreed referral pathways, feedback and follow-up processes.

**Acknowledgments:** The authors would like to thank the patients who took part in the study and the GP practice managers who helped with recruitment. The authors would also like to thank Dr Kelly Howells for her advice on recruitment and Dr Mark Hann for his advice on statistical analysis.

**Ethics approval:** This study received NHS Research Ethics Committee approval and NHS Health Research Authority approval (Ref: 18/EM/0372).

**References**


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Chapter Nine - Discussion

Chapter Guide: This chapter discusses the key findings from the overall programme of research and summarises the strength and limitations of each study. Finally, this chapter outlines the implications of findings for policy and suggests areas for further research.

The overall aim of this programme of research was to explore and identify ways to improve awareness, demand and use of community pharmacy services which may benefit patients with LTCs. This aim was achieved by conducting a series of three studies. To provide up to date evidence, the first study investigated patient/public, pharmacist and GP perceptions of community pharmacy services by systematically reviewing the literature. The second study used marketing theory (7Ps marketing mix) to explore how community pharmacy services may be better used and integrated within the primary care pathway for people with LTCs. Study Two used a qualitative approach and focus groups with community pharmacists, GPs, and patients. Informed by the second study, the third study used the 7Ps marketing mix to survey patient’s views of which factors could influence people with LTCs to make better use of community pharmacy services and reduce GP workload pressures. Figure 9-1 provides an overview of the three studies that make up this PhD thesis, using the titles of the four papers which have been derived from them.
Study One Part 1: Patient and public perspectives of community pharmacies in the United Kingdom: A systematic review

Study One Part 2: Solidarity or Dissonance? A Systematic Review of Pharmacist and GP Views on Community Pharmacy Services in the United Kingdom

Study Two: Community pharmacy integration within the primary care pathway for people with long-term conditions: a focus group study of patients’, pharmacists’ and GPs’ experiences and expectations

Study Three: Applying a whole systems lens to the GP crisis: A cross-sectional survey looking at patients with long-term respiratory conditions’ use of community pharmacy services

The awareness, demand and use of community pharmacy services for people with long-term conditions

Figure 9-1: Overview of the three studies included in this programme of research
9.1 Summary of Findings

This section presents a summary of findings from each study and how they contributed to meeting the overall aim of the thesis. To achieve the overall aim, there were two overarching objectives:

1. To explore patients’, pharmacists’ and GPs’ perspectives of current community pharmacy services and extended pharmacist roles.
2. To identify how community pharmacy services may be better used and integrated within the primary care pathway for people with LTCs.

Study One focused on achieving the first objective listed above. Studies Two and Three focused on meeting the second objective.

9.1.1 Literature Review: Summary of Findings

By systematically reviewing published evidence on community pharmacies in the UK, Study One highlighted that patients, pharmacists and GPs perceive extended community pharmacy services to provide benefits such as: increased patient access and choice; improved clinical outcomes and freeing up GPs’ time for more complex cases. However, patient and GP awareness of community pharmacy services beyond traditional medicines supply was low. Despite many studies finding low patient/public awareness and uptake of community pharmacy services, research exploring strategies that could effectively promote community pharmacy services was scarce.

Patient and public perceptions of GPs as the authoritative figures in primary care influenced their perceptions of community pharmacy services. It was evident from the literature that patients preferred to access services provided by GPs, and sought GPs’ approval/recommendation to use community pharmacy services. However, collaboration and existing relationships between GPs and community pharmacists were found to be poor despite the introduction of extended pharmacy services.

Stakeholders (i.e. patients, pharmacists and GPs) perceived that organisational barriers to patient uptake of extended community pharmacy services were: lack of management support; lack of privacy and high dispensing workloads. Other barriers identified were lack of remuneration, poor pharmacist-GP collaboration and extended
services not being publicised. On the other hand, access/convenience of community pharmacies and positive existing relationships between pharmacists and patients/GPs were perceived as facilitators for uptake of extended community pharmacy services.

Overall, the reviewed literature confirmed that awareness, demand and uptake of community pharmacy services were low and that integration within primary care remained poor. However, there were important gaps in the literature which informed Study Two:

1. There was a paucity of research exploring GPs’ views of community pharmacy services and the influence that GPs have on patients accessing community pharmacy services.
2. The majority of the published evidence focused on specific community pharmacy services rather than more general views on the use of community pharmacies, which limited the scope of the findings and implications.
3. The reviewed literature did not explore how to address issues pertaining to low awareness and uptake of beneficial extended community pharmacy services with a view to better integrate community pharmacy services into the patient pathway and strengthen pharmacist-GP collaboration.

9.1.2 Study Two and Study Three: Integrated Summary of Findings

This section provides an integrated summary of findings drawn from Studies Two and Three. Study Two was qualitative and involved focus groups with all three main stakeholder groups: patients, community pharmacists and GPs. Study Three was informed by the findings of Study Two and involved a survey of patients’ views and experiences. Both studies were framed using marketing theory and the key findings are summarised under the “7Ps marketing mix” model: product, process, people, place, physical evidence, promotion, and price.
Product – Stakeholders’ expectations and perceptions of community pharmacy services within the patient primary care pathway

The findings from both the qualitative and quantitative studies showed that all participants expected community pharmacies to provide what is seen as their traditional services: supply of medication and advice on minor conditions. GP practices on the other hand, were viewed by all participants as more suitable than community pharmacies for clinical interventions such as diagnosis of symptoms and physical examinations. The majority of patients in the survey also preferred using GP practices over community pharmacies for medication reviews and routine check-ups/procedures (blood tests, for example). However, there was a shared agreement between all focus group participants that patients with LTCs who have difficulties obtaining GP appointments would benefit from community pharmacies regularly providing routine check-ups/procedures and medication reviews. In the quantitative study, younger age (<65 years), gender (female), and previous use of healthcare services other than medication supply were significantly associated with a higher preference for accessing services at a community pharmacy.

Patients and GPs in the focus groups were unaware of the range of public health services offered by community pharmacies, and patients described rarely using them. In the quantitative study also, public health services such as weight management, smoking cessation and receiving advice on travel vaccinations, were amongst the least utilised community pharmacy services. However, most survey respondents who required travel advice on vaccinations, weight loss or smoking cessation services did not have a preference for using these services at either community pharmacy or GP practice.
Process – Stakeholders’ expectations and experiences regarding utilisation and delivery of community pharmacy services

The way that the different types of services were talked about during the focus groups led to the conclusion/interpretation that services with a clear specification were preferred by patients and GPs. Pharmacists and GPs proposed developing community pharmacy services that have clear specifications and focus on a single, specific intervention (e.g. influenza vaccines, inhaler techniques) to enhance consistency in delivery and quality of services. Similarly, patients in the focus groups expressed preferences for services which focus on a single, specific intervention. Pharmacists and GPs perceived dispensing workload, management pressures to perform services and lack of staff as further barriers to consistent delivery/quality of extended services. In the free-text comments of the patient survey, respondents reported long waiting times and pharmacy staff being busy with dispensing duties as barriers to using community pharmacies for their LTCs.

It was evident from all focus group discussions that community pharmacies and GP practices currently worked in isolation. Patients, pharmacists and GPs in the focus groups felt that having integrated information systems which enable pharmacists’ read–write access to medical records was essential to facilitate safe and collaborative working with GPs. Respondents from the patient survey also perceived that they would be more likely to use community pharmacy services if the pharmacist could add information about their pharmacy visit to their medical record. However, some ambivalence was shown by survey respondents as they were divided on likelihood to use community pharmacy services if pharmacists could access their whole medical record.

Moreover, all focus group participants recommended restricting pharmacists’ access to conditions which required additional patient information due to concerns about non-healthcare staff accessing medical records. This concern was reinforced in the patient survey where the majority of respondents were less likely to use community pharmacies if pharmacy support staff could access their whole medical record. GPs from the focus groups also suggested developing multidisciplinary care plans for patients with LTCs to further facilitate integration between community pharmacies.
and GP practices. Moreover, pharmacists and GPs suggested that community pharmacies should provide services that were not widely offered by GPs (e.g. domiciliary support and medication reconciliation).

**People – How interactions between stakeholders affect perceptions and delivery of community pharmacy services**

All focus group participants perceived patients with LTCs to have well-established relationships with their GP and also the practice nurse, something that was deemed lacking with community pharmacy staff. Patients in all focus groups were more willing to use extended services if they had good relationships with the pharmacist. However, patients in the survey valued pharmacy staff’s interpersonal skills (e.g. friendly and approachable) more than seeing the same pharmacy staff each time they visit the pharmacy. Pharmacists in the focus groups encouraged delegating technical activities for medicines supply to pharmacy support staff to enable/free them to provide more patient-centred care.

Patients in all focus groups reported that their pharmacists and GPs did not collaborate with each other. Pharmacist and GP participants referred to competition over services due to existing funding mechanisms as a strong barrier to collaboration, with the most recent introduction of the influenza vaccination service mentioned as an example. Pharmacists and GPs argued they were unlikely to collaborate and/or prioritise the promotion or provision of extended pharmacy services unless they were both adequately remunerated for joint working. Pharmacists in the focus groups underestimated GPs’ support for extended community pharmacy services. Whilst pharmacists believed GPs held negative perceptions of pharmacists providing extended services, GPs were enthusiastic about community pharmacists’ potential to expand their roles and expressed interest in enhancing face-to-face communication with pharmacists.
Place – Access to community pharmacies

Due to the accessibility of community pharmacies, patients in both the qualitative and quantitative studies preferred them over GP practices for non-urgent and less invasive services. However, some pharmacists in the focus groups perceived ease of access as a significant barrier to providing extended services as it increased workload. In the patient survey, most of the respondents perceived that booking an appointment in advance would make no difference or make them less likely to use community pharmacy services.

In both the qualitative and quantitative studies, there were mixed opinions amongst patients over the importance of community pharmacies being located next to GP practices. However, GPs in the focus groups preferred community pharmacies that were co-located with GP practices. Moreover, pharmacists and GPs in the focus groups were in agreement that community pharmacies being located close to GP practices enhanced communication and workflow.

Physical evidence – How physical characteristics of community pharmacies influence expectations and perceptions of stakeholders

All focus group participants were critical of the retail context of community pharmacy which offered limited space for healthcare services and suggested improving the size and quality of consultation rooms. Correspondingly in the patient survey, community pharmacies having clean/private consultation rooms were amongst the main features that respondents perceived would make them more likely to use community pharmacy services.
Promotion of services – How community pharmacy services are communicated and promoted

Patients and GPs in the focus groups were generally unaware of the considerable heterogeneity in community pharmacy types and organisations. Existing inconsistencies in the commissioning of community pharmacy services prevented pharmacists from offering/promoting some services to patients which in turn reduced patients’ awareness of services offered and made GPs reluctant to refer patients to community pharmacies.

Patients and pharmacists in the focus groups acknowledged that a positive first-hand patient experience and recommendation by peers (i.e. word-of-mouth) would establish trust in consistent, quality community pharmacy services. Pharmacists and GPs in the focus groups also highlighted the importance of incentivising GPs to refer patients to extended pharmacy services. Similarly, respondents in the patient survey perceived GP referral/recommendation and pharmacists offering them healthcare services as the most effective forms of service promotion. However, contrasting with qualitative findings, recommendation by peers was not perceived to encourage most patient survey respondents.

It was evident from both the qualitative and quantitative studies that most patients did not perceive local promotional strategies such as leaflets, emails, texts, and social media to be powerful forms of service promotion. On the other hand, all focus group participants strongly recommended nationally promoting community pharmacy services. Pharmacists and GPs suggested educating patients on the benefits of using community pharmacy services to reduce unnecessary patient visits to GPs. Surprisingly, most patient survey respondents perceived they would not be encouraged to use community pharmacy services if they were promoted on national media.


**Price – Added value stakeholders place on community pharmacy services within the primary care pathway**

Patients in the focus groups perceived that the main added value of using community pharmacy services was faster access and convenience. Patients in both the qualitative and quantitative studies highly valued pharmacists offering them enough time to discuss any concerns. In the patient survey, being offered a follow-up appointment with the pharmacist also added value to obtaining services from community pharmacies. GPs in the focus groups valued a service which would free-up their time to focus on more complex cases given that better joint working could be achieved.

**9.2 Strength and Limitations**

Using a novel marketing approach in this programme of research shifted the evidence-base from defining problems with using community pharmacy services towards explaining possible solutions. Applying the 7Ps marketing mix provided a holistic model for understanding how the complex interplay between community pharmacy, key stakeholders and the wider primary care context influences better use and implementation of extended services. However as the 7Ps marketing mix focuses on solutions, it did not account for many aspects of patient behaviour such as patients’ individual-level knowledge of community pharmacy services as well as some of the social, environmental and resource factors. Hence, the application of the 7Ps marketing mix in this research did not prompt the consideration of these factors on patients’ awareness of, and demand for community pharmacy services. Another limitation of using the 7Ps was that each component refers to broad levels of marketing which limited the depth of analysis for factors such as “place”, “physical evidence” and “price”.

Moreover, by taking a mixed-methods approach, this programme of research was able to both identify, and evaluate the extent to which, key factors (could) influence awareness, demand and use of community pharmacy services for patients with LTCs. The application of qualitative and quantitative methods in the study of the same phenomenon enhanced the credibility and validity of the research findings. The key strengths and limitations of each of the three studies are discussed below.
The systematic reviews of the literature (Study One) identified important gaps in the literature which informed the approach for Studies Two and Three. Systematic reviews are a rigorous form of literature review considered the “gold standard” for identifying, appraising and synthesising empirical evidence. A limitation was that only the author was involved in study selection and data extraction. Nonetheless, both supervisors reviewed data extraction with the author and discussed any queries which arose.

It was evident from Study One that factors relating to awareness and uptake of community pharmacy services were complex, multifactorial and highly influenced by organisational and environmental factors within the primary care context. Thus, the strength of Study Two was the application of marketing theory (7Ps marketing mix) to understand how community pharmacy services could be better used and integrated within the primary care pathway for patients with LTCs. Using the 7Ps marketing mix model focused the research on how community pharmacy services could meet patients’ (and GPs’) needs whilst accounting for organisational complexities in primary care. This generated an evidence-based holistic framework highlighting inter- and extra-organisational factors which contribute to enhancing the awareness, demand and use of community pharmacy services for patients with LTCs (Figure 7-2). Moreover, exploring multiple stakeholder groups’ (i.e. patients, pharmacists, GPs) views and experiences regarding use of community pharmacy identified broad concepts which extended the scope of study findings/implications. A key advantage of using focus group methodology for Study Two was that it highlighted the level of shared understanding/disagreement apparent within and between the stakeholder groups.

A key limitation of Study Two was the “selection bias” associated with the recruitment process. Hence, participants in this study could have been more optimistic about expanding the roles of community pharmacy services. Nonetheless, participants were not recruited via pharmacy networks/pharmacists which mitigated some of the selection bias. Moreover, this study recruited patients with two exemplar LTCs (type 2 diabetes, respiratory conditions) so the relevance of findings to patients with other LTCs requires further investigation which is suggested as an area of future research in Study Two (Chapter Seven).
Also, Study Two did not explore the views of other pharmacy staff, particularly pharmacy technicians, who could play an important role in enhancing community pharmacy workflow. Although having one researcher (the author) code the data is a limitation, both supervisors who are experienced health services researchers reviewed the process of data analysis and interpretation, which added rigor. Furthermore, one of the supervisors co-facilitated each focus group, so both were familiar with discussions and emerging themes. Any potential researcher bias that could occur due to the author being a pharmacist was mitigated as both supervisors were expert researchers in the field and one was a social scientist.

The main strength of Study Three was the quantitative approach which complemented findings on key areas from the qualitative study, across a larger sample of patients. In addition, data triangulation minimised some of the potential volunteer bias in Study Two. Study Three also expanded the scope of findings in this programme of research by quantifying the relative importance of different factors identified in Study Two. Moreover, patients were explicitly asked to choose preferences for LTC services at GP practices vs. community pharmacy, and factors which influence these preferences. Applying this ‘whole systems lens’ provided a better understanding of why patients prefer to use LTC services at community pharmacy relative to GP practice and identified which features patients value when using LTC services in primary care. This also helped identify a potential “target population” who could be influenced to use community pharmacy services over GP practice for LTCs given certain features were available at the community pharmacy.

However, a limitation of devising a novel questionnaire was that the results could not be directly compared to previous questionnaires. In addition, survey questions assessing patient likelihood to use community pharmacy services may have led to hypothetical bias as they assume that patients may be willing to use community pharmacy services. Furthermore, Study Three was conducted in one geographical region (Greater Manchester), so it is not possible to extrapolate/generalise the findings on a national level. Thus, confirming findings via a national study is recommended as an area for future work in Study Three (Chapter Eight). Another limitation was that this study looked at patients with respiratory LTCs so the applicability and relevance of findings need to be tested in other LTCs. The low response rate of 29% for this study increased the risk of non-response bias. However, this response rate is to similar
GP patient surveys\textsuperscript{38} and the sample was statistically powered at 80\% to detect a correlation as small as 0.18 between any 2 derived continuous variables, so power was maintained. Lastly, whilst the dichotomisation of variables may have underestimated the extent of variation between variables, this was necessary to enable regression analysis and produce meaningful presentation of the data.

9.3 Findings in the Context of Previous Research

The results of this programme of research suggest that the full potential of community pharmacy to optimise patient care and mitigate workload problems facing GP practice is yet to be fully realised. However, application of the 7Ps marketing mix in this research suggests that patients and GPs are receptive towards the expanding role of community pharmacy for LTCs given that services are well-defined, consistently provided and better integrated into patient pathways.

Previous studies mainly focused on patients’ experiences with specific community pharmacy services. Under “product”, this programme of work detailed the type of community pharmacy services which could meet the needs of patients with LTCs and GPs. Similar to previous studies, participants in this research recognised the potential of minor ailments and medication reviews to moderate patient demands and reduce GP workload.\textsuperscript{57, 123} However, the novel finding in this research was the potential for community pharmacies to regularly provide routine check-ups/procedures (e.g. blood tests) for patients with stable LTCs. Furthermore, there was a demand for services which focus on a specific intervention/particular problem (e.g. influenza vaccinations) as some of the current extended community pharmacy services were seen as ambiguous which negatively impacted the quality and consistency of service delivery. Thus, this programme of work has provided evidence that clear-cut service specifications/designs will be important considerations for policymakers and commissioners.

Most of the existing literature explored the use of community pharmacy services without reference to the primary care context. Using the 7Ps model in this research tapped into issues concerning joint-working between community pharmacy and GP practice within the patients’ primary care pathway. Previous studies identified lack of access to medical information as a barrier to safe and effective delivery of specific community pharmacy services.\textsuperscript{230, 231} This research moved the evidence-base forward
by examining issues pertaining to access of medical records. All stakeholders in this research highlighted the need for having integrated information systems which enable pharmacists’ read-write access to medical records. However, there were some concerns around patient confidentiality and unauthorised access by non-healthcare staff. This was further illustrated in Study Three where patients were uncertain about pharmacists having full access to their whole medical records and did not favour other healthcare staff accessing their whole records. These findings could indicate a lack of public knowledge and the need for further public education on access to medical records.\textsuperscript{232} It might also be worth considering a “middle ground” solution where relevant members of the pharmacy team have wider access to medical records, but not to all of the information.

GPs’ expectations of community pharmacy services since the revised CPCF has received little attention in the existing published literature despite GPs’ relative influence on uptake of extended services.\textsuperscript{206} The involvement of GPs in Study Two suggests that GPs’ current concerns with extended community pharmacy services are mainly linked to the “process” of service delivery rather than the “people” providing the services. GPs’ strong support for extended community pharmacy services and willingness to collaborate with community pharmacists in this research conflicted with evidence from earlier studies.\textsuperscript{132, 233} This could be explained by increasing GP workload pressures as well as the increase in clinical pharmacists working in GP practices under the PhIF which exposes many more GPs to pharmacists’ skills (see Section 2.5). However, lack of community pharmacy service coordination with GP practice and competition over funding for services such as influenza vaccination were perceived as significant barriers to collaboration.

Previous studies suggest that extended community pharmacy services were not well promoted.\textsuperscript{20, 234} This programme of work helped further unpack this by examining which promotional strategies could be effective. Whilst national promotion along with pharmacists proactively offering services was encouraged by study participants, it was evident that publicising extended services alone is not sufficient to enhance awareness, demand and use of community pharmacy services. Application of the 7Ps model in this research showed that other factors must be taken into consideration such as commissioning and remuneration models for extended services,\textsuperscript{73, 135} quality of
services provided,\textsuperscript{235} pharmacist-GP collaboration\textsuperscript{132} and the pharmacy retail environment.\textsuperscript{236}

The fragmentation of community pharmacy commissioning is a key area which has not been extensively researched. Although the 7P component “promotion” set out to specifically explore effective promotional strategies, it demonstrated that commissioning and promotion of community pharmacy services are inextricably intertwined. Stakeholders in Study Two highlighted the inherent contradiction in publicising/referring patients to use community pharmacies services if they were not consistently/nationally commissioned. Pharmacists and GPs in Study Two also highlighted that even if services were commissioned, the provision of extended services are generally reliant upon the availability of a sole pharmacist in the community pharmacy which adds to fragmentation. Thus, this thesis has provided evidence that inconsistencies in service commissioning hamper patient awareness/uptake of extended services and therefore should be addressed prior to promotion of services.

Pharmacists in Study Two believed that they were unlikely to prioritise extended services over dispensing under the current reimbursement model as the majority of community pharmacy income is derived from an item-based dispensing fee. This supports existing evidence which suggests the current reimbursement model limits the consistent delivery of extended services.\textsuperscript{57, 73, 135} Financial constraints under the CPCF have been further intensified with recent funding cuts which reduced the total funding available for essential and advanced services from £2.80B in 2015/16 to £2.69B in 2016/17, followed by further reductions to £2.592B in 2017/18.\textsuperscript{237} When exploring “people” under the 7Ps model, delegating technical activities to pharmacy technicians and other support staff was identified as a potential strategy to enable pharmacists to provide more patient-centred care. This finding reflects evidence from previous studies which suggests that effective use of skill-mix in community pharmacy could play an important role in overcoming some of the issues in the current commissioning and funding landscape.\textsuperscript{238, 239}

The importance of the patient-pharmacist relationship was contradictory and inconclusive in this research which could be reflective of the current landscape where most pharmacy services do not necessarily require an established relationship between
patients and pharmacy staff. Nonetheless, as expected, pharmacy staff’s interpersonal skills strongly influenced patient support for extended services which corroborated findings in the existing literature. 20, 240 Moreover, regression analysis in Study Three strengthened existing evidence that patients who have experienced extended services acknowledge their value and are more inclined to use them. 116, 241, 242 As the role of community pharmacy continues to expand, there is still a need for more research which explores the most important factors that could encourage patients with LTCs to buy-in to extended community pharmacy services.

Finally, this research builds on existing literature which suggests that the retail environment of community pharmacy is a major barrier to the provision of extended services. 236, 243 The findings in Study Two showed that the limited space/privacy for healthcare services and quality of consultation rooms at community pharmacies did not meet patients’ standards. The importance of “physical evidence” for patients with LTCs was further illustrated in Study Three where most survey participants perceived having suitable consultation rooms as a key influencer for using LTC services at community pharmacy. Taken together with previous studies, it is evident that challenges regarding community pharmacy layouts and privacy requirements remain unresolved despite the increase in range and complexity of extended services.

9.4 Implications for Policy and Practice

Over the past 20 years, policymakers have sought to optimise patient-centred care and reduce GPs’ workload by expanding the role of community pharmacy in healthcare. The ‘NHS Long-Term Plan’ was launched in January 2019 and proposes to make better use of pharmacists’ skills and explore further opportunities to incorporate pharmacists in the new primary care networks. 244 Increasing the number of clinical pharmacists in GP practice is an important step towards role expansion and better joint-working with GP practices. However, fully utilising the skills, accessibility and capacity of the pharmacy workforce to contribute to the care of patients with LTC requires better integration of community pharmacy services in new models of care. Findings from this programme of research highlight important implications for policy and practice in relation to achieving better utilisation and integration of community pharmacy services which may be of value to patients with LTCs.
The findings in this thesis suggest that providing medicines management via regular medication reviews is a key area where community pharmacy can meet the needs of patients with LTCs. There is also scope for community pharmacy to support patient self-management (e.g. provide advice and address concerns) and take on the management of patients who may have difficulties accessing GP appointments by providing check-ups/procedures (e.g. blood tests) for well-managed conditions. There are also opportunities for community pharmacy to provide services which promote healthy lifestyle such as smoking cessation as patients in this research were more inclined towards receiving these less invasive services at community pharmacy.

With the NHS under financial pressures, there is a need to focus on improving the efficiency and quality of extended pharmacy services. Services with clear specifications which focus on a specific intervention/problem (e.g. influenza vaccination) could enhance consistency and quality in the provision of community pharmacy services. Developing services which focus on a particular problem could also overcome current issues with some of the extended services such as disparity in service delivery, exploitation of services for profits and lack of engagement from patients and GPs. Developing quality indicators which assess the quality of extended services among community pharmacies could also ensure high-quality services. However, the complexities and challenges associated with developing quality measure assessment tools for community pharmacies must be considered prior to implementation, to maximise their potential.

Fully integrating community pharmacy into the patient’s primary care pathway requires joined-up and coordinated healthcare services between community pharmacy and GP practice. This programme of research suggests that having integrated information systems which enable community pharmacists’ read-write access to patient records may be essential to improve the quality and safety of extended services. Having “two way flow of information” also enables GPs to oversee patient activities in community pharmacy which could increase their confidence and willingness to refer patients. Although some progress has been made with the recent simplified one-click access to the SCR, ultimately pharmacists need to be able to add information on patient records to establish seamless communication and break down silo working in community pharmacies and GP practice. By the end of summer 2019, 320 pharmacies in north-east London will be granted read-write record access.
to approximately 1.5 million medical records via a local scheme funded by the NHS which if successful, could be an important step towards integration.

In light of the recent funding cuts to community pharmacy, Study Two illustrated the potential to fully utilise skill-mix by delegating more technical activities of medicines supply to pharmacy support staff, particularly pharmacy technicians. Skill-mix could enhance organisational workflow and free up pharmacist time to provide more extended services. However, policymakers should be aware that optimising skill mix in community pharmacy requires clearly defined roles amongst the pharmacy workforce and consideration of organisational/operational issues.

This programme of work indicates that national promotion when aligned with GP referrals and community pharmacists actively providing high-quality extended services may increase patient awareness and demand for extended services. However, the restrictive “fee-for-service” model prioritises dispensing activity over extended services and incentivises “quantity over quality” service provision. This was illustrated in the findings of this research where high dispensing workload, inadequate staff and management pressures were significant barriers to perform extended services, all of which have been previously recognised. Moreover, incentivising GPs to refer patients to community pharmacy services is crucial as this research highlighted the strong influence GPs have on shifting patients towards community pharmacy. Policymakers should therefore reassess the current funding model for community pharmacy in the context of incentivising both service quality and joint-working via an alignment of outcome measures used for both GP and community pharmacy contractual arrangement.

Existing fragmentation of, and inconsistencies in, the commissioning of community pharmacy services was identified as a key barrier to awareness and uptake of community pharmacy services. The current commissioning process for community pharmacies varies within and between different localities/regions making it unclear which services are available to patients and where they can access them. There is also variation between the ‘same’ service in different localities/ different commissioners – e.g. minor ailments. Better use of community pharmacy requires effective commissioning and contracting arrangements which ensure services are consistently offered to patients nationwide on a long-term basis. This will require involving
community pharmacists in the commissioning process to ensure commissioners are well informed about available extended services that community pharmacies could offer.

The results in Study Three indicate that there is a large group of patients with LTCs who are potentially receptive to, and could benefit from accessing services in community pharmacy given that certain features are in place. This suggests that when designing future pharmacy services, policymakers should adapt “client-centric” marketing approaches which involve patients in the development process to better understand patients’ service needs and how they can be addressed by community pharmacy. Involvement of patients in this research indicates that service designs must take into account pharmacy staffs’ interpersonal skills; community pharmacies having integrated information systems with GP practices and private/clean consultation rooms. Community pharmacy services which are better designed around the needs of patients and the wider healthcare team are more likely to increase patient engagement and thus achieve their potential of shifting demand away from GP practice.249

This thesis also reinforces the need to maximise the use of private consultation spaces and ensure community pharmacy premises are suitable to deliver extended services. This research particularly highlighted the importance of consultation rooms for patients who are receptive to using community pharmacy over GP practice for medication reviews and routine LTC management. Moving forward, there is a need for policymakers to develop more stringent premises guidelines for LTC services at community pharmacy.

9.5 Future Research

This programme of research provided an evidence-base for policymakers and researchers in relation to improving the awareness, demand and use of community pharmacy services which may benefit patients with LTCs. This could inform the implementation and development of community pharmacy services that integrate with primary care to meet some of the patient needs and reduce GP workload. In addition, the innovative marketing approach used in this research provides a backbone for future research which looks to explore how community pharmacy services could be
better used for patients with LTCs. Below is a description of further research that could be conducted to build on the findings of this programme of research.

**Determining the feasibility of new community pharmacy models of care**

The findings from this research conceptualised how community pharmacy services could be better used and integrated within the primary care pathway for patients with LTCs. Further research is needed to determine the feasibility of implementing new community pharmacy models of care which offer medicines-related and/or public health services that integrate with GP practice through agreed referral pathways, feedback and follow-up processes. This should incorporate key factors identified in this thesis and focus on short- and long-term effects, cost-effectiveness, impact on GP workload and the acceptability of services to service-users and healthcare professionals.

**Developing novel commissioning toolkits for community pharmacy services**

This thesis highlighted that commissioners have an important role to play in ensuring community pharmacy services are consistently provided and well-coordinated to meet the needs of patients with LTCs. However, there is relatively little/no evidence on how community pharmacy services are commissioned by NHS, CCGs and local authorities. Research in this area is needed to better understand how community pharmacy services are commissioned in order to develop novel commissioning toolkits which provide evidence-based quality metrics that drive commissioning for consistency, innovation and coordination with GP practice and within wider primary care networks.

**Examining the effects of promotional strategies on patients’ use of community pharmacy services**

This programme of research used an exploratory marketing approach to understand which promotional strategies could increase awareness, demand and use of community pharmacy services. There is a need to test these findings by examining causality between promotional strategies and patients’ use of community pharmacy
services for LTCs. Research in this area is important to determine which promotional strategies could be “scaled up” and more widely implemented.

9.6 Conclusions

This PhD thesis explored the awareness, demand and use of community pharmacy services for people with LTCs, thus establishing a solid evidence-base in this area. Overall, the results of this research suggest that there is potential for community pharmacies to offer more support for patients with LTCs and that this could be preferable to patients and GPs. However, this thesis highlighted several areas that require further development in order for community pharmacy services to be better integrated within primary care and provide more effective patient care.

This research is timely with the recent launch of the NHS long-term plan in January 2019 which proposes “to make greater use of community pharmacists’ skills”.244 As policymakers seek to further expand the role of community pharmacy with a view to alleviate workload and workforce problems facing the NHS, it is vital that they take into account the implications and recommendations from this research. This entails having services with clear services specifications that are consistently commissioned; enhancing collaboration between community pharmacy and GP practice along a patient’s primary care pathway; and strategically promoting community pharmacy services. Developments in these areas will help the NHS achieve its vision of ensuring community pharmacies provide optimal services which meet the needs of patients with LTCs. The overall series of recommendations for policy and practice based on the findings from this PhD thesis are summarised below.

Overall series of recommendations:

1. New community pharmacy models of care should be designed for patients with LTCs which are structured around ongoing medication reviews through agreed referral pathways with GP practice. These ongoing medication reviews should also serve as platform for community pharmacists to support patient self-management by addressing any concerns and providing healthy lifestyle advice when relevant.
2. The development of any future community pharmacy service should be well-defined and focus on a single, specific intervention (for example influenza vaccines or inhaler techniques) to reduce patient/GP uncertainty towards the service and minimise inconsistencies in service delivery.

3. The commissioning cycle should be revised to ensure that services which benefit patients with LTCs are consistently offered within and between different localities/regions. Weak and fragmented service commissioning undermines efforts to expand the scope of community pharmacy in moderating patient demands and alleviating GP workload.

4. The interoperability of healthcare IT systems should be further investigated to develop a safe, efficient, and coordinated system which enables two way flow of information between community pharmacy and GP practice.

5. Efforts to publicise any community pharmacy service should incentivise GP referrals and community pharmacy staff proactively offering the service to patients with LTCs. To encourage both GP and pharmacy staff engagement, remuneration models should be revised to incentivise an alignment of outcome measures used for both GP and community pharmacy contractual arrangements.

6. Premises requirements should be revised to include more stringent guidelines which ensure adequate space, size and good quality consultations rooms for any community pharmacy wishing to offer services above and beyond traditional medicines supply for patients with LTCs.

7. Whilst the current body of evidence on the impact of community pharmacy services is growing, the quality of evidence is inconsistent and more robust evaluation of services are required.

8. Future service evaluations should develop valid and reliable outcomes measures which clearly demonstrate if/how community pharmacy services bring value to patients with LTCs and the wider healthcare system.
9. Quality improvement in community pharmacy needs to be further investigated in order to develop strategies and tools which could be used to guide quality improvement in this sector. The evidence-base on monitoring and improving quality in community pharmacy is scarce despite the increasing range and volume of services following the introduction of the 2005 contractual framework.
References


Appendix 1.0: Study Two - Lay Summary of Study for Patient & Public Involvement

Summary

Patients with long-term conditions (LTCs) present with many healthcare concerns and make up 70% of the healthcare costs in the UK. Community pharmacies are the most frequently visited healthcare organisations which make them an ideal destination for the development of novel community pharmacy services to reduce GP workload. Whilst evidence has demonstrated positive outcomes from community pharmacy services, patient uptake and awareness of some of these services has been low. Understanding how community pharmacy services may be better used requires the consideration of the role of GPs within the patients’ primary care pathway as opposed to focusing solely on community pharmacy services.

This study aims to use marketing theory to understand how community pharmacy services may be better utilised within the primary care pathway for patients with LTCs. This will be done by using marketing models to shape and approach the study objectives. The views of patients, pharmacists and GPs on community pharmacy services will be explored and compared to identify practical ways to increase awareness, demand and use of community pharmacy services. Study participants will be recruited from Greater Manchester, England. This study design will mainly involve the use of focus groups to obtain participant views. However, if focus groups present recruitment difficulties, semi-structured interviews may be used as an alternative method. Focus groups/interviews will be audio-taped and transcribed verbatim with consent. The focus group/interview questions will address expectations and experiences regarding the different components of community pharmacy services within the primary care pathway.

Areas where comments would be appreciated:

- How important/relevant do you think this study is?
- Feedback on lay summary of the study (provided above)
- Feedback on the participation information sheet (attached)
- Recruitment strategies for the study (to be discussed)
Appendix 2.0: Study Two - Participant Invitation Letters

Patient Invitation Letter

Dear patient,

I would like to invite you to take part in a research study investigating the awareness, demand and use of community pharmacy (chemist) services for people with long-term conditions such as diabetes, asthma and COPD.

This study aims to understand how community pharmacy services may be used by people like you. We are particularly interested in patients with at least one of the following conditions: type 2 diabetes, asthma or COPD. We hope your taking part in this study will help to better understand the way that the healthcare needs of patients with long-term conditions which could be met by community pharmacies.

If you choose to take part, you will be asked to attend a focus group discussion lasting approximately 90-120 minutes. Focus groups are forms of interviews where groups of between 6-10 individuals discuss and comment on a particular topic. The focus group will be an open discussion with no right or wrong answers. During the focus group, you will be asked about your expectations and experiences of community pharmacy services. All information obtained will remain confidential within the focus group and research team.

If you wish to take part, you can contact the research team directly to arrange a time and place that is most convenient for all focus group participants to attend. Participants will receive £25 to cover for participation in addition to reasonable travel expenses.

Further details regarding this study and what is expected of you if you choose to take part are provided in the attached participant information leaflet.

If you have any inquiries, please do not hesitate to contact me via the contact details provided below. If you wish to take part in the study you can contact me directly.

Thank you very much for taking the time to read this letter

Kind Regards,

Ali Hindi: PhD student, on behalf of the research team – Dr Ellen Schafheutle and Dr Sally Jacobs

Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT

Tel: 0161 275 7944   Email: ali.hindi@postgrad.manchester.ac.uk
Pharmacist Invitation Letter

Dear pharmacist,

I would like to invite you to take part in a research study investigating the awareness, demand and use of community pharmacy services for people with long-term conditions. This study focuses on patients with diabetes, asthma and COPD.

This study aims to understand how community pharmacy services may be used by people with long-term conditions. We are particularly interested in the views of patients, general practitioners and pharmacists to fully understand how community pharmacy services may be better used. We hope your taking part in this study will help to better understand the way that the healthcare needs of patients with long-term conditions which could be met by community pharmacies.

If you choose to take part, you will be asked to attend a homogeneous focus group discussion lasting approximately 90-120 minutes. Focus groups are forms of interviews where groups of between 6-10 individuals discuss and comment on a particular topic. The focus group will be an open discussion with no right or wrong answers. During the focus group, you will be asked about your expectations and experiences of community pharmacy services. All information obtained will remain confidential within the focus group and research team.

If you wish to take part, you can contact the research team directly to arrange a time and place that is most convenient for all focus group participants to attend. Participants will receive £50 to cover for participation and travel expenses.

Further details regarding this study and what is expected of you if you choose to take part are provided in the attached participant information leaflet.

If you have any inquiries, please do not hesitate to contact me via the contact details provided below. If you wish to take part in the study you can contact me directly.

Thank you very much for taking the time to read this letter

Kind Regards,

Ali Hindi: PhD student, on behalf of the research team – Dr Ellen Schafheutle and Dr Sally Jacobs

Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT

Tel: 0161 275 7944

Email: ali.hindi@postgrad.manchester.ac.uk
Dear general practitioner,

I would like to invite you to take part in a research study investigating the awareness, demand and use of community pharmacy services for people with long-term conditions. This study focuses on patients with diabetes, asthma and COPD.

This study aims to understand how community pharmacy services may be used by people with long-term conditions. We are particularly interested in the views of patients, general practitioners and pharmacists to fully understand how community pharmacy services may be better used. We hope your taking part in this study will help to better understand the way that the healthcare needs of patients with long-term conditions could be met by community pharmacies.

If you choose to take part, you will be asked to attend a focus group discussion lasting approximately 90-120 minutes. Focus groups are forms of interviews where groups of between 6-10 individuals discuss and comment on a particular topic. The focus group will be an open discussion with no right or wrong answers. During the focus group, you will be asked about your awareness and expectations of community pharmacy services. All information obtained will remain confidential within the focus group and research team.

If you wish to take part, you can contact the research team directly to arrange a time and place that is most convenient for all focus group participants to attend. Participants will receive £100 to cover for participation and reasonable travel expenses.

Further details regarding this study and what is expected of you if you choose to take part are provided in the attached participant information leaflet.

If you have any inquiries, please do not hesitate to contact me via the contact details provided below. If you wish to take part in the study you can contact me directly.

Thank you very much for taking the time to read this letter

Kind Regards,

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Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT

Tel: 0161 275 7944

Email: ali.hindi@postgrad.manchester.ac.uk
Appendix 3.0: Study Two - Participant Information Sheets

Patient Participant Information Sheet

You are being invited to take part in a research study investigating the awareness, demand and use of community pharmacy (chemist) services for people with long-term conditions. Long-term conditions are defined as conditions that cannot, at present, be cured; but can be controlled by medication and other therapies. Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

Patients with long-term conditions have many healthcare needs that need help and support from healthcare professionals. Community pharmacies are the most frequently visited healthcare organisations which make them an ideal location for introducing new services to meet those needs. Although it has been shown that community pharmacy services can be beneficial, they are not widely known about or used by patients. It is important to talk to patients, GPs and pharmacists to fully understand how community pharmacy services may be better used.

Why have I been invited to take part in this study?

For this study, we are interested in people who suffer from diabetes, asthma or chronic obstructive pulmonary disease (COPD) as example of long-term conditions. You have either been identified by a charity organization (Asthma UK and Diabetes UK), an online campaign for patient and public involvement (Citizen Scientist and Research for the Future) or have self-identified as someone living in North West England with one of the above long-term conditions.

Do I have to take part?

No, you do not have to take part in the study if you do not want to. Taking part in the research is voluntary; this means it is completely up to you to decide whether or not to join the study. Your decision to take part in this study will not affect the care you are receiving now or in the future. If you decide to take part and sign the consent form but change your mind later, you are free to withdraw from the study without giving a reason and without any consequence to your current or future treatment; you can do so up until the point when we have anonymized the information you have provided, by which we mean we have removed the link to your name.

What will taking part involve?

If you decide to take part in this study you will be invited to attend a focus group discussion at the University of Manchester or other suitable convenient locations with other patients with long-term conditions like yourself to talk about your awareness and use of community pharmacy services. Focus groups are forms of group interviews where groups of between 6 and 10 people with similar experiences discuss and comment on a particular topic. Before the focus group, you will be asked to sign the consent form at the back of this information sheet, which also indicates that you are happy for these discussions to be audio-recorded. The focus group will last
approximately 90 to 120 minutes and will be an open discussion with no right or wrong answers. If it is not possible to arrange focus groups for all those interested in participation, one-to-one interviews may be offered as an alternative which will last approximately 60 minutes.

**What are the possible benefits of taking part?**

Although there is no direct benefit for individual participants in this study, your contributions to this study will provide a greater understanding of the healthcare needs of patients with long-term conditions that could be met by community pharmacies. Moreover, this could also provide useful information for the improvement of community pharmacy roles and services for patients with long-term conditions.

**What are the possible disadvantages and risks of taking part?**

Although group discussions will not include topics that might be sensitive, should you become distressed or upset if any sensitive or upsetting discussions are brought up, you will then be asked by one of the researchers if you wish to take a break from the discussion. If you do not wish to carry on, you can leave the discussion and will be looked after in a separate area by the researcher.

**Will I be compensated for taking part?**

You will receive £25 to cover for participation and any other expenses you could incur in addition to reasonable travel expenses.

**Will my taking part in the study be kept confidential?**

We will keep any information you share with us confidential. We will also ask you not to talk about what is shared during the discussions outside the focus group or share information about who attended these. Audio-recordings of focus group discussions will be transcribed by the researcher or a university approved transcription company. These transcripts will be anonymized such that it will not be possible for anybody reading them to identify you nor would they identify any of the other participants, or any other person or organization that is mentioned during discussion. The electronic files with these transcripts and any paper documents containing identifiable information will be stored securely at the University of Manchester. Audio recordings will be destroyed at the end of the study. Electronic data will be stored as password-protected files on a secure networked drive at University of Manchester and paper documents will be stored in locked filing cabinets located in a locked office at the University. The use of identifiable personal data will be avoided wherever possible and participants’ anonymity will be maintained by using a unique ID number. Direct quotes from focus group discussions may be used in the study report or in papers published from it, but will not allow participants to be identified. Data from the study will be kept for a minimum of 5 years after the date of any publication which is based upon it, to follow recommended good practice guidelines for research. Your contact details will be kept until a summary of study findings is provided to you.

The above data, following anonymization, will be shared with the supervisory team. Furthermore, individuals from the University of Manchester, NHS Trust or regulatory authorities may need to look at the data collected for this study to make sure the project is being carried out as planned. This may involve looking at identifiable data but all individuals involved in auditing and monitoring the study, will have a strict duty of confidentiality to you as a research participant.
**What will happen if I do not want to carry on with the study?**

You can withdraw from the study completely without giving a reason and without any consequence to your current or future treatment. No further data will be collected from the moment you withdraw. However, any information already gathered from you during the focus group discussion will be kept as all participants’ contributions to discussions are usually reliant on one another.

**What will happen to the results of the research study?**

The findings of this study are expected to be published in peer reviewed academic journals, The University of Manchester Centre for Pharmacy Workforce Studies (CPWS) website, conference presentations and the researcher’s PhD thesis. Participants who wish to be informed about the study results will be sent an attached summary sheet of findings in the form of an executive summary report. This will involve the research team keeping your contact details for this purpose.

**Who has reviewed the study?**

This study has been reviewed by the National Health Service Research Ethics Committee (REC).

**What if there is a problem?**

If there are any issues regarding this research please contact the following below.

**Minor complaints**

If you have a minor complaints then please contact the researcher(s) in the first instance:

<table>
<thead>
<tr>
<th>Mr. Ali Hindi (Researcher):</th>
<th>Tel: 0161 275 7944</th>
</tr>
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<tr>
<td>Pharmacy Practice PhD student.</td>
<td>Email: <a href="mailto:ali.hindi@postgrad.manchester.ac.uk">ali.hindi@postgrad.manchester.ac.uk</a></td>
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<th>Tel: 0161 275 7493</th>
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<tr>
<td>Senior Lecturer in Law &amp; Professionalism in Pharmacy Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT</td>
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<tr>
<td>Lecturer in Social Pharmacy Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT</td>
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**Formal Complaints**

If you wish to make a formal complaint or if you are not satisfied with the response you have gained from the researchers in the first instance then please contact the Research Governance and Integrity Manager, Research Office, Christie Building, University of Manchester, Oxford Road,
Manchester, M13 9PL, by emailing: research.complaints@manchester.ac.uk or by telephoning 0161 275 2674 or 275 2046.

**Who can I contact for further information?**

If you have any questions or require any additional information, please do not hesitate to contact Mr. Ali Hindi (details provided above).

Thank you for taking the time to read this information sheet.
CONSENT FORM

Study Title: A study of awareness, demand and use of community pharmacy services for people with long-term conditions: views of patients, pharmacists and GPs

Name of researcher: Mr Ali Hindi

Please Initial Box

1) I confirm that I have read and understand the information sheet dated 16/11/2017 (version 3.0) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw up until the point when the research team has anonymized the information I provided without giving any reason, without my medical care or legal rights being affected.

3) I agree not to share anything discussed outside the focus group.

4) I agree for the focus group to be audio-recorded and written out in full (transcribed) by the research team or one of the University’s approved transcription service providers.

5) I understand that relevant sections of data collected during the study may be looked at by responsible individuals from the University of Manchester, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in the research. I give permission for these individuals to have access to this data.

6) I agree to take part in the above study.

Name of Participant:

Signature: Date:

Name of Researcher:

Signature: Date:
Pharmacist Participant Information Sheet

You are being invited to take part in a research study investigating the awareness, demand and use of community pharmacy (chemist) services for people with long-term conditions. Long-term conditions are defined as conditions that cannot, at present, be cured; but can be controlled by medication and other therapies. Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

Patients with long-term conditions have many healthcare needs that need help and support from healthcare professionals. Community pharmacies are the most frequently visited healthcare organisations which make them an ideal location for introducing new services to meet those needs. Although it has been shown that community pharmacy services can be beneficial, they are not widely known about or used by patients. It is important to talk to patients, GPs and pharmacists to fully understand how community pharmacy services may be better used.

Why have I been invited to take part in this study?

For this study, we are interested in people who suffer from diabetes, asthma or chronic obstructive pulmonary disease (COPD) as example of long-term conditions, pharmacists and GPs. You have either been identified by contacts in your community pharmacy or have self-identified as a pharmacist living in North West England.

Do I have to take part?

No, you do not have to take part in the study if you do not want to. Taking part in the research is voluntary; this means it is completely up to you to decide whether or not to join the study. If you decide to take part and sign the consent form but change your mind later, you are free to withdraw from the study without giving a reason; you can do so up until the point when we have anonymized the information you have provided, by which we mean we have removed the link to your name.

What will taking part involve?

If you decide to take part in this study you will be invited to attend a focus group discussion at the University of Manchester or other suitable convenient locations with other pharmacists like yourself to talk about awareness and use of community pharmacy services. Focus groups are forms of group interviews where groups of between 6 and 10 people with similar experiences discuss and comment on a particular topic. Before the focus group, you will be asked to sign the consent form at the back of this information sheet, which also indicates that you are happy for these discussions to be audio-recorded. The focus group will last approximately 90 to 120 minutes and will be an open discussion with no right or wrong answers. If it is not possible to arrange focus groups for all those interested in participation, one-to-one interviews may be offered as an alternative which will last approximately 60 minutes.
What are the possible benefits of taking part?

Although there is no direct benefit for individual participants in this study, your contributions to this study will provide a greater understanding of the healthcare needs of patients with long-term conditions that could be met by community pharmacies. Moreover, this could also provide useful information for the improvement of community pharmacy roles and services for patients with long-term conditions.

What are the possible disadvantages and risks of taking part?

Although group discussions will not include topics that might be sensitive, should you become distressed or upset if any sensitive or upsetting discussions are brought up, you will then be asked by one of the researchers if you wish to take a break from the discussion. If you do not wish to carry on, you can leave the discussion and will be looked after in a separate area by the researcher.

Will I be compensated for taking part?

You will receive £50 to cover for participation and reasonable travel expenses.

Will my taking part in the study be kept confidential?

We will keep any information you share with us confidential. We will also ask you not to talk about what is shared during the discussions outside the focus group or share information about who attended these. Audio-recordings of focus group discussions will be transcribed by the researcher or a university approved transcription company. These transcripts will be anonymized such that it will not be possible for anybody reading them to identify you nor would they identify any of the other participants, or any other person or organization that is mentioned during discussion. The electronic files with these transcripts and any paper documents containing identifiable information will be stored securely at the University of Manchester. Audio recordings will be destroyed at the end of the study. Electronic data will be stored as password-protected files on a secure networked drive at University of Manchester and paper documents will be stored in locked filing cabinets located in a locked office at the University. The use of identifiable personal data will be avoided wherever possible and participants’ anonymity will be maintained by using a unique ID number. Direct quotes from focus group discussions may be used in the study report or in papers published from it, but will not allow participants to be identified. Data from the study will be kept for a minimum of 5 years after the date of any publication which is based upon it, to follow recommended good practice guidelines for research. Your contact details will be kept until a summary of study findings is provided to you.

Any discussions taking place during the study are confidential. However, if you tell us something about unsafe practice, we may have to disclose this information to the relevant parties within your organisation. In such an occurrence, we would discuss this with you during the focus group and tell you our intended course of action.

The above data, following anonymization, will be shared with the supervisory team. Furthermore, individuals from the University of Manchester, NHS Trust or regulatory authorities may need to look at the data collected for this study to make sure the project is being carried out as planned. This may involve looking at identifiable data but all individuals involved in auditing and monitoring the study, will have a strict duty of confidentiality to you as a research participant.
What will happen if I do not want to carry on with the study?

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What will happen to the results of the research study?

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Who has reviewed the study?

This study has been reviewed by the National Health Service Research Ethics Committee (REC)

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If there are any issues regarding this research please contact the following below.

Minor complaints

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Who can I contact for further information?

If you have any questions or require any additional information, please do not hesitate to contact Mr. Ali Hindi (details provided above).

Thank you for taking the time to read this information sheet.
CONSENT FORM

Study Title: A study of awareness, demand and use of community pharmacy services for people with long-term conditions: views of patients, pharmacists and GPs

Name of researcher: Mr Ali Hindi

Please Initial Box

1) I confirm that I have read and understand the information sheet dated 16/11/2017 (version 3.0) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw up until the point when the research team has anonymized the information I provided without giving any reason, without my medical care or legal rights being affected.

3) I agree not to share anything discussed outside the focus group.

4) I agree for the focus group to be audio-recorded and written out in full (transcribed) by the research team or one of the University’s approved transcription service providers.

5) I understand that relevant sections of data collected during the study may be looked at by responsible individuals from the University of Manchester, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in the research. I give permission for these individuals to have access to this data.

6) I agree to take part in the above study.

Name of Participant:

Signature: Date:

Name of Researcher:

Date:

Signature:
You are being invited to take part in a research study investigating the awareness, demand and use of community pharmacy (chemist) services for people with long-term conditions. Long-term conditions are defined as conditions that cannot, at present, be cured; but can be controlled by medication and other therapies. Before you decide whether to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

Patients with long-term conditions have many healthcare needs that need help and support from healthcare professionals. Community pharmacies are the most frequently visited healthcare organisations which make them an ideal location for introducing new services to meet those needs. Although it has been shown that community pharmacy services can be beneficial, they are not widely known about or used by patients. It is important to talk to patients, GPs and pharmacists to fully understand how community pharmacy services may be better used.

Why have I been invited to take part in this study?

For this study, we are interested in people who suffer from diabetes, asthma or chronic obstructive pulmonary disease (COPD) as example of long-term conditions, pharmacists and GPs. You have either been identified by contacts in your GP surgery or have self-identified as a GP living in North West England.

Do I have to take part?

No, you do not have to take part in the study if you do not want to. Taking part in the research is voluntary; this means it is completely up to you to decide whether or not to join the study. If you decide to take part and sign the consent form but change your mind later, you are free to withdraw from the study without giving a reason; you can do so up until the point when we have anonymized the information you have provided, by which we mean we have removed the link to your name.

What will taking part involve?

If you decide to take part in this study you will be invited to attend a focus group discussion at the University of Manchester or other suitable convenient locations with other GPs like yourself to talk about awareness and use of community pharmacy services. However, no focus groups will be conducted at health facilities. Focus groups are forms of group interviews where groups of between 6 and 10 people with similar experiences discuss and comment on a particular topic. Before the focus group, you will be asked to sign the consent form at the back of this information sheet, which also indicates that you are happy for these discussions to be audio-recorded. The focus group will last approximately 90 to 120 minutes and will be an open discussion with no right or wrong answers. If it is not possible to arrange focus groups for all those interested in participation, one-to-one interviews may be offered as an alternative which will last approximately 60 minutes.
What are the possible benefits of taking part?

Although there is no direct benefit for individual participants in this study, your contributions to this study will provide a greater understanding of the healthcare needs of patients with long-term conditions that could be met by community pharmacies. Moreover, this could also provide useful information for the improvement of community pharmacy roles and services for patients with long-term conditions.

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Will I be compensated for taking part?

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Will my taking part in the study be kept confidential?

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| Pharmacy Practice PhD student. |
| Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT |
| Tel: 0161 275 7944 |
| Email: ali.hindi@postgrad.manchester.ac.uk |

| Dr. Ellen Schafheutle (Supervisor): |
| Senior Lecturer in Law & Professionalism in Pharmacy Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT |
| Tel: 0161 275 7493 |
| Email: ellen.schafheutle@manchester.ac.uk |

| Dr. Sally Jacobs (Supervisor): |
| Lecturer in Social Pharmacy Division of Pharmacy and Optometry, University of Manchester, Oxford Road, Manchester, M13 9PT |
| Tel: 0161 306 0602 |
| Email: sally.jacobs@manchester.ac.uk |

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Who can I contact for further information?

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Thank you for taking the time to read this information sheet
CONSENT FORM

Study Title: A study of awareness, demand and use of community pharmacy services for people with long-term conditions: views of patients, pharmacists and GPs

Name of researcher: Mr Ali Hindi

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2) I understand that my participation is voluntary and that I am free to withdraw up until the point when the research team has anonymized the information I provided without giving any reason, without my medical care or legal rights being affected.

3) I agree not to share anything discussed outside the focus group.

4) I agree for the focus group to be audio-recorded and written out in full (transcribed) by the research team or one of the University’s approved transcription service providers.

5) I understand that relevant sections of data collected during the study may be looked at by responsible individuals from the University of Manchester, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in the research. I give permission for these individuals to have access to this data.

6) I agree to take part in the above study.

Name of Participant:

Signature: Date:

Name of Researcher:

Signature: Date:
Appendix 4.0: Study Two - Participation Flyers

DO YOU HAVE ASTHMA/COPD OR TYPE 2 DIABETES

Join us
in this research looking at how community pharmacy services may be better used to help patients with long-term conditions

WHAT WILL I DO?

Attend a focus group discussion

WILL I BE COMPENSATED?

Yes, all volunteers will be compensated for their time

For more information:
ali.hindi@postgrad.manchester.ac.uk
Tel: 0161 275 7944

Patient, pharmacist and GP views on community pharmacy services (v1)

The University of Manchester

Version 2.0 19/04/2017 IRAS ID: 228705
ARE YOU A PHARMACIST OR GP?

Join us in this research looking at how community pharmacy services may be better used to help patients with long-term conditions.

WHAT WILL I DO?

Attend a focus group discussion

WILL I BE COMPENSATED?

Yes, all volunteers will be compensated for their time

For more information:
ali.hindi@postgrad.manchester.ac.uk
Tel: 0161 275 7944

The University of Manchester

Patient, pharmacist and GP views on community pharmacy services (v1)

Version 2.0 19/04/2017 IRAS ID: 228705
## Appendix 5.0: Study Two - Summary of Focus Group Pilot

<table>
<thead>
<tr>
<th>Section</th>
<th>Question</th>
<th>Suggestions by participants/observations by the interviewer</th>
<th>Action taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Probe: Do you think they [GPs] (would) recommend any of these services? Which ones?</td>
<td><strong>Suggestion:</strong> A very similar question is already mentioned under price (value): “In terms of GPs, which pharmacy services are they most willing to recommend to their patients? Which services are they least willing to recommend to their patients? Why?”</td>
<td>This probe was combined with the question under price (value) to avoid repetition/duplication.</td>
</tr>
<tr>
<td>“service”)</td>
<td></td>
<td></td>
<td>--------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>People</td>
<td>Do you think pharmacists deliver extended services to standards? Why/why not?</td>
<td><strong>Observation:</strong> The word “standards” got participants solely talking about lack of standard measures in community pharmacy services instead of the whole process of delivering community pharmacy services.</td>
<td>The word “standard” was replaced with “well”. However “standards” was added as a prompt as it is important to cover.</td>
</tr>
<tr>
<td>Promotion</td>
<td>What do you think influences/would influence patients to try new pharmacy services? What do you think influences/would influence GPs to recommend new pharmacy services?</td>
<td><strong>Suggestion:</strong> Replace “what do you think” with “is there anything that you think”. Using “what do you think” is making an assumption.</td>
<td>“What do you think” was replaced with “is there anything that you think” to avoid making assumptions.</td>
</tr>
<tr>
<td>General</td>
<td></td>
<td><strong>Suggestion:</strong> Use the terms “Tell me” “explain to me” “describe to me” for some questions</td>
<td>Some of these terms were used in the topic guide where applicable.</td>
</tr>
<tr>
<td>comments</td>
<td></td>
<td><strong>Suggestion:</strong> Questions could be written down on a sheet or a board (big text) so that participants can view the question.</td>
<td>No action taken. It was agreed by the author and his supervisors that writing down questions on a sheet/board would make the format of the focus groups less flexible.</td>
</tr>
</tbody>
</table>
IMPORTANT – PLEASE READ

We are interested in how people use community pharmacies (‘chemists’), particularly to help with the management of their long-term condition.

You have received this questionnaire, because you have a long-term condition (asthma or COPD), for which community pharmacies can offer services beyond the supply of your medication.

We know that people don’t always know about, or use, the different [health] services pharmacies can offer.

In this questionnaire, we are interested in finding out how you use pharmacy services, which services you would prefer to get from your pharmacy or from your GP, and what might make you more likely to use your pharmacy instead of your GP.

Please answer all questions thinking only about your breathing problem (asthma or COPD).

PLEASE RETURN TO:

Mr Ali Hindi

FREEPOST XX, THE UNIVERSITY OF MANCHESTER, DIVISION OF PHARMACY & OPTOMETRY, STOPFORD BUILDING, 1ST FLOOR, OXFORD ROAD, MANCHESTER M13 9PT
1. Do you have any of the following breathing problems? (Please select ONE box only)

This question is just to confirm that this questionnaire has gone to the right people, namely those with asthma or COPD

- Asthma → Go to question 2
- COPD → Go to question 2
- Other breathing problem

I do not have a breathing problem

If you ticked the box to indicate that you do not have a problem, you do not need to complete any further questions. Thank you for completing the questionnaire. Please return it in the FREEPOST envelope.

YOUR USE OF PHARMACY/CHEMIST SERVICES

- We would like to ask you questions about your use of pharmacy/chemist services. Please answer the questions thinking only about your breathing problem (asthma or COPD).
- For questions which relate to medications, please think about ALL of your medications including pills or tablets, liquids, creams, inhalers and nebulisers.

2. How often do you visit a pharmacy/chemist specifically for health related purposes e.g. getting medication, getting health advice? (Please select ONE box only)

- Once a day
- Every two or three days
- About once a week
- About once every two weeks
- About once a month
- About once every three months
- About once every six months
- About once a year
- Less than once a year
- Never
- Other (please specify) ________________________________
3. If you do visit a pharmacy/chemist for health related purposes, which of the following best describes you? (Please select ONE box only)

- I visit the same pharmacy all of the time
- I visit a variety of different pharmacies but visit one most often
- I visit a variety of different pharmacies and none more frequently than any other
- Not applicable

4. Which of the following health services have you used at the pharmacy/chemist? (Tick all that apply)

- Receiving medication that has been prescribed
- Buying medicines
- Assistance with how to take medications
- Consultation to review all the medications used
- Asking for advice on minor conditions (e.g. cough, cold, sore throat)
- Help with stopping smoking
- Help with losing weight
- Help with the way you use your inhaler (Inhaler technique)
- Flu jab/vaccination
- Advice on vaccinations for travelling abroad
- Finger prick blood tests (e.g. for checking cholesterol)
- Blood pressure checks
- Regular check-ups to see how well your breathing condition is progressing (e.g. spirometry tests)
- Help when symptoms for your breathing condition get worse (e.g. breathlessness, coughing)
- None
- Other (please specify) ________________________________
5. If you have used any of the health services at the pharmacy other than picking a prescription or buying medicines, how did you find out about them? (Tick all that apply).

☐ Being offered health services by the pharmacy staff when visiting the pharmacy to pick up your medications

☐ Experiencing health services delivered to you in person

☐ Being recommended health services by friends/family members

☐ Being recommended/referred to health services by a GP

☐ Seeing advertisements about health services on a poster/leaflet in a pharmacy

☐ Seeing advertisements about health services on a poster/leaflet in a GP surgery

☐ Receiving a text/email from the pharmacy about health services on offer

☐ Seeing health services advertised on national media (e.g. television, radio, newspapers etc.)

☐ Seeing health services advertised on social media (e.g. Facebook, Twitter)

☐ I have only used pharmacy for my supply of medication (picking a prescription or buying medicines)

☐ Other (please specify) _______________________________________________________________
6. Please indicate where you would like to receive each of the following services for your breathing condition by ticking the appropriate box.

<table>
<thead>
<tr>
<th>Service</th>
<th>Strongly prefer GP surgery</th>
<th>Slightly prefer GP surgery</th>
<th>No preference for either GP surgery or pharmacy</th>
<th>Slightly prefer pharmacy</th>
<th>Strongly prefer pharmacy</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Obtaining medication that has been prescribed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Buying medicines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Assistance with how to take medications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>d) Consultation to review all the medications used</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>e) Getting advice on minor conditions (e.g. cough, cold)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Help with stopping smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Help with losing weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Help with the way you use your inhaler (Inhaler technique)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Flu jab/ vaccination service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Advice on vaccinations for travelling abroad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) Finger prick blood tests (e.g. for checking cholesterol)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Blood pressure checks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) Regular check-ups to see how well your breathing condition is progressing (e.g. spirometry tests)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>n) Help when symptoms for your breathing condition get worse (e.g. breathlessness, coughing)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
7. Assume you were to use the pharmacy for services other than to pick up a prescription or buy medicines. Please indicate how likely it would be for you to use health services at the pharmacy/chemist if they had the following features by ticking the appropriate box.

<table>
<thead>
<tr>
<th>How likely would it be for you to use health services at the pharmacy/chemist:</th>
<th>Much less likely</th>
<th>Less likely</th>
<th>Does not make a difference</th>
<th>More likely</th>
<th>Much more likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) If you could book an appointment for pharmacy services in advance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) If you can get to the pharmacy easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) If the pharmacy is located next to your GP surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) If the pharmacy is located in the same building as your GP surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) If the pharmacist is friendly and approachable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) If the other pharmacy staff are friendly and approachable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) If you see the same pharmacist each time you visit the pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) If you are known to the other staff at the pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) If pharmacy services are provided to you in private consultation rooms that cannot be overheard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) If pharmacy services are provided to you in clean consultation rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) If pharmacy services are provided to you in consultation rooms with enough space</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) If the pharmacist offers you enough time to ask questions or discuss any concerns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) If you were offered a follow-up appointment with the pharmacist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n) If pharmacists can see only important information on your medical record (e.g. current medications, allergies, name/address)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o) If pharmacists can see your whole medical record</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p) If other members of pharmacy staff can see only important information on your medical record (e.g. current medication, allergies, name/address)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>q) If other members of pharmacy staff can see your whole medical record</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r) If pharmacists can add information about your visit to the pharmacy to your medical record so the GP knows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Looking at your answers to question 7, if all of the features you ticked as “more/much more likely” were all in place, would this make any difference to how you use your pharmacy in reality? (Please tick ONE box only)

☐ It would not make a difference to my current use of pharmacy (please state reasons below):
___________________________________________________________________________________________
___________________________________________________________________________________________

☐ I would be more likely to use the pharmacy than I currently do

WAYS OF HEARING ABOUT CHEMIST/ PHARMACY SERVICES

- Most people do not know much about the range of pharmacy/chemist health services available.

- We are interested in how would you like to find out about pharmacy/chemist health services beyond the supply of your medication.

9. Please indicate which, if any, of the following ways might encourage you to use the pharmacy/chemist for health services other than picking a prescription or buying medicines? (Tick all that apply)

☐ Being offered health services by the pharmacy staff when visiting the pharmacy to pick up your medications

☐ Experiencing health services delivered to you in person

☐ Being recommended health services by friends/family members

☐ Being recommended/referred to health services by a GP

☐ Seeing advertisements about health services on a poster/leaflet in a pharmacy

☐ Seeing advertisements about health services on a poster/leaflet in a GP surgery

☐ Receiving a text/email from the pharmacy about health services on offer

☐ Seeing health services advertised on national media (e.g. television, radio, newspapers etc.)

☐ Seeing health services advertised on social media (e.g. Facebook, Twitter)

☐ None

☐ Other (please specify) ________________________________________________________________
**BACKGROUND INFORMATION**

- Finally, we’d like to ask some questions about you.

### 10. Gender:

- Male [ ]
- Female [ ]
- Other [ ]

### 11. What is your age group?

- <18 years old [ ]
- 18-24 years old [ ]
- 25-34 years old [ ]
- 35-44 years old [ ]
- 45-54 years old [ ]
- 55-64 years old [ ]
- 65-74 years old [ ]
- 75+ years old [ ]

### 12. How would you describe your ethnic origin? *(Please tick **ONE** box only).*

<table>
<thead>
<tr>
<th>White:</th>
<th>[ ] English/Welsh/Scottish/Northern Irish/ British</th>
<th>[ ] Irish</th>
<th>[ ] Gypsy or Irish Traveller</th>
<th>[ ] Other</th>
</tr>
</thead>
</table>

|-------------------------------|--------------------------|-------------------------|----------------|---------|

<table>
<thead>
<tr>
<th>Asian/ Asian British:</th>
<th>[ ] Indian</th>
<th>[ ] Pakistani</th>
<th>[ ] Bangladeshi</th>
<th>[ ] Chinese</th>
<th>[ ] Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Black/African/Caribbean/ Black British:</th>
<th>[ ] African</th>
<th>[ ] Caribbean</th>
<th>[ ] Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Other ethnic group:</th>
<th>[ ] Arab</th>
<th>[ ] Any other ethnic group</th>
<th>[ ] Prefer not to say</th>
</tr>
</thead>
</table>

**Comments** *(Please use this space if you wish to make any other comments about using your pharmacy for your breathing condition)*
Appendix 7.0: Study Three - Summary of Cognitive Interviews

Cognitive interviews round one

<table>
<thead>
<tr>
<th>Participant 1</th>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td></td>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Pharmacy features (Q7)</td>
<td>Participant made suggestions to amend response scales: Replace “slightly more likely” with “likely” and “much more likely” with “definitely”.</td>
</tr>
<tr>
<td></td>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Demographic questions (Q9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Time taken to complete the survey</td>
<td>5 minutes</td>
</tr>
<tr>
<td></td>
<td>General comments from participant</td>
<td>“The questionnaire was very understandable. Participant believed it helped that there was clear instructions for each question”.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant 2</th>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td></td>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>Participant commented that the response scale for question 6 needs to be more clear-cut (i.e. what is the difference between slightly prefer or strongly prefer)</td>
</tr>
<tr>
<td></td>
<td>Pharmacy features (Q7)</td>
<td>Participant commented that some items on questions 7 were very similar (i.e. three consecutive questions on the consultation room and access to medical records)</td>
</tr>
<tr>
<td></td>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td>Demographic questions (Q9-11)</td>
<td>This section was left blank</td>
</tr>
<tr>
<td></td>
<td>Time taken to complete the survey</td>
<td>7 minutes</td>
</tr>
<tr>
<td></td>
<td>General comments from participant</td>
<td>“Overall, the questionnaire was understandable, flowed very well so there was no problem with knowing what was being asked”.</td>
</tr>
</tbody>
</table>
### Participant 3

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>Q3: Participant had other breathing problem but the “other” option was not available</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>Participant felt questions 6 and 7 are very long so you just tend to go for the middle ground and end up just ticking the same thing eventually.</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>See comment above</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>8 minutes</td>
</tr>
<tr>
<td>General comments  from participant</td>
<td>“Overall, the questionnaire was understandable”.</td>
</tr>
</tbody>
</table>

### Participant 4

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td><strong>Interviewer probe question:</strong> so you would be less likely to use a pharmacy if you could book an appointment in advance?</td>
</tr>
<tr>
<td>The participant answered: Ticking less likely doesn’t necessarily mean I am less likely to use the pharmacy but more that the service feature is less important to me. Booking an appointment in advance is not as important to me the pharmacy being close-by</td>
<td></td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>12 minutes</td>
</tr>
<tr>
<td>General comments  from participant</td>
<td>“I Understood questions and answered based on my understanding”</td>
</tr>
<tr>
<td>Section/question tested</td>
<td>Comments/remarks</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td></td>
<td><em>Interviewer probe question:</em> How did u find the response options?</td>
</tr>
<tr>
<td></td>
<td><em>Participant answered:</em> It was clear, it is either one way or the other with these things</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear. Emphasised that they didn’t like pharmacists having access to their medical records</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>8 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>“If you want people to use pharmacies more often throw in a nurse in there. People trust nurses more because we see them, we know them. We don’t see pharmacists’ they’re always hiding at the back so we don’t know them. Also mentioned that the main issue with the consultation rooms in all the pharmacies he’s been to was not size but that everything could be heard and you don’t know who’s been in there before you [made reference that addicts use these rooms]”</td>
</tr>
<tr>
<td>Participant 6</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td><strong>Section/question tested</strong></td>
<td><strong>Comments/remarks</strong></td>
</tr>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td><strong>Interviewer probe question:</strong> How did u find the response options?</td>
<td></td>
</tr>
<tr>
<td><strong>Participant answered:</strong> they are fine with me</td>
<td></td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td><strong>Interviewer observation:</strong> Participant did not seem to understand that this question is hypothetical based on probe question.</td>
</tr>
<tr>
<td><strong>Interviewer probe question:</strong> Why did you choose you would be less likely to use a pharmacy services if they were provided in private consultation rooms or had more space or were clean?</td>
<td></td>
</tr>
<tr>
<td><strong>Participant answered:</strong> All the pharmacies I go to have ones I go to have small consultation rooms anyways</td>
<td></td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>8 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>“I had no problems with the survey”</td>
</tr>
</tbody>
</table>
## Cognitive interviews round two

<table>
<thead>
<tr>
<th>Participant 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section/question tested</strong></td>
</tr>
<tr>
<td>Cover page</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
</tr>
<tr>
<td>Demographic questions (Q9-11)</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
</tr>
<tr>
<td>General comments from participant</td>
</tr>
<tr>
<td>Section/question tested</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Cover page</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
</tr>
<tr>
<td>General comments from participant</td>
</tr>
<tr>
<td>Section/question tested</td>
</tr>
<tr>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Cover page</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
</tr>
<tr>
<td>General comments from participant</td>
</tr>
<tr>
<td>Section/question tested</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Cover page</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
</tr>
<tr>
<td><strong>Interviewer probe question:</strong> What do you think about the response scale (7 options)?</td>
</tr>
<tr>
<td><strong>Participant answered:</strong> It is fine. No need to narrow it down, I actually liked having the slightly/strongly prefer options</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
</tr>
<tr>
<td>General comments from participant</td>
</tr>
</tbody>
</table>
**Cognitive interviews round three**

### Participant 11

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>9 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>Participant did not have any comments or suggestions</td>
</tr>
</tbody>
</table>

### Participant 12

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The layout changes completely to very uneven grid boxes which I found very confusing until I adjusted my thinking.</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The layout changes similar to question 6</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>12 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>“I appreciate that these are a different style of questions i.e. a grading the responses but the capture of the responses could be done using the format of the other questions.”</td>
</tr>
</tbody>
</table>
### Participant 13

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>10-15 minutes</td>
</tr>
</tbody>
</table>

**General comments from participant**

“I looked through the questions and found them to be simple to understand. The language used should be understandable by all”.

### Participant 14

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>6 minutes</td>
</tr>
</tbody>
</table>

**General comments from participant**

“I really think it is going to be difficult for pharmacies/pharmacists to raise their profile so they take some of the weight off GP’s but they certainly need better facilities in terms of interview rooms etc. because at present many only have a curtain which is not very private. Hope this helps”.
### Participant 15

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>17 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>“The questions were clear and the alternatives were logical. Many people are very concerned about confidentiality and may need to be reassured that their conversations with a pharmacist or other staff will remain private. Many people are concerned about confidentiality and maybe reluctant to disclose medical conditions to a non-pharmacist member of staff. If people were reminded that staff at pharmacies are governed by the same rules of confidentiality as GP receptionist etc. they may be reassured”.</td>
</tr>
</tbody>
</table>

### Participant 16

<table>
<thead>
<tr>
<th>Section/question tested</th>
<th>Comments/remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover page</td>
<td>The participant found the cover page to be clear</td>
</tr>
<tr>
<td>Use of pharmacy services (Q1-5)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Preference for using services at pharmacy or GP (Q6)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Pharmacy features (Q7)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Ways of hearing about pharmacy (Q8)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Demographic questions (Q 9-11)</td>
<td>The participant found this section to be clear</td>
</tr>
<tr>
<td>Time taken to complete the survey</td>
<td>10 minutes</td>
</tr>
<tr>
<td>General comments from participant</td>
<td>“I found it easy to read, each question was explained and easy to answer. Thought it was very straightforward”.</td>
</tr>
</tbody>
</table>
Appendix 8.0: Study Three - Patient Invite Letter

Ms PATIENT
ADDRESS
Manchester
MI POSTCODE
DATE

Patient Views of Using Community Pharmacy Services

Dear [PATIENT]

Your doctors and nurses are working with The University of Manchester to find out more about the use of community pharmacy (chemist) services for patients with long-term conditions. This study is part of a student PhD project. Mr. Ali Hindi (PhD student) at the University of Manchester wants to understand what would influence people like you, who have long term conditions such as asthma/COPD, to use community pharmacies more regularly.

We are writing to you to ask if you would take part in this research study. Before you decide it is important for you to understand why the research is being done and what it will involve.

Please take time to read the enclosed information carefully and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information, please feel free to contact the research team:

- Mr. Ali Hindi     Tel: 0161 275 7944     Email: ali.hindi@manchester.ac.uk
- Prof. Ellen Schafheutle     Tel: 0161 275 7493     Email: ellen.schafheutle@manchester.ac.uk
- Dr. Sally Jacobs     Tel: 0161 306 0602     Email: sally.jacobs@manchester.ac.uk

Take time to decide whether or not you wish to take part.

Yours sincerely

Dr
General Practitioner
ADDRESS
Appendix 9.0: Study Three - Participant Information Sheet

Patient Views of Using Community Pharmacy ('chemist') Services

Participant Information Sheet (PIS)

This information sheet should be read in conjunction with The University privacy notice.

You are being invited to take part in a research study. This is part of a student PhD project investigating the awareness, demand and use of community pharmacy (chemist) services for people with long-term conditions. Before you decide whether to take part, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for taking the time to read this.

Who will conduct the research?

This research will be conducted by Mr Ali Hindi (PhD student), who is supervised by Professor Ellen Schafheutle and Dr Sally Jacobs, all based at the Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry; School of Health Sciences at The University of Manchester, Oxford Road, Manchester M13 9PT, United Kingdom.

What is the purpose of the research?

Patients with long-term conditions such as asthma/COPD have many healthcare needs that need help and support from healthcare professionals. This study aims to find out what would influence people with long-term conditions to use community pharmacy services more often than they currently do.

Why have I been chosen?

For this study, we are interested in people who suffer from long-term conditions affecting their breathing, such as asthma or chronic obstructive pulmonary diseases (COPD). You have been identified as a patient with asthma/COPD by your GP practice.

What would I be asked to do if I took part?

Taking part in the study simply means filling out a questionnaire which asks about your current use of community pharmacy, which services you would prefer to get from your pharmacy or from your GP, and what might make you more likely to use community pharmacy instead of your GP. The questionnaire should only take you 10-15 minutes to complete. This information will be useful to understand how community pharmacies could be improved to meet some of your needs and reduce pressure on GP practices. Once completed, we ask you to post the questionnaire directly back to the researcher, using the freepost envelope provided. If you agree, you do not have to do anything else.
What will happen to my personal information?

We will not collect any personal information/data about you. Only your GP practice will have access to your personal information (i.e. your name and address), which they used to identify you and to post this questionnaire to you. We, the research team, will not have access to any personal information about you, other than that which you share with us in the questionnaire. Study research data and material may be looked at by authorised individuals from the University of Manchester or regulatory authorities, to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant. Your study data will not be transferred outside the University. All information related to this study will be kept in storage at The University of Manchester for 5 years (in line with good practice guidelines for research) and then confidentially destroyed.

We are collecting and storing this personal information in accordance with the General Data Protection Regulation (GDPR) and Data Protection Act 2018 which legislate to protect your personal information. The legal basis upon which we are using your personal information is “public interest task” and “for research purposes” if sensitive information is collected. For more information about the way we process your personal information and comply with data protection law please see our Privacy Notice for Research Participants.

The University of Manchester, as Data Controller for this project, takes responsibility for the protection of the personal information that this study is collecting about you. In order to comply with the legal obligations to protect your personal data the University has safeguards in place such as policies and procedures. All researchers are appropriately trained and your data will be looked after.

Will my participation in the study be confidential?

All information about you will be handled in the strictest confidence. Nothing you tell us in the questionnaire can be traced back to you. We will not know who has taken part in the study. Your participation in the study will be kept confidential to those with access to your personal information as listed above. We will not be sharing any information you give us with your GP or their practice team. Your questionnaire will be assigned an ID number only so that we can help your GP surgery identify those who haven’t responded and ask them to send out a reminder. The Link between your identifiable data and study ID will be held at your GP surgery and deleted as soon as the reminders have been sent out (approximately 2 weeks after receiving the questionnaire).

What happens if I do not want to take part?

It is up to you to decide whether or not to take part. If you do not wish to complete the survey at any point in the study, you are free not to do so. You will need to contact the practice if you wish to withdraw. Your decision whether or not to take part in this study will not affect the care you are receiving now or in the future. However, your data cannot be removed once the questionnaire has been completed and posted to the research team (approximately 2 weeks after receiving the questionnaire).

Will my data be used for future research?

When you agree to take part in this research study, the information on your questionnaire may be provided to researchers running similar and relevant research studies in this organisation. Your information will only be used by researchers to conduct research in accordance with the UK Policy Framework for Health and Social Care Research.
This information will not identify you and will not be combined with other information in a way that could identify you. The information will only be used for the purpose of health and care research, and cannot be used to contact you regarding any other matter or to affect your care. It will not be used to make decisions about future services available to you.

**Will the outcomes of the research be published?**

The findings of this study are expected to be published in peer reviewed academic journals, conference presentations and the researcher’s PhD thesis. Once completed, **you will be able to find a summary of the findings from this study results** on the Centre for Pharmacy Workforce Studies website (http://research.bmh.manchester.ac.uk/cpws/index.aspx). The results are expected to be posted on the website by August 2019.

**Who has reviewed the research project?**

This study has been reviewed by the National Health Service Research Ethics Committee (REC ref).

**What if I want to make a complaint?**

If there are any issues regarding this research please use the contact details below.

**Minor complaints**

If you have a minor complaint then you need to contact the researcher(s) in the first instance.

- **Mr. Ali Hindi**  **Tel: 0161 275 7944**  **Email:** ali.hindi@manchester.ac.uk

- **Prof. Ellen Schafheutle**  **Tel: 0161 275 7493**  **Email:** ellen.schafheutle@manchester.ac.uk

- **Dr. Sally Jacobs**  **Tel: 0161 306 0602**  **Email:** sally.jacobs@manchester.ac.uk

**Formal Complaints**

If you wish to make a formal complaint or if you are not satisfied with the response you have gained from the researchers in the first instance then please contact

- The Research Governance and Integrity Manager, Research Office, Christie Building, University of Manchester, Oxford Road, Manchester, M13 9PL, by emailing: research.complaints@manchester.ac.uk or by telephoning 0161 275 2674.

- The Patient Advice and Liaison Service - PALS, by emailing: pals@cmft.nhs.uk or by telephoning 0161 276 8686
What Do I Do Now?

If you wish to participate in the study all you need to do is complete the questionnaire and post it back to us using the freepost envelope provided. If you have any queries about the study then please contact:

- Mr. Ali Hindi  
  Tel: 0161 275 7944  
  Email: ali.hindi@manchester.ac.uk

This project has been approved by the University of Manchester’s Research Ethics Committee and Leicester South REC [18/EM/0372]
Appendix 10.0: Study Two - Ethics Approvals

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

21 November 2017

Dr Ellen L. Schafheutle
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry, School of Health Sciences
Faculty of Biology, Medicine and Health
The University of Manchester
1st Floor Stopford Building
Oxford Road
Manchester
M13 9PT

Dear Dr Schafheutle

Study title: A study of awareness, demand and use of community pharmacy services for people with long-term conditions: views of patients, pharmacists and GPs

REC reference: 17/NE/0371
IRAS project ID: 228705

The Proportionate Review Sub-committee of the North East - York Research Ethics Committee reviewed the above application on 17 November 2017.
Dr Ellen L. Schaffeutle  
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry, School of Health Sciences  
Faculty of Biology, Medicine and Health,  
The University of Manchester,  
1st Floor St John’s Building,  
Oxford Road, Manchester,  
United Kingdom  
M13 9PT

14 December 2017

Dear Dr Schaffeutle

Letter of HRA Approval

Study title: A study of awareness, demand and use of community pharmacy services for people with long-term conditions: views of patients, pharmacists and GPs
IRAS project ID: 228705
REC reference: 17/NE/0371
Sponsor: University of Manchester

I am pleased to confirm that HRA Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England
The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. Please read Appendix B carefully, in particular the following sections:

- Participating NHS organisations in England – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities.
- Confirmation of capacity and capability – this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria) - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.
Appendix 11.0: Study Three - Ethics Approvals

East Midlands - Leicester South Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 1PS

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

15 November 2018

Professor Ellen L. Schafheutle
Centre for Pharmacy Workforce Studies, Division of Pharmacy and Optometry, School of Health Sciences
Faculty of Biology, Medicine and Health, The University of Manchester, 1st Floor Stopford Building, Oxford Road, Manchester, United Kingdom
M13 9PT

Dear Professor Schafheutle

Study title: How do patients with respiratory conditions view the use of community pharmacy services for long term conditions?

REC reference: 18/EM/0372
Protocol number: NHS001471
IRAS project ID: 254568

Thank you for your letter of 12/11/2018, responding to the Proportionate Review Sub-Committee’s request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact please contact hra.studynote@nhs.net outlining the reasons for your request.

385
15 November 2018

Dear Professor Schafheutte,

Study title: How do patients with respiratory conditions view the use of community pharmacy services for long-term conditions?

IRAS project ID: 254568
Protocol number: NHS001471
REC reference: 18/EM/0372
Sponsor: University of Manchester

I am pleased to confirm that HRA and Health and Care Research Wales (HCRW) Approval has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

How should I continue to work with participating NHS organisations in England and Wales? You should now provide a copy of this letter to all participating NHS organisations in England and Wales, as well as any documentation that has been updated as a result of the assessment.

Following the arranging of capacity and capability, participating NHS organisations should formally confirm their capacity and capability to undertake the study. How this will be confirmed is detailed in the “summary of assessment” section towards the end of this letter.

You should provide, if you have not already done so, detailed instructions to each organisation as to how you will notify them that research activities may commence at site following their confirmation of capacity and capability (e.g. provision by you of a ‘green light’ email, formal notification following site
Appendix 12.0: Study Three – Full Regression Tables

Table A-1: Univariable and multivariable logistic regressions of respondents’ service preference for community pharmacy over GP services

<table>
<thead>
<tr>
<th>Respondent characteristics</th>
<th>Univariable model</th>
<th>Multivariable model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β coefficient (95% CI)</td>
<td>P value</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td>(reference: 1.000)</td>
<td>0.166</td>
</tr>
<tr>
<td>COPD</td>
<td>-0.95 (-3.93, 0.68)</td>
<td>0.00 (-2.40, 2.35)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>(reference: 1.000)</td>
<td>0.013</td>
</tr>
<tr>
<td>Female</td>
<td>0.16 (0.61, 5.02)</td>
<td></td>
</tr>
<tr>
<td><strong>Range of pharmacies used</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use different pharmacies</td>
<td>(reference: 1.000)</td>
<td>&gt;0.200(^a)</td>
</tr>
<tr>
<td>Use the same pharmacy</td>
<td>0.62 (-1.62, 4.70)</td>
<td></td>
</tr>
<tr>
<td><strong>Service usage at pharmacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only use pharmacy for medication supply</td>
<td>(reference: 1.000)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Use pharmacy for other services</td>
<td>0.23 (1.86, 6.10)</td>
<td></td>
</tr>
<tr>
<td><strong>Age group (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 65 years of age</td>
<td>(reference: 1.000)</td>
<td>0.008</td>
</tr>
<tr>
<td>&lt; 65 years of age</td>
<td>0.17 (0.77, 4.99)</td>
<td></td>
</tr>
<tr>
<td><strong>Frequency of pharmacy use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrequent</td>
<td>(reference: 1.000)</td>
<td>0.056</td>
</tr>
<tr>
<td>Frequent</td>
<td>0.12 (-0.55, 4.56)</td>
<td></td>
</tr>
</tbody>
</table>

CI, Confidence interval; NS, Non-significant

\( a\): Independent variables that had a univariable association with service preference for community pharmacy over GP services, resulting in \( p > 0.2\), were not included in the multivariable analyses

\( b\): Variables with \( p < 0.05\) were included in the final regression model (Chapter Eight)
Table A-2: Univariable and multivariable binary logistic regressions of respondents’ likelihood to use community pharmacy

<table>
<thead>
<tr>
<th>Respondent characteristics</th>
<th>Univariable model</th>
<th>Multivariable model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds ratio (95% CI)</td>
<td>P value</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma (reference: 1.000)</td>
<td>0.199</td>
<td>NS</td>
</tr>
<tr>
<td>COPD</td>
<td>0.71 (0.41, 1.20)</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (reference: 1.000)</td>
<td>0.175</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>1.42 (0.86, 2.34)</td>
<td>1.14</td>
</tr>
<tr>
<td><strong>Range of pharmacies used</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use different pharmacies (reference: 1.000)</td>
<td>&gt;0.200</td>
<td></td>
</tr>
<tr>
<td>Use the same pharmacy</td>
<td>1.20 (0.61, 2.40)</td>
<td></td>
</tr>
<tr>
<td><strong>Service usage at pharmacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only use pharmacy for medication supply (reference: 1.000)</td>
<td>0.009</td>
<td>0.016</td>
</tr>
<tr>
<td>Use pharmacy for other services</td>
<td>1.95 (1.19, 3.22)</td>
<td>1.94</td>
</tr>
<tr>
<td><strong>Age group (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 65 years of age (reference: 1.000)</td>
<td>0.097</td>
<td>NS</td>
</tr>
<tr>
<td>&lt;65 years of age</td>
<td>1.51 (0.93, 2.45)</td>
<td>1.48</td>
</tr>
<tr>
<td><strong>Frequency of pharmacy use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrequent (reference: 1.000)</td>
<td>&gt;0.200</td>
<td></td>
</tr>
<tr>
<td>Frequent</td>
<td>1.00 (0.59, 1.71)</td>
<td></td>
</tr>
</tbody>
</table>

CI, confidence interval; NS, Non-significant

*a: Independent variables that had a univariable association with likelihood to use community pharmacy, resulting in p >0.2, were not included in the multivariable analyses

*b: Variables with p <0.05 were included in the final regression model (Chapter Eight)
Sixty-seven respondents provided comments which were thematically analysed. Two themes emerged from the analysis which were: “current issues with using community pharmacy for long-term conditions” and “requirements for using community pharmacy for long-term conditions”.

**Current issues with using community pharmacy for long-term conditions**

Respondents commented on current difficulties for using community pharmacy for management of their long-term conditions. Respondents mentioned community pharmacies having limited size, long waiting times and pharmacy staff who were tied to dispensing duties.

“I don’t believe that pharmacies could cope with the added work responsibility. My pharmacy is very very busy that is so small and have dedicated staff that only seem to cope with the dispensing of medications. I cannot see patients using the service as already there is a negativity on waiting times for prescriptions when in store.”

Some of the respondents mentioned they would continue to use GP practices instead of community pharmacies as they had a strong relationship with GP practice staff which was deemed absent with community pharmacy staff. Moreover, some patients had negative experiences with pharmacists criticising their interpersonal skills.

“Tend to stay with the GPs as they know more about me, pharmacies are ok if you find a decent one”

“I have been embarrassed by pharmacy staff giving knowing smirks and grins when handing me prescriptions. Such people are fine for stacking shelves but not with sensitive information”
A few housebound respondents mentioned that community pharmacy services are inaccessible to them highlighting the importance of practice nurses who visited their homes.

“The COPD unit nurses are excellent and relieve my GP of the necessity to see or prescribe for me. A pharmacy cannot come to visit me when ill as they do”

Requirements for using community pharmacy for long-term conditions

Respondents commented on factors which would influence them to use community pharmacy services for their long-term conditions. Ideally, respondents wanted to have earlier appointments at community pharmacies than their GP practices and spend more time discussing any issues about their medications and condition.

“I would hope to get seen earlier than I do at my doctors surgery and spend a bit more time to explain any questions I have on meds I take”

“Would be beneficial to visit a chemist opposed to waiting a long time for GP’s appointment for existing conditions and/or minor ailments”

Some respondents wanted their pharmacists to access essential information on their medical records and be able to prescribe medications. Respondents also wanted community pharmacy services to be recorded on their medical record to reduce miscommunication between pharmacists and GPs. A few respondents wanted to be reassured pharmacy staff could provide services to similar standards as healthcare providers in their GP practice.

“If pharmacists has access to list of current meds/allergies etc. and could prescribe-limited-additions, it would be easier than trying to get an appointment at the doctors surgery even to see "the asthma nurse."

“I would feel much more inclined to use my pharmacy for issues relating to my breathing condition If I was sure that all matters would be available on record to my GP, in order to avoid confusion/repetition of advice”
Respondents who were positive about using community pharmacy services commented on their relationships with pharmacy staff and praised their pharmacy teams’ communication skills.

“I use my local pharmacy all the time, they know all of my family very well. They have always been so friendly and go above and beyond to help everyone who goes to their chemist.”
Appendix 14.0: Poster Presentation at The 2018 Division of Pharmacy and Optometry Showcase
THE UNIVERSITY OF MANCHESTER
Division of Pharmacy and Optometry
Postgraduate Research Showcase 2018

Award for Poster Presentation
Second Place
is awarded to

Ali Hindi

20th & 21st September 2018, at Manchester

Victoria Rimmer and Jack Lownes
Showcase Committee Co-Chairs

Professor Jayne Lawrence
Head of Division

Dr. Douglas Steinke
Division Senior Tutor