"Investigating the value of the community pharmacy Medicines Use Review (MUR) service"

A thesis submitted in partial fulfilment of the degree

of

Doctor of Philosophy

at

KINGSTON UNIVERSITY LONDON

BY

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IN COLLABORATION WITH BOOTS UK LTD.

APRIL 2014

Dedicated to my Family

DECLARATION

This thesis entitled "Investigating the value of the community pharmacy Medicines Use Review (MUR) service" is based upon the work conducted by the author in the School of Pharmacy and Chemistry at Kingston University London. All of the work described here is original unless otherwise acknowledged in the text or by references. None of the work has been submitted for another degree in this or any other university.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
ARC	Antiretroviral Regimen Complexity
BMA	British Medical Association
BNF	British National Formulary
COPD	Chronic Obstructive Pulmonary Disease
CSM	Committee on Safety of Medicines
CPPQ	Community pharmacy patient questionnaire
DH	Department of Health
EMTCI	Epilepsy Medication and Treatment Complexity Index
GMC	General Medical Council
GP	General Practitioner
GPhC	General Pharmaceutical Council
IPA	Interpretative Phenomenological Analysis
LPC	Local Pharmaceutical Committee
MCI	Medication Complexity Index
MHRA	Medicines Healthcare products Regulatory Agency
MRC	Medical Research Council
MRCI	Medication Regimen Complexity Score
MUR	Medicines Use Review
MURCI	Medicines Use Review Complexity Index
NHS	National Health Service
NPA	National Pharmacy Association
NPC	National Prescribing Centre
NSMC	National Social Marketing Centre
OTC	Over the counter
PASW	Predictive Analytics Software
PCO	Primary Care Organisation
PCPA	Primary Care Pharmacists' Association
PCT	Primary Care Trust
PI	Prescription Intervention
PIL	Patient information leaflet

PMR	Patient medication record
PROM	Patient reported outcome measure
PSNC	Pharmaceutical Services Negotiating Committee
PSPC	Patient satisfaction with pharmaceutical care
PSQ	Patient Satisfaction Questionnaire
QOF	Quality and outcomes framework
RCT	Randomised Controlled Trial
RPSGB	Royal Pharmaceutical Society of Great Britain
SHA	Strategic Health Authority
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation

ACKNOWLEDGEMENTS

ABSTRACT

The Medicines Use Review (MUR) service was introduced in the UK in 2005 to improve patients' knowledge and use of medicines. The service, in essence, engages the patient and the pharmacist in a structured, private conversation about the patient's medicines. Pharmacies are permitted to deliver a limited number of annual MURs yet for a number of years service provision remained low. During the period of this investigation, the service attracted substantial controversy. In 2008 the UK Government called for improvements to be made to the 'quality' of service provision, with measurement of tangible patient outcomes a key concern. This thesis set out to investigate the potential value of the MUR service.

First, using discourse analysis, this thesis considered the social construction of the MUR through written marketing material and its potential impact on uptake of the service, making suggestions for future situations. Next, based on a retrospective cross-sectional audit of MUR records, a practical tool for selecting patients who might benefit from an MUR consultation was developed and explained. Auditing MUR records was suggested by others as one way of tackling questions around service 'quality'. However, the cross-sectional audit suggested that such records were inadequate for assessing service quality and it is argued that quality measures should be based on the achievement of intended service outcomes.

Finally, and relating to patient outcomes, this thesis includes a qualitative investigation of patients' MUR experiences, particularly patient satisfaction, as a measure of quality. In the absence of existing patient satisfaction questionnaires measuring the true dynamics of the MUR interaction, a novel conceptual framework for measuring patient satisfaction with this service was developed and is put forward.

The results contained herein can contribute to the development of an intervention for measuring the benefits of the MUR versus usual care in terms of patient outcomes.

CHAPTER 1 : GENERAL INTRODUCTION

1.1 Long-term medical conditions

The only thing that remains constant is change (Heraclitus circa 500 BC). This statement is particularly true of the United Kingdom's (UK's) National Health Service (NHS), which celebrated its 60th birthday in 2008 when the work in this thesis was in progress. The NHS was founded on the principle that good health care should be available to everyone at the point of use regardless of their wealth (NHS, 2008a). This belief remains at the core of the NHS, but succeeding governments have faced major challenges in balancing the needs of the patient population with the financial cost of providing a free health service (DH: Department of Health, 2000; Appleby, Crawford and Emmerson, 2009). A particular problem arises because of chronic health conditions, which require long-term care.

To manage health and to continue providing a free service means that health care in the UK is highly politicised, and healthcare reforms are an ongoing process. The most recent reforms mentioned the management of long-term medical conditions as one of its core aspects (DH, 2010a). In April 2005 (DH, 2005a) the way in which services for patients with long-term medical conditions in England and Wales were managed was overhauled. Those reforms led to the introduction of a community pharmacy-based Medicines Use Review (MUR) service, which set out to involve pharmacists in the care and management of patients with long-term medical conditions. The MUR service is the focus of this thesis. The service was based on the premise that patients could be supported to better manage their medication through a consultation with a pharmacist. This chapter outlines ongoing problems with the management of long-term medical conditions with medication and with medicine-taking, before moving on to describe the MUR, its delivery and external evaluations of the service. The chapter concludes by outlining the aims of this thesis and its layout.

1.2 The involvement of pharmacists in managing long-term medical conditions

From a total population of 52 million (Office for National Statistics, 2011), there were 15.4 million (29.6%) people in England with one or more long-term medical condition(s) in 2010 (DH, 2010b). Long-term conditions, also known as chronic diseases, include diabetes, cancer, heart disease, stroke and chronic respiratory diseases. The World Health Organisation (WHO) defines these conditions as "diseases of long duration and generally slow progression" (WHO, 2012). Long-term medical conditions are the leading cause of mortality in the world, representing 63% of all deaths (WHO, 2012). These conditions cannot currently be cured (DH, 2010b), but are controlled by medication and/or other therapies on a long-term basis.

In the UK, one of the ways in which medicines for long-term conditions are prescribed is via 'repeat prescriptions'. This process allows a patient to request their long-term medication without the need for a face-to-face appointment with a general practitioner (GP), who reviews the request and signs the computer-generated prescription if it is deemed correct. The prescription can then be collected by the patient or their representative and dispensed at a pharmacy chosen by the patient. In 1996 Harris and Dajda found that repeat prescribing already accounted for 75% of all prescription items. Although repeat prescriptions are an efficient way of managing access to prescriptions for medication required for chronic diseases, and saving GP's time (NHS Local, 2012), they also pose a problem because patients receive their medication without a consultation with the GP (Zermansky et al., 2001). It may therefore not be possible to adequately assess the appropriateness and effectiveness of every medicine on the repeat prescription and to determine whether it is tolerated by the patient or taken as intended (De Smet and Dautzenberg, 2004).

Despite efforts to ensure a continuous supply of medication for people with long-term conditions, these patients are likely to have a lower quality of life compared to patients without chronic diseases (DH, 2010c). This is because these patients are often faced with ongoing physical symptoms, including pain or discomfort, the need to take regular medication, balancing the management of their condition with their

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usual activities and even anxiety or depression (National Institute for Health and Clinical Excellence[1], 2012). A report commissioned by the Royal Pharmaceutical Society of Great Britain (RPSGB)[2] and Webstar Health suggested that the quality of life of people with long-term conditions could substantially improve if they were helped to manage their condition(s) better (Blenkinsopp and Celino, 2006). One of the ways in which these patients could be supported is through better use of services provided by pharmacies.

Community pharmacy has several strengths to support the health needs of those with long-term conditions, including its accessibility and acceptability to patients, patients' confidence in pharmacists' skills and their willingness to become involved in the management of long-term conditions and the cost-effective provision of these services (DH, 2005a; Blenkinsopp and Celino, 2006; PSNC: Pharmaceutical Services Negotiating Committee, 2010a). Community pharmacists dispensed an average of more than 70 million prescription items each month in 2009/2010 (NHS Business Services Authority, 2010), an increase of 67.2% compared to 1999 (The Information Centre for Health and Social Care, 2010). This was equivalent to an average of more than 17 items per head of the population in 2009. Although these statistics only provide information on the number of items dispensed, with no indication of whether patients are indeed taking these medicines or taking them according to the prescribers' intentions, they also give testament to community pharmacies' involvement in the provision of medication to patients, including those with long-term medical conditions.

In fact, in terms of the care of patients with long-term medical conditions, the major part of the daily work of the community pharmacist involves the dispensing of prescription items, including repeat prescription items, and providing, and counselling on, over the counter (OTC) medicines. It could be argued that pharmacists have always had the capacity to advise patients on matters relating to their medications, including discussions associated with whether or not the patient

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[1] In April 2013 NICE became the National Institute for Health and Care Excellence, a Non Departmental Public Body also responsible for developing guidance and quality standards in social care.
[2] The RPSGB was the professional and regulating body for pharmacists in the UK until 2010 when these roles were separated to form the General Pharmaceutical Council (GPhC) (the regulating body) and the Royal Pharmaceutical Society (RPS) (the professional body).

was taking the medication as intended by the prescriber. However, up until the introduction of the new community pharmacy contractual framework in 2005 (DH, 2005a) there was no formal requirement for these discussions to take place. Dispensing was therefore at the forefront of the pharmacists' contractual responsibilities and medicine-taking was assumed to be the responsibility of the patient. But, the full or intended benefit of many effective medications will only be achieved if patients follow the prescribed regimen (WHO, 2003) and therefore the important concept of adherence to prescribed medication regimes is considered below.

1.3   *Adherence to medication regimens*

"The extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen" is encompassed by the term medication compliance (Cramer *et al*, 2008, p.44). Adherence is similarly defined as "the extent to which a patient's behaviour corresponds with agreed recommendations from a healthcare provider" (WHO, 2003). Lack of adherence, or non-compliance, is a worldwide problem (WHO, 2003) with adherence rates to medication regimens among those with long-term conditions typically lower than those with acute conditions due to the long-term nature of treatment (Osterberg and Blaschke, 2005). It has been estimated that only 50% of medicines for long-term conditions are being taken as prescribed (Haynes, McDonald and Garg, 2002; WHO, 2003; DH, 2005a; Horne *et al.*, 2005). The consequences of non-adherence are far-reaching and may include increased hospital admissions, reduced clinical and pharmacological benefit and increased healthcare costs (DiMatteo *et al.*, 2002; Sokol *et al.*, 2005). But it has been suggested that more effective adherence interventions could have a greater impact on the population's health than improvements in specific medical treatments (WHO, 2003).

Improving adherence to a medication regimen requires consideration of all the possible causes of non-adherence (Osterberg and Blaschke, 2005). Many potential barriers to adherence have been described in the literature. These include patient, environmental or contextual factors, factors relating to the clinician or the patient-

clinician relationship, disease factors, healthcare delivery factors and treatment regimen factors (Burke *et al.*, 1997; Ickovics and Meisler, 1997; Osterberg and Blaschke, 2005; Haynes *et al.*, 2008; Ingersoll and Cohen, 2008). The factors that may affect adherence have been classified as modifiable and non-modifiable factors (Iskedjian *et al.*, 2002) while adherence has been described as intentional or unintentional based on the key contributing issue (Horne, 2006; NPC: National Prescribing Centre, 2007; Nunes *et al.*, 2009). Horne (2006) further linked the inefficacy of previous adherence interventions to their lack of patient-centredness (this concept is explored in more detail in Chapter 2). According to Horne (2006) intentional non-adherence can only be tackled by taking account of each individual patient's perceptual barriers, including their beliefs, attitudes and expectations.

Patients' beliefs have been shown to play a major role in determining their adherence to prescribed medication regimens (Horne, 1999; Horne and Weinman, 1999; Taylor *et al.*, 2003; Aikens *et al.*, 2005; Grunfeld *et al.*, 2005; Aikens and Piette, 2009; Joseph *et al.*, 2010) and these beliefs can relate to a number of categories of ideas. Thus the term concordance has emerged as a result of the recognition of the patient's role as partner in the decision-making process about their health and treatment (Taylor, Nettleton and Harding, 2003). The definition of concordance has changed over time from initially focussing on agreement between the doctor and patient regarding therapeutic decisions during the consultation process to a much wider concept encompassing not only communication but also supporting patients in medicine-taking (Horne *et al.*, 2005). Concordance has further been described as a means of tackling patients' misplaced beliefs in an attempt to improve adherence to medication regimens (RPSGB, 1997a; Horne, 2001; Horne *et al.*, 2005). In addition to adherence, the term "persistence" is being used to address the treatment continuum or "the duration of time from initiation of therapy to discontinuation of therapy" (Cramer *et al.*, 2008).

Healthcare professionals could address a number of causes of non-adherence and arguably community pharmacists are uniquely positioned to educate patients on the importance of adherence to medication regimens as well as persistence with treatment. Community pharmacists' potential for greater involvement in patient care, and in particular addressing issues with medication adherence, was recognised by

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policy makers. Subsequently the Department of Health's (DH's) intention to revise the community pharmacy contract and pharmacists' role in helping people get the best from their medicines was announced in *Pharmacy in the Future – implementing the NHS Plan* (DH, 2000). This paper was the precursor to a complete change in pharmacists' advice-giving role and the creation of new opportunities to provide greater support to people taking medicines and those with long-term conditions. In April 2005 pharmacists' advice-giving role was formalised through a new community pharmacy contractual framework which promised real potential impact on patients in terms of their medicine-taking behaviour. This was because for the first time pharmacists would be formally contracted, and remunerated, to provide advice to address medication adherence through activities such as the newly introduced MUR service rather than be involved in the mere dispensing of medicines. The next section describes the new contract that enabled the administration of the MUR through community pharmacies.

1.4   A new community pharmacy contractual framework

The DH, the Pharmaceutical Services Negotiating Committee (PSNC) and the NHS Confederation negotiated a new community pharmacy contractual framework which was implemented in England and Wales on 1st April 2005 (DH, 2005a). The framework consisted of three tiers of services namely essential, enhanced and advanced services.

The essential services tier initially consisted of seven services[3] that had to be offered by all community pharmacy contractors. These included dispensing of medicines, repeat dispensing, waste management, promotion of healthy lifestyles (public health), signposting, support for self-care and clinical governance (PSNC, 2010b).

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[3] Additional essential service requirements linked to the supply of appliances were introduced in April 2010.

Enhanced services[4] were to be commissioned by Primary Care Trusts[5] (PCTs) based on the local health needs of the population they served as their responsibilities already included managing primary care services in their local area. Services in the advanced services tier could be provided by any community pharmacy contractor provided that they met the requirements set out in the Secretary of State Directions (PSNC, 2010c). In 2005, when the new community pharmacy contract was implemented, the advanced services tier only consisted of the MUR and Prescription Intervention (PI) Service, collectively known as the MUR service[6] (PSNC, 2010d). The difference between an MUR and a PI is what prompts the review as a PI would be triggered in response to a significant problem with a patient's medication identified during the dispensing process. The MUR on the other hand could be carried out on any patient eligible for the service (PSNC, 2010e) (see section 1.5.1 for more detail). The MUR was specifically developed for patients on multiple medicines and those with long-term conditions.

1.5 The Medicines Use Review (MUR) service

The MUR service must be carried out in accordance with the most up-to-date version of The Pharmaceutical Services (Advanced and Enhanced Services) (England) Directions (hereafter referred to as The Pharmaceutical Services Directions) which provide the regulatory framework for the MUR service. The most recent version of the Directions came into force on 1st April 2013 (The Pharmaceutical Services Directions, 2013). These requirements are summarised in the MUR service specification (PSNC, 2004; PSNC and NHS Employers 2013) of which the most recent version was published in August 2013 (see Appendix 1.1 for detail of the 2004 and 2013 MUR service specifications).

This section provides an overview of the MUR service based on the Directions that were in place when the research was conducted (The Pharmaceutical Services Directions, 2005, 2007), including requirements for the provision of the MUR service,

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[4] In April 2013 enhanced services became known as locally commissioned pharmacy services.
[5] Due to changes brought about by the Health and Social Care Act 2012, PCTs and Strategic Health Authorities (SHAs) ceased to exist on 31st March 2013 and their responsibilities were transferred to NHS England, NHS Clinical Commissioning Groups and the NHS Trust Development Authorities.
[6] In 2010 two additional advanced services were introduced namely the Appliance Use Review Service and the Stoma Appliance Customisation Service.

the MUR process, the purpose of the service and information on reimbursement. It is important to outline the MUR in this way, so as to provide the necessary background for the research outlined in this thesis.

1.5.1   Requirements for provision of the MUR service

First, pharmacies and pharmacists have to meet certain requirements before being allowed to provide the MUR service. Since April 2005, the MUR service has been available annually to patients, especially those with long-term conditions, who have been using the pharmacy for the dispensing of prescriptions for at least the previous three months.

Community pharmacy contractors can offer the MUR service to patients once they comply with certain requirements. These requirements relate to the existing provision of all essential services (see section 1.4), accreditation of pharmacists delivering the MURs, having an acceptable system of clinical governance in place and accreditation of the premises. A variety of Higher Education Institutions in England and Wales provide a range of accreditation options for pharmacists, such as web-based assessments, distance learning programmes, one-day face-to-face training courses with an assessment component, assessment-only options where pharmacists submit a portfolio of evidence or accreditation as part of a post-graduate clinical programme. All the assessments are to be carried out according to a nationally defined competency framework (NHS, 2005).

Accreditation of the premises is included as part of the MUR requirements because the service involves a private consultation between the patient and the pharmacist. This consultation has to take place in a clearly designated consultation area, distinct from general public areas of the pharmacy, where the patient and the pharmacist can sit down and talk at normal speaking volumes without being overheard. In exceptional circumstances, and with prior approval from the PCT, the MUR may also be carried out in the patient's home or, for example, over the telephone.

1.5.2   The MUR process

Second, the MUR service is required to follow the same overall process in each case. In general the MUR process involves identifying eligible patients and inviting (recruiting) them to the MUR consultation. If the patient agreed to the MUR service the consultation could take place straight away or the patient could arrange an appointment to return at a later date/time, but in all cases the patient must sign a consent form before the consultation may commence.

A written record of each MUR consultation has to be completed by the pharmacist. The initial 4-page nationally agreed MUR form (version 1), approved by the Secretary of State (see Appendix 1.2), was replaced by a newer 2-page MUR template (version 2) (see Appendix 1.3) in December 2007 after consultation with stakeholders, the DH and PSNC. The aim was to make the form more user-friendly for pharmacists, GPs and patients. This newer template, available both in hard-copy and electronic format, included an 'Overview page' with details of the patient, GP and pharmacy as well as an action plan which contained recommendations made as part of the MUR. The second page, referred to as the 'Consultation record page', included details of the name, dosage form and strength of each of the patient's medicines, including those that were prescribed, bought OTC and any complementary therapies. This page also provided space for pharmacists to answer the following questions:
- "Does the patient use the medicine as prescribed?
- Does the patient know why they are using the medicine?
- Is the formulation appropriate?
- Are side effects reported by the patient?" (DH, 2007a, p.2)

In addition, space was provided to record further details regarding information provided to the patient regarding their use of the medicines and general comments relating to advice given and side effects or other issues discussed with the patient (DH, 2007a). Another notable difference is that the question "What would the patient like to get out of the review?" which appeared on version 1 of the form, has not been included in version 2.

At the time pharmacists were required to provide a copy of the MUR paperwork to the patient and their GP. At first pharmacists were required to send a copy of the MUR form to the patient's GP for every MUR consultation conducted. Since 2007, and the introduction of the new MUR template, the notification requirements depended on whether or not there were any items within the MUR action plan that needed consideration by the patient's GP in which case the pharmacist was required to supply the GP with this information within seven days of the MUR consultation taking place. If no items required consideration by the GP it was not necessary to send them a copy of the MUR form, but the pharmacist was still required to notify the GP that an MUR consultation had taken place within a month of the MUR being conducted (DH, 2007b; PSNC, 2010f). A simplified representation of the MUR process is given in Figure 1.1.

In July 2012 newer requirements were introduced to keep records of each MUR service conducted, including using a national dataset (PSNC, 2012a), using an MUR feedback form for communication with GPs and providing quarterly reports to PCTs. However, these changes were introduced after the work contained in this thesis was carried out and are therefore not discussed here in detail.
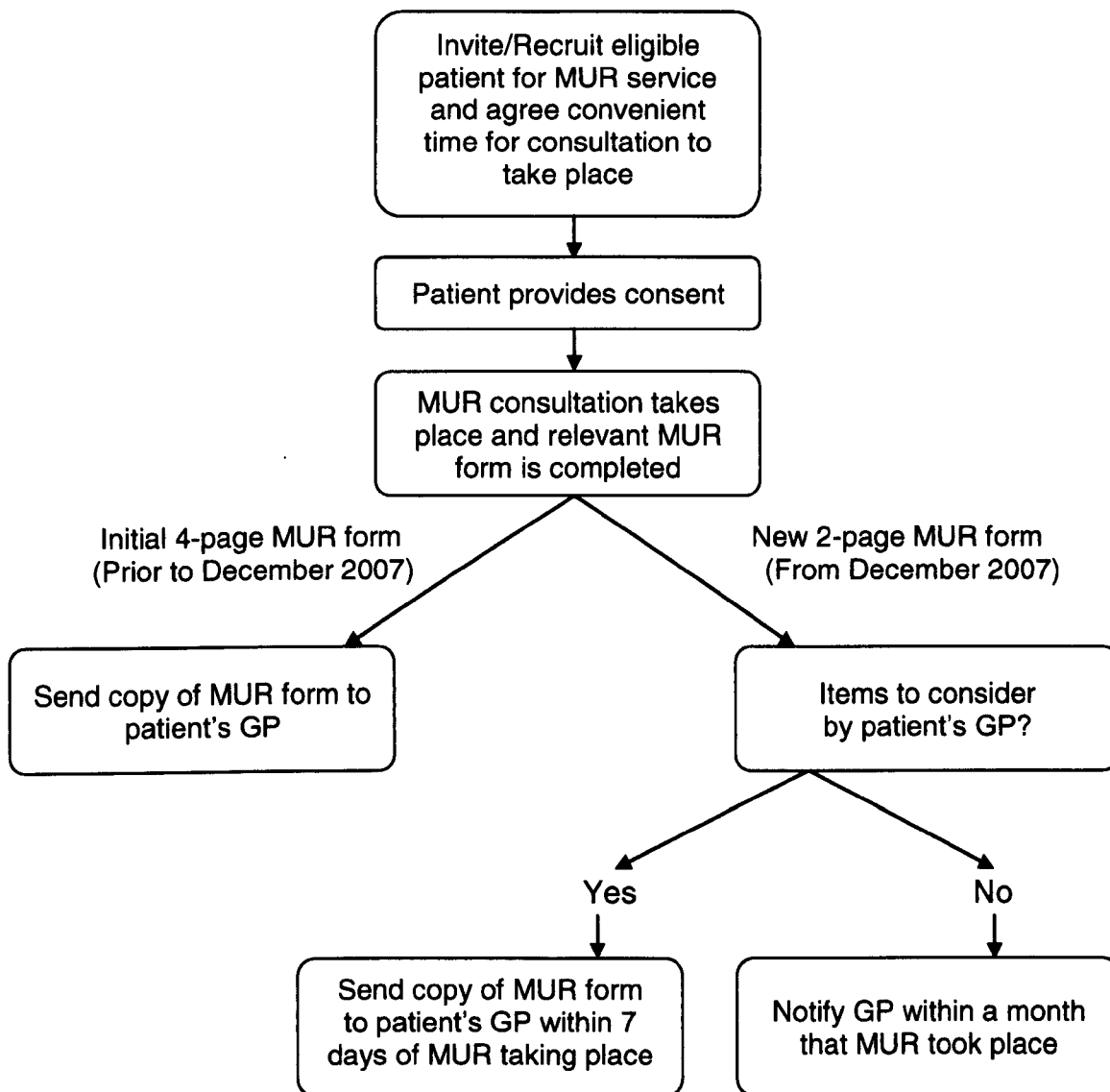
Figure 1.1 Simplified representation of the MUR process prior to July 2012

1.5.3   Purpose of the MUR

The underlying purpose of the MUR service is to improve the patient's knowledge and use of medicines through the following processes:

- "Establishing the patient's actual use, understanding and experience of taking their medicines;

- Identifying, discussing and resolving poor or ineffective use of their medicines;

- Identifying side effects and drug interactions that may affect patient compliance; and

- Improving the clinical or cost effectiveness of prescribed medicines and reducing medicine wastage." (PSNC, 2004)

The MUR needs to be differentiated from the pre-existing medication review service which is defined as a "structured, critical examination of a patient's medicines with the objective of reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication-related problems and reducing waste" (Task Force on Medicines Partnership and The National Collaborative Medicines Management Services Programme, 2002, p.12). Since the introduction of the MUR service a framework for classifying medication reviews has been published. This framework suggested a way in which hospital and other clinical reviews and the MUR by community pharmacists could be conceptualised within the medication review classification (Clyne, Blenkinsopp and Seal, 2008). The three types of medication reviews identified were:

- Type 1 – Prescription review
- Type 2 – Concordance and compliance review
- Type 3 – Clinical medication review

The proposed classification focuses on the purpose of each type of review and as such the MUR, which has been described as adherence-centred (PSNC, 2010e), is classified as a Type 2 review.

The MUR service could be considered as one mechanism through which community pharmacists can support patients with long-term medical conditions and provide input into the management of these conditions. During the MUR consultation the patient has the opportunity to discuss their condition and its treatment with the pharmacist. The pharmacist in return has the opportunity to assess the patient's use and understanding of their medicines as well as to explore and discuss any potential problems or issues relating to the patient's medicine or health in general.

Potential interventions as part of the MUR may include advice on the patient's use of medicines, tolerability and side effects, ensuring the effective use of 'when required' medication and the appropriate use of different pharmaceutical dosage forms. In addition the pharmacist may provide advice on dealing with practical problems in

ordering, taking and using medicines or focus on the identification of unwanted medicines, medicines with inadequate dosage instructions or those where a change in dosage form may be needed. The pharmacist may also propose changing branded medicines to generics or vice versa (where clinically appropriate), make proposals for dose optimisation or make suggestions to improve the clinical effectiveness of medicines (PSNC, 2004).

Even though these interventions formed part of the initial service specification for MURs (see Appendix 1.1) and the processes through which these were to be delivered were collectively defined as the 'new' community pharmacy service, it could be argued that they had individually been a part of community pharmacy for many years and were not in fact new. However, the formal reorganisation of these processes as part of the new MUR service also aided remuneration for these services as pharmacists were for the first time remunerated for taking on a formal advice-giving role in relation to people with long-term medical conditions and those on multiple medicines.

1.5.4 Reimbursement for the MUR service

When the MUR service was introduced in 2005, each MUR consultation which was delivered resulted in a payment of £23 to the pharmacy. Increases to the reimbursement were negotiated between the PSNC and the DH and reimbursement was subsequently increased to £25 per MUR in October 2006, £27 in October 2007 and since October 2008 reimbursement has been set at £28 per MUR conducted (PSNC, 2010g). Community pharmacy contractors who enter into an agreement to provide MURs before 1st October each year are reimbursed for up to 400 MURs for that year[7] and those who agree to provide MURs on or after this date can claim payment for up to 200 MURs during the relevant year.

Having described the lead-up to the introduction of the MUR service, the requirements and processes involved in delivering the service and its reimbursement, it is important to consider other research that began to take place

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[7] In April 2005 the MUR limit per pharmacy per year was set at 200 MURs. This limit was increased to 250 in January 2006 and to 400 in October 2006.

almost as soon as the MUR service was implemented. A major evaluation of the community pharmacy contract, including the MUR service, was commissioned by the Pharmacy Practice Research Trust and carried out by Blenkinsopp *et al.* (2007a). However, alongside this national evaluation, pharmacy practice researchers throughout the country took different approaches to examining the usefulness of this new community pharmacy service. Some of this research was in response to criticism to the way in which the MUR was being implemented in practice.

1.5.5   Problems with the MUR service

Not long after its introduction, the MUR service, specifically in relation to the payments for each review conducted, attracted substantial controversy and the majority of negative comments were linked to the increasing numbers of MURs delivered. The appropriateness of an MUR for certain patients was also criticised (Harding, 2007; Jenkins, 2007a; Jenkins, 2007b; Melnick, 2007). Questions were raised around the quality of MURs and pharmacists and pharmacy establishments were criticised for implementing MURs only as a way to increase revenue (Goldstein *et al.*, 2006; Anon, 2008; Wilcock and Harding, 2008; Anon 2009) with pharmacist employees reportedly feeling pressured to deliver the maximum number of MURs per year (Murphy, 2007; Bradley *et al.*, 2008; Harding and Wilcock, 2010) (also see section 3.1).

Amid questions around the value of the MUR service, there were also reports that GPs were not entirely satisfied with the pharmacy-based MUR service (Celino *et al.*, 2007; Wilcock and Harding, 2007). Much of this dissatisfaction was linked to problems in GPs not understanding the significance of the MUR and its place in patient care. This led to the publication and distribution of leaflets, specifically tailored to GPs and their practice managers, to address some of these issues and misconceptions (PSNC, 2007). In 2009 another document aiming to support GP practices in achieving the best value from the MUR service was published (NHS Employers, 2009), but the impact of these publications have not been fully investigated as yet.

Nevertheless, questions around the quality of MURs remained and at the time of the Government's White Paper *Pharmacy in England: Building on strengths – delivering the future* in 2008, a number of suggestions to remedy the perceived imbalance between quantity and quality of MURs delivered were proposed (DH, 2008a). The Paper also suggested measuring real patient outcomes as key to the successful representation of the MUR service (this will be discussed in more detail in Chapter 4). However, more than five years later, there is still limited published research focussing on the service and its outcomes. The next section will introduce and review published literature based on the MUR service.

1.5.6   Evaluations of the MUR service

Key publications which detail important features associated with the MUR service are listed in Table 1.1 below. This section provides a summary of some of these important published research papers as well as a critique of these studies based on accepted criteria for evaluating qualitative research (Long, 2002; Spencer *et al.*, 2003; Cohen and Crabtree, 2008).

Pharmacy practice research includes the application of a range of methods, including interviews, focus groups, questionnaires and different forms of audit and the application of these methods should ideally relate to the question being answered. Therefore one way in which the MUR papers are considered in this section is to examine the questions posed by the research and the methodological way in which the answers were sought. By constructing a table critiquing the studies in this way (Table 1.2), it is argued that no research to date has provided a definitive answer to whether MURs are useful, of value and effective.

Table 1.1 Relevant published research into the MUR service

Study	Population / Setting	Aim(s)	Outcomes / Results
Blenkinsopp *et al.*, 2007b	Survey of 28 Primary Care Organisations (PCOs) in England and 3 in Wales (representing a 10% stratified random sample of PCOs, pharmacy leads in strategic health authorities (SHAs) and the Welsh Assembly Government) Structured telephone interviews with SHA pharmacy leads and pharmacy leads in the Welsh Assembly Government	To measure provision of MURs in the first year of implementation of the service To investigate barriers and facilitators to uptake of the service	• Response rate to survey was 94% (although one respondent did not answer the series of questions on the implementation of advanced services, i.e. the MUR service) • The overall response rate to telephone interviews was 86% • There was a marked difference in overall provision of MURs using PCO level prescription and population statistics (32-fold difference in MURs per million prescriptions dispensed across the PCOs and 33-fold difference in MURs per 1,000 population) • Overall 38% of the community pharmacies in the PCO sample had claimed payment for providing MURs with 84% of these claimed by pharmacies from multiples • 70% of contractors claiming payment were from multiple pharmacies although the national percentage of multiple pharmacies was 57% • Only 6.8% of the potential number of MURs were delivered based on the original maximum of 200 MURs allowed per contractor per year
Bradley *et al.*, 2008	Survey of all PCOs in England (n=290 taking reconfiguration into account) 43 interviews (either face-to-face or by telephone) with10 PCO representatives, 10 local pharmaceutical committee (LPC)	To explore and identify the key determinants influencing the uptake of MURs	• Response rate to survey was 74% • Rates of MUR service provision by multiple pharmacies were almost twice that of independent pharmacies (mean 108 vs. 56 per pharmacy for the 2006-07 financial year) • Pharmacies with higher levels of prescription items dispensed were more likely to conduct MURs ($p < 0.001$) • Higher levels of deprivation and proportions of patients with limiting long-term medical conditions within the PCO were associated with significantly lower levels of MURs being undertaken ($p < 0.001$) • PCOs considered MUR training opportunities and pharmacists' motivation to be the main drivers to MUR implementation • PCOs identified lack of support from GPs, accreditation of community

	representatives and 23 community pharmacists, of which 10 were independent contractors		• pharmacy premises and pharmacists' confidence to perform MURs as barriers to MUR implementation • Interview data also identified lack of GP support as a problem with lack of communication and agreement between pharmacists and GPs potentially adversely affecting their relationship • Across stakeholder groups there was a belief in MURs' potential to contribute to patient care • Concerns regarding the quality of MURs conducted were expressed by PCO representatives amid suggestions by both PCO representatives and community pharmacists that multiple pharmacy chains were putting pressure on pharmacists to deliver high numbers of MURs
Harding and Wilcock, 2010	Postal survey questionnaire to community pharmacies in Cornwall (UK) accredited to provide the MUR service (n=76) as well as locum pharmacists on a PCT-held list (n=27)	To explore existing mechanisms to ensure quality assurance of MURs To identify parameters of an MUR that community pharmacists consider as indicators of quality	• 50 completed questionnaires were returned but the actual number of accredited pharmacists providing MURs at the time of the survey was unknown and therefore a response rate was not calculated (34% of the respondents were locum pharmacists) • The estimated number of MURs provided in any week ranged from two to five for 52% of respondents while 30% indicated they provided between eight and ten • The main determinants for undertaking an MUR was the pharmacists' judgement (84%) and patients requesting an MUR (68%) while 34% reported undertaking an MUR because of PCT recommendations • 76% of respondents reported that they had standard operating procedures for MURs in place • 76% of respondents reported that there were no arrangements in the pharmacy for pharmacists to reflect on the effectiveness of the MUR service • 86% of respondents believed training was key to assuring an acceptable standard in undertaking the MUR service, while 96% felt that it was important to be supported by all pharmacy staff • 92% felt an MUR could be considered good if it involved a change in medication, confirmation of patients' adherence to their regimen or if the patient received lifestyle or self help advice • 100% of respondents believed a sub-optimal MUR was one that was undertaken to meet target numbers while 48% of respondents believed that a poor MUR was one where a GP did not act on the pharmacist's recommendations

			• Only 20% of respondents believed that sub-optimal MURs were the result of communication-related issues • 48% of respondents delivered MURs by appointment while a similar proportion offered MUR consultations on an *ad hoc* basis as patients requested them or as staffing levels permitted • 48% (n=24) of respondents reported consulting their colleagues with MUR-related queries. Sixteen of these consultations related to issues such as the effects of medicines, ten related to communication-type issues (e.g. how to interact with a GP) and four centred on concordance-type issues (although these were not defined further). For those not consulting with pharmacist colleagues, reasons included having little or no time to do so (58%, n=21), not having any problems requiring a consultation (39%, n=14) and lack of confidence in colleagues (1 respondent). [These figures have been quoted as published in the study. However, it is unclear how these relate to the overall responses received (n=50). For example, if 24/50 (48% as indicated above) respondents consulted their colleagues it can be deduced that least 26 did not (bearing in mind that some of the respondents may not have answered all the survey questions). However, since the study quoted 21 respondents having little or no time to consult with colleagues as representing 58% and 14 respondents not having any problems requiring a consultation as representing 39%, one can only assume that 36 respondents did not consult their colleagues, which raise further questions about the validity of the questionnaire and the interpretation of the results.]
Latif and Boardman, 2008	Postal survey questionnaires to a convenience sample of 280 pharmacists accredited to provide the MUR service and employed by one UK community pharmacy chain Questionnaires	To explore factors that affect the number of MURs performed by community pharmacists To investigate community pharmacists' attitudes towards the implementation and	• Response rate was 60% • 27% of respondents had not performed any MURs, 43% had conducted between 1 and 15 MUR consultations, 31% had conducted 15 or more MURs • Respondents categorised as "store based" performed significantly more MURs than "locums" ($p = 0.009$) but not significantly more than "managing" pharmacists • Pharmacists with access to an accredited consultation area delivered significantly more MURs than those who did not ($p < 0.001$) • Pharmacists working more than 20 hours per week delivered significantly more MURs than those who worked less ($p = 0.009$)

	included demographic and attitudinal questions (including views of the pharmacists' extended role in relation to the MUR service, effectiveness of the service and barriers to its implementation)	value of the MUR service	- Gender, time since qualification, pharmacy size and having or undertaking a clinical diploma were not found to be associated with the number of MURs performed - Respondents reported that the MUR service was an opportunity for an extended role (93%) although this role was not further defined, that it would make better use of pharmacists' professional skills (86%), and that it would enhance pharmacists' understanding of their patients' views about medicines (96%) 93% of respondents were of the opinion that the MUR service would improve patients' use of medicines 43% of respondents doubted whether GPs thought the service was of value to patients - Lack of time and support staff and lack of a suitable consultation area were identified as barriers to delivering the service - Almost half of the respondents indicated that they would perform more MURs if they had a reasonable financial incentive
Latif *et al.*, 2011	Five weeks of data collection in each of two purposefully recruited pharmacies (one independent and one multiple pharmacy) following ethnographically orientated unstructured observation methods Observations of pharmacy activities and MUR consultations (n=54) were followed by interviews with MUR patients (n=34), pharmacists (n=5) and	To understand the contribution of the MUR consultation to counselling practice in community pharmacies To explore what MUR consultations may additionally offer over "traditional" patient-pharmacist interactions for prescription and OTC medicines	- During the consultation pharmacists provided a brief explanation of the purpose of the MUR followed by a question-answer sequence that enabled completion of the MUR form, thus the pharmacist's use of the MUR form seemed to direct the consultation - Patients offered minimal responses to the closed nature of pharmacists' questions - Pharmacists were observed completing the form and talking to patients simultaneously - At the end of the MUR pharmacists occasionally asked patients whether they had any questions but few took up the invitation to respond - Few patients were able to remember details of their previous MUR consultation or actions taken as a result - Most patients reported that the MUR did not improve their knowledge and rarely affected their use of medicines - Pharmacists were heavily involved in the dispensing process and MURs were therefore performed opportunistically - Despite acknowledging that patients on more complex regimens could potentially benefit more from the MUR service, one pharmacist revealed that she purposefully selected patients on fewer medications or simpler regimens so that the MUR could be performed quickly

	pharmacy staff (n=12)		• Pharmacy support staff reported tensions with patients waiting for a prescription or wishing to speak to the pharmacist while the pharmacist was conducting an MUR consultation and reported that they were left to make judgements as to whether the MUR consultation should be interrupted
Portlock *et al.*, 2009	A prospective analysis of community pharmacists' asthma MUR interventions in the Hampshire and Isle of Wight area (n=315) and service evaluation through feedback	To optimise the outcomes of MURs	• 965 patients from 46 pharmacies received an asthma MUR during the study period • Primary non-adherence, where patients did not have their prescriptions dispensed, was assessed through prescription counting (patients collecting <75% of intended asthma prescriptions in the previous 12 months were deemed non-adherent) • 37% of patients were deemed to be primary non-adherent with their asthma medication • 63% of patients were deemed adherent with their asthma medication but 31% of these reported secondary adherence issues (due to their beliefs about medicines, inhaler device issues or medicine-related issues) • Pharmacists recorded a total of 1,787 interventions of which 49% were educational, 41% were device checks and 10% were GP or nurse referrals • 24% of the patient feedback forms were returned • 87% of respondents agreed that they knew more about their condition since using the service while 91% agreed that they understood more about their medication • 99% agreed that the pharmacist clearly explained how they could gain maximum benefit from their medication • 98% of respondents agreed that the pharmacist's advice was useful • Key themes from 209 statements about what patients liked about the MUR service included their overall impression of the service (friendly, polite, relaxed, courteous), privacy, the demonstration of the inhalers, explanation of the medicines and convenience (short MUR, local, convenient) • Key themes from 19 statements about aspects of the service they did not like included the length of time spent in the MUR consultation (too long), the unexpected nature of the consultation, the lack of privacy, inconvenient location (upstairs) or interruption to the consultation • 61% of pharmacist questionnaires were returned

			• All the MURs were initiated by the pharmacist or pharmacy staff apart from one which was initiated by a GP • 89% of pharmacist respondents agreed that the training provided enabled them to implement the service confidently • 64% of the respondents agreed that the MUR service had developed their professional working relationship with other healthcare professionals • 33% of questionnaires were returned from healthcare professionals (all from GPs; none from asthma nurses) • 79% of respondents agreed that asthma MURs were of benefit to patients with 71% agreeing that the service supported them in achieving their quality and outcomes framework (QOF) targets
Urban *et al.*, 2008	Semi-structured interviews of accredited community pharmacists in a West Yorkshire PCT (n=22) using a topic guide	To explore community pharmacists' experiences of conducting MURs, including how this affects their relationship with GPs To identify the extent to which training and accreditation prepared pharmacists for delivering MURs	• 96% of available accredited pharmacists participated in the study of which 67% were providing the MUR service at the time • Pharmacists reported that the MUR service increased patients' confidence in the pharmacist and raised their profile although concerns were raised around the increased waiting time for prescriptions when the pharmacist was conducting MURs • Pharmacists recruited patients belonging to specific therapeutic groups that they had more knowledge about or otherwise looked for opportunities that could potentially lead to MURs (e.g. patients who had run out of medicines or those already asking for advice) • Pharmacists reported that appointment systems often led to patients not attending the consultation or cancellations • Pharmacists predominantly thought GPs were cynical about the value of MURs and that the MUR paperwork served little purpose • Pharmacists had mixed opinions on whether the MUR accreditation process prepared them for delivering MURs in practice. The accreditation training was thought to have prepared them for completion of the associated paperwork and understanding of the service specification, but pharmacists were of the opinion that the courses were too clinical and not helpful in terms of developing consultation skills and how to target different therapeutic areas
Wilcock and	Self-administered questionnaire to 58 GP	To explore GP's perceptions of	• The response rate was 90% • 60% of respondents indicated that their working relationship with the

Harding, 2007	prescribing leads in the Cornwall and Isles of Scilly PCT area attending one of three locality-based prescribing meetings organised by the PCT prescribing team	community pharmacist-conducted MURs	pharmacist was good, 27% said their relationship was limited, 2% said it was poor while 10% reported no working relationship with their local community pharmacist • Respondents were asked how often they consulted their local community pharmacist about drug-related issues to which 23% replied frequently (>4 times per month), 27% occasionally (1-4 times a month); 37% rarely (once or less a month) and 13% never • 96% of respondents were aware of the MUR service • Overall 56% had received 10 or more MUR forms, 33% had received fewer than 10 forms and 12% had not received any forms • 60% of GPs indicated that they thought pharmacists' recommendations in relation to the MUR service were generally useful, but less than 20% of these considered the recommendations a priority • Respondents gave 23 explicitly negative responses to the question about how their practice partners perceived the usefulness of MURs. These included perceptions that the MUR service was a useless overpaid service that was poor and of no benefit to patients. The service was also described as a paper exercise while the acronym MUR was defined as "Medically Useless Review". Seven comments hinted at some positive views of the MUR service (e.g. the service being of mixed value, having limited value or being of marginal benefit). Five responses were explicitly positive and included the MUR service being useful or generally helpful and that all GP partners acted on MUR recommendations made by pharmacists • Respondents provided a range of answers to clarify what they felt would be a really useful MUR, what they would regard a waste of their time and suggestions on how the MUR process could be improved
Wilcock and Harding, 2008	Quantitative analysis of changes to prescribed medication following an MUR in 23 pharmacies Qualitative study of pharmacists' beliefs and expectations of	To evaluate the quantifiable difference of MURs on GP prescribing for patients who have undergone such a review To explore community pharmacists'	Quantitative study • Data were extracted from MUR forms and patient medication records (PMRs) • MUR records and PMRs relating to 294 intervention patients were analysed • 360 PMRs relating to the control group were also analysed • A mean of 1.3 recommendations per patient were made to GPs as a result of the MUR • 56.3% of recommendations appeared to have been acted upon by GPs

	MURs (n=10) involving telephone interviews using a topic guide	perceptions of MURs and their impact on patients	Qualitative study • Tension between employee pharmacists' professional judgement and organisation edicts was identified, especially where set MUR target numbers were perceived to generate income rather than be determined by patient need • Training to deliver MURs was perceived as being focussed on procedures for recording the MUR rather than skills based, leading to pharmacists' lack of confidence in delivering the MUR service initially • MURs were perceived as largely focussing on educating the patient rather than establishing concordance and facilitating patients to make informed decisions regarding their medicines use • Although MURs provided an opportunity to develop closer working relationships with GPs, respondents reported an absence of direct feedback from the GP and there was some uncertainty among pharmacists as to the content of MURs that could be perceived as pharmacists straying into the doctor's territory • The MUR service was perceived to have enhanced pharmacists' relationships with patients rather than with prescribers
Youssef et al., 2010	Postal questionnaire to all patients who had an MUR in one community pharmacy in Derby (n=152)	To determine whether patients benefit following an MUR consultation and whether certain groups of patients derived more benefit than others	• The response rate was 53% • The questionnaire consisted of 3 statements associated with a five-point Likert scale. Further information collected included patient demographic data, details on patients' medical conditions and the number of prescribed medicines taken • 68% of respondents agreed that they had "learnt more about their medicines after the MUR with the pharmacist", but there was no significant difference in the proportion of patients perceiving benefit based on whether they were taking three or more prescribed medicines or taking less than three ($p = 0.54$) • 58% of respondents agreed that the MUR made them more aware of side effects while 17% were uncertain and 23% disagreed. A significantly greater number of older patients (defined as >65 years of age) thought the MUR made them more aware of side effects ($p = 0.01$) • 83% of respondents agreed that they felt they were taking their medicine(s) "in the right way and at the correct time after speaking to the pharmacist"

			• MUR forms and PMRs were studied to determine what interventions had been suggested by pharmacists and whether these had been implemented. From information available in the PMRs a total of 15 interventions were made of which five were implemented (the study provides no further details on which interventions were implemented) • Out of the 152 patients, 83 respondents (55%) were asked about their smoking status and 11 (13%) of those were found to be smokers. Four of these smokers enrolled onto the available smoking cessation programme and successfully quit smoking

Table 1.2 Strengths and weaknesses of published research into the MUR service

Study	Strengths	Weaknesses
Blenkinsopp *et al.*, 2007b	Good response rates to both the PCO survey (94%) and the telephone interviews (86%) Although the PCO sample represented only 10% of the PCOs in England and Wales, the sample seemed representative of the national population of PCOs	The questionnaire was based on previous national surveys of PCOs in 2003 and 2004 following additional pilot work. Questions covered a range of topics with respect to the new community pharmacy contract. In relation to the MUR service questions were focussed on whether the PCO had a strategy for medicines reviews (including MURs and medication reviews by GPs) and if it included community pharmacists, whether the PCO had agreed priority patient groups for the MUR service and what they were, whether the PCO had taken action to support local implementation of the MUR service and how and what the frequency of contact between LPCs and local medical committees was. In terms of the interview schedule, respondents were asked which aspects of the contract had gone relatively well and for suggestions about ways in which they thought it could have been improved. Although answers to these questions provided insight into the implementation and provision of the MUR service, these did not specifically focus on barriers and facilitators to uptake of the service. It seems therefore that this particular information was volunteered as part of respondents' answers to open questions on positive and negative aspects of the contract. It remains unclear whether investigation of the barriers and facilitators to the uptake of the MUR service, which was stated as an aim of this study, was an intention of the researchers at the outset as these were not specifically reported on in the results of the study. Just over a third of the community pharmacies had offered the MUR service and this represents a small population given the fact that only 10% of PCOs and SHAs were included in the random sample. This may have led to bias in a population who volunteered information on barriers to the implementation of the service, i.e. no investigation was done as to whether these were real barriers experienced by pharmacists or whether they could potentially have represented their excuses to implementing the service.
Bradley *et al.*, 2008	Clear statement of the study aim was included	The study aimed to explore and identify key determinants influencing the uptake of the MUR service. Yet seven predetermined potentially influencing factors to implementation were presented to respondents. Thus other key factors that could

		have been identified by respondents may have been excluded inadvertently.
	Multi-method approach Good response rate to survey (74%) Aimed to provide a national picture of MUR activity in England	Only 12% of the variation in uptake of MURs was explained by the variables in the model, although the study recognised that the dataset was constrained by and limited to data which are available nationally at PCO level. GPs were not represented in this study. There was no mention of ethical approval needed or obtained for this study.
Harding and Wilcock, 2010	The questionnaire was developed based on a literature review and outputs from a focus group, piloted and subsequently revised	The study was limited to community pharmacies in one geographical location. The questionnaire contained closed questions only, possibly inadvertently excluding views and ideas around quality parameters that respondents may have identified themselves. However, it should be noted that this survey was based on an earlier study by the same authors (Harding and Wilcock, 2008) and the aim was to explore whether the concerns relating to peer review in an earlier study were shared amongst the community pharmacists in this area. The authors did not explore views of PCO representatives who may have introduced or considered MUR quality mechanisms as part of their NHS pharmacy contract review visits (although the MUR service does not fall within the remit of these visits, anecdotal reports suggest that many PCO representatives made enquiries relating to the service as part of these visits). The only possible quality mechanism mentioned in the study was "consultation with colleagues" although the advice provided by these colleagues was not explored further nor linked to quality of the MURs delivered. The study set out to identify parameters of an MUR that pharmacists considered to be indicators of quality. Apart from respondents indicating that an MUR was to be considered sub-optimal when undertaken to meet pre-determined targets or when the GP did not act on the pharmacist's recommendations, no quality indicators had been identified. However, there is no evidence to suggest that all MURs primarily initiated to meet target numbers are of poor quality and pharmacists have no control over whether (or which) recommendations GPs choose to act on or ignore. It is therefore questionable whether these findings could constitute parameters of quality assurance of MURs.

| Latif and Boardman, 2008 | Ethical approval for the study was obtained

Associations between demographic variables and the number of MURs performed was statistically analysed using valid and relevant statistical tests | Although the response rate in this study was 60%, more than a quarter of the respondents (n = 44; 27%) had not actually conducted any MURs. The study contrasted this finding with that of the national evaluation by Blenkinsopp *et al.* (2007a) which suggested that 59% of respondents were providing MURs. However the authors failed to put this figure into context of their other findings. Consider for example the fact that 44 respondents (27%) indicated that they had not performed any MURs. A quarter of respondents (n=42; 25%) also indicated that they had no access to a consultation area, which was a contractual prerequisite for providing the MUR service. One could assume that these respondents would correlate. However, on further scrutiny, of the 42 respondents who indicated that they did not have access to a consultation room, 15 appear to have performed between 1 and 15 MURs and six appear to have performed 15 or more MURs. These respondents not delivering MURs therefore did not correlate with those who had no access to a consultation room. Two points are of importance here: 1) 21 respondents with no access to a consultation room actually delivered the MUR service; and 2) 14% of respondents with access to a consultation room failed to deliver any MURs, although the study design did not allow for reasons behind this to be explored. The second finding is also significant in light of the high proportion of respondents (93%) that indicated that the MUR was an opportunity for an extended role with the same percentage agreeing that the MUR service would improve patients' use of medicines.

Survey questionnaires have merit in exploring the views of community pharmacists in relation to the value of the MUR service, but in this study, they failed to provide detail on the reasons for respondents' answers. For example, pharmacists were asked to rate their perception of the effectiveness of MURs, meaning that all MURs were amalgamated into one concept whereas pharmacists may have felt that a particular type of MUR was more beneficial or valuable compared to another or that a specific patient group would benefit more compared to another. |
| Latif *et al.*, 2011 | Ethical approval for the study was obtained

Triangulation of the observers' notes and accounts provided by participants during interviews was carried out | The interviews and observations were carried out in only two pharmacies. Although the MURs were carried out by different pharmacists, these results may not reflect patient experiences in other pharmacies where the workflow or support staff may be different or where patient expectations may be different. |

	The first study to explore the views of pharmacy support staff	The effect of the observer's presence on the patient-pharmacist interaction is unknown, although this was mentioned as a study limitation.
Portlock *et al.*, 2009	The study explored the views of various stakeholders, including patients, pharmacists and other healthcare professionals	Interested pharmacies were chosen based on LPC selection criteria which may have introduced selection bias. The assessment of a patient's primary adherence through prescription counting is a crude measure of adherence to a prescribed medication regimen. This process also does not allow consideration of a patient using any inhalers that may have been stockpiled at home in the past or ordering additional inhalers for example to keep at the office. The feedback forms were designed and tested by the LPC (although it was not stated how they were tested) with input from clinicians and academics but no patients were involved in the design of the patient feedback forms. The patient satisfaction questions only expected patients to report on their level of agreement with whether or not the MUR had met certain standards which were suggested by the researchers through a series of statements. However, these statements did not aim to explore patients' subjective and personal evaluations of the service that could be linked to their level of satisfaction. The low response rates, especially to the patient and GP feedback forms, raise questions around response bias. Although 209 statements from 230 feedback forms contained reasons why patients liked the MUR service, the study is not clear about whether these statements related to 209 individual patients or whether some patients included more than one statement on their feedback forms. It is not clear how this study met its aim of optimising outcomes of MURs.
Urban *et al.*, 2008	The study included views of accredited pharmacists who were not delivering MURs	The study was carried out in one geographical location. The analysis involved developing themes from the interview transcripts but the

		actual method used was not explicitly stated. The study reported that community pharmacists felt MURs helped to improve patients' understanding and correct use of medicines, but these findings were only based on pharmacists' perceptions as no MUR outcomes were investigated.
Wilcock and Harding, 2007	The response rate was 90% The authors highlighted that some of the negative views around MURs may have been related to misunderstanding the purpose of the MUR	The questionnaire was based on relevant published research into MURs and local knowledge of MUR service developments. However, the study did not specify how content validity was assessed and no information on piloting the questionnaire was given. In addition, no information on the questionnaire design is given apart from reference to a free text section for comments. The study design did not allow further exploration of the fact that 12% of GPs stated they had not received any MUR forms. This was not correlated with a sample of pharmacists who were not delivering MURs so it is not possible to tell whether these forms were not received by the GP practice or just not seen by the GP as the service specifications at the time stated that the GP had to be sent a copy of each MUR consultation conducted. In terms of pharmacists' recommendations made as part of the MUR, respondents were asked to choose one of four options: • Really useful and to be prioritised • Useful, but not necessarily to be prioritised • One where the cost of implementing the advice given outweighs the benefits that usually accrue • Variable depending on the pharmacist However, the options do not appear to be mutually exclusive and may therefore have resulted in an inaccurate or at least incomplete picture of GP's views.
Wilcock and Harding, 2008	Retrospective study that included a control and intervention group The data collection tool was piloted and subsequently revised Although small, the purposive sample of	Any changes in medication identified from the PMR may not necessarily have stemmed directly from recommendations made as part of the MUR service and may have resulted from reviews or patient consultations carried out at the surgery. PMRs are not completely accurate records of patients' medicines as patients may on occasion take their prescriptions to be dispensed elsewhere.

	community pharmacies included multiple and independent pharmacies was spread across urban, semi-urban and rural communities Independent analysis of interview transcripts was undertaken and emergent themes compared This was the first study to investigate the extent to which pharmacists' recommendations to GPs appeared to have been implemented	The population represented only a small proportion of patients at each pharmacy (range 0-21).
Youssef *et al.*, 2010	The study stated that ethical approval was sought but deemed unnecessary Although the numbers were small, this was the first study to report success rates of smokers enrolling onto a smoking cessation programme as a result of an MUR consultation	This was a single-centre study in one geographical area only and the response rate was not particularly high (n=81; 53%). However, it is unclear how information on the smoking status of an additional two respondents (n=83) was acquired. The study aimed to determine whether certain patient groups derived more benefit from the MUR service than others, but only two groups were investigated. One group was based on the patient's age (65 years or below versus more than 65 years) and the other was based on the patient's number of prescribed medicines (less than 3 versus 3 or more). Justification for the cut-off point for number of medicines was not given and different results may have been obtained if there were more bandings based on the number of medicines prescribed. No investigations based on types of medicines or medical conditions were carried out. Some of the statements in the questionnaire were ambiguously worded. For example the statement "I learnt more about my medicine(s) after the MUR with the pharmacist" surely referred to knowledge gained during the MUR consultation rather than a task completed and carried out afterwards. In addition, the study indicated that subgroup analysis by age showed a trend towards older patients learning more about their medicines than younger patients. However, the actual finding seems to be that a higher proportion of older people indicated that their knowledge improved compared to the proportion of younger people rather than that they actually learnt more.

Further information collected referred to the number of medicines the patient was taking although this could have been clarified by asking how many medicines had been prescribed because research has shown that not all prescribed medicines are actually taken.

It is unclear how more knowledge about side effects could be directly related to the MUR service being beneficial to the patient, unless concerns about side effects were reported by the patient during the consultation. In this case it is conceivable that pharmacists would spend time in the MUR consultation addressing these issues, but not that they would make the patient aware of all the medicine's possible side effects which would already be listed in the patient information leaflet (PIL) supplied with the medicine.

The final statement "I feel that I take my medicine(s) in the right way and at the correct time after speaking to the pharmacist" resulted in a high proportion of participants agreeing. Yet, the study did not clarify whether these patients had already been taking their medicines in accordance with the prescriber's intentions prior to the MUR consultation. It is therefore not possible to consider this finding to be a direct result of the MUR consultation.

Of the 152 MURs conducted, the pharmacist made 15 interventions. The study quotes this as being 9.9% leaving the reader to assume that none of the MURs resulted in more than one intervention being made although this is not explicitly stated.

From the research described above it can be seen that the provision of the MUR service, its effectiveness and perceptions of the service have all been examined in different ways. While these studies have provided insight into the MUR service and its uptake and delivery, some major weaknesses have been identified. These have been outlined in Table 1.2, but a summary of key points is given below.

1.5.7 Key shortcomings of published MUR research

1.5.7.1 Studies failing to meet their aims

It was unclear how three studies actually met their specified aims. Blenkinsopp *et al.* (2007b) aimed to investigate barriers and facilitators to the uptake of the MUR service, but failed to report on results relating to this aim. Portlock *et al.* (2009) aimed to optimise the outcomes of MURs but mainly reported on whether patients felt their knowledge about their condition and medication improved as a result of the MUR, whether they found the pharmacist's advice useful and what they liked or disliked about the service. These were not strictly speaking optimisation of the MUR, but results that could, in the future, improve MURs. The third study only partly met its aim of exploring existing mechanisms to ensure quality assurance of MURs (Harding and Wilcock, 2010) as the only mechanism that was mentioned related to pharmacists consulting with colleagues. However, the outcomes of these consultations were not linked to quality assurance of MURs and at the time the authors admitted that aiming to establish a robust and acceptable MUR quality assurance mechanism was immature in a study of that nature.

1.5.7.2 Potential problems with validity of the results

Portlock *et al.* (2009) achieved response rates of 24% to their patient and 33% to their GP feedback forms. These low response rates raise questions regarding the external validity, or generalisability, of the results. Although much higher response rates were achieved in other studies, such as the 80% response rate quoted by Latif and Boardman (2008), a significant proportion of the respondents had not actually delivered the MUR service. Although capturing the views of pharmacists who were

not delivering the service is useful in addressing low service delivery, their responses to questions relating to actual service delivery may have skewed the results leading to questions regarding the validity of the findings.

External validity may also be a factor to consider in the study by Latif *et al.* (2011) who carried out their research in only two pharmacies. Similarly, Harding and Wilcock (2010), Urban *et al.* (2008) and Youssef *et al.* (2010) limited their respective studies to one geographical location introducing potential bias. However this may be deemed acceptable in studies of a qualitative nature where the objectives are generally to explore and explain occurrences rather than to test the extent to which the characteristics apply to a large population (Smith, 2002).

In another study (Portlock *et al.*, 2009) possible selection bias may have been introduced as the Local Pharmaceutical Committee (LPC), not the researchers, produced selection criteria based upon which pharmacies were chosen to participate.

1.5.7.3   Methodological shortcomings

In a study to explore and identify the key determinants influencing the uptake of MURs, Bradley *et al.* (2008) presented seven predetermined and potentially bias-inducing factors to participants. This may have led to the inadvertent exclusion of other factors that participants may have identified on their own. Similarly Harding and Wilcock (2010) developed a questionnaire to determine parameters that could be considered quality indicators of the MUR service. But the questionnaire only contained closed questions thus limiting and excluding respondents' views, comments and possible explanations for the survey options chosen.

Latif and Boardman (2008) investigated community pharmacists' attitudes towards the implementation and value of the MUR service, but a major limitation of the study was the fact that all MURs were amalgamated into one concept. This prevented the identification of particular types of MURs that pharmacists may have considered more valuable or beneficial compared to others.

Portlock *et al.* (2009) asked patients to indicate their level of agreement with a series of seven statements to determine their level of satisfaction with the MUR service. However, six of these statements related to the extent to which MUR standards were being met, e.g. "the pharmacist clearly explained how I could gain maximum benefits from my medication", and failed to explore patients' subjective and personal evaluations of the service and its components that could be linked to their level of satisfaction with the service received (see Chapter 4 for more detail on determining patients' satisfaction with services received).

A shortcoming in the study by Urban *et al.* (2008) was that the authors did not explicitly state the method used to analyse the interview transcripts developed from their semi-structured interviews.

Wilcock and Harding (2007) failed to address content validity and piloting of their questionnaire to explore GPs' perceptions of MURs. The questionnaire also aimed to determine GPs' perceptions of pharmacists' recommendations made as part of the MUR service. Although asked to choose only one option, the statements were not considered mutually exclusive (see Table 1.2) and therefore the results of the study may have been affected. The questionnaire developed by Youssef *et al.* (2010) on the other hand contained questions such as "I learnt more about my medicine(s) after the MUR with the pharmacist" which could be considered ambiguous. For example, the patient would not generally be expected to carry out additional tasks post-MUR to improve their knowledge and therefore the knowledge gained probably refers to information received as part of the MUR service, not "after" the consultation. In addition, the study did not provide any justification for cut-off points for age ($\leq$65 years vs >65 years) and the number of prescribed medicines used (<3 vs $\geq$3 medicines) and different results may have been obtained if the bandings and cut-off points were different. The study also failed to investigate whether the type of medicine prescribed or the patient's medical condition could impact the benefit derived from the MUR. In the same study the authors seemingly obtained information on the smoking status of two additional participants that did not respond to the postal questionnaire without providing an explanation for this anomaly.

1.5.7.4 Questionable inferences from results

In terms of quality assurance of MURs, all the respondents (n=50) in a study by Harding and Wilcock (2010) believed that MURs carried out to meet pre-determined targets numbers were sub-optimal. Nearly half (n=24) of the respondents also believed that poor MURs were ones where the GP did not act on the pharmacist's recommendations. However, it is questionable whether these findings could constitute parameters of quality of MURs as there is no evidence to suggest that all MURs primarily initiated to meet target numbers are of poor quality. Furthermore, pharmacists have no control over whether, or which, recommendations GPs choose to act on or ignore and therefore this cannot be considered to represent an indicator of MUR quality as the appropriateness of the recommendations were not evaluated.

In another study, Wilcock and Harding (2008) used patient medication records (PMRs) to identify changes in patients' medication which they believed stemmed from the MUR service. But these changes cannot necessarily be attributed directly to the recommendations made by the pharmacist as part of the MUR service and this measure of quantifiable differences in GP prescribing for patients as a result of the MUR could therefore be considered a crude measure at best.

Despite these shortcomings the research described above contributed to knowledge about the uptake of the MUR service, especially when it was first introduced, as well as perceived barriers and facilitators to the delivery of the service (Blenkinsopp et al., 2007b; Bradley et al., 2008; Latif and Boardman, 2008). In addition, attempts were made to explore matters relating to the quality of the MUR service (Harding and Wilcock, 2010), the contribution of the MUR consultation to counselling practice in pharmacies (Latif et al., 2011), pharmacists' attitudes, experiences and perceptions of various aspects of the MUR service (Latif and Boardman, 2008; Urban et al., 2008; Wilcock and Harding, 2008), GPs' perceptions of the MUR service (Wilcock and Harding, 2007), as well as potential benefit to patients (Youssef et al., 2010). However, there remains no clear evidence of whether MURs have value in improving adherence or health outcomes or whether they represent a cost effective intervention. The approach taken in the work underpinning this thesis has focussed fundamentally on two of the issues highlighted by others, but not considered to have

been examined effectively, namely patient recruitment to the MUR service and an examination of the value of the service.

1.6 Aims and objectives

The principal aim of the work conducted in this thesis was to investigate the value of the MUR service with specific reference to including patients in decisions about their care, evaluating the quality of the service, prioritising and recruiting patients who could potentially benefit from the service and providing a good quality service that would result in a high level of patient satisfaction.

The specific objectives were:

- To evaluate the MUR information leaflets used to market the service to patients in order to determine the portrayal of the service,
- To consider whether the NHS MUR forms could be used as data for peer review audits to assess the quality of the services delivered,
- To develop a system to assist community pharmacists in selecting patients who could potentially benefit from accessing the MUR service, and
- To consider patients' satisfaction as an immediate outcome of the MUR service by capturing patients' and pharmacists' perceptions of the MUR.

The next chapter (Chapter 2) provides a detailed examination of the way in which the MUR service was marketed within the context of patient-centred care and the impact that such marketing may have had in attracting patients to access the MUR. The phrase "medicines use review" itself, and MUR patient information leaflets (PILs) available at the time, are scrutinised using discourse analysis and findings are presented in this chapter.

One of the outstanding issues relating to the provision of the MUR is the selection of patients and whether pharmacists' judgement and prioritisation resulted in the service being delivered to those patients who could potentially benefit from an MUR consultation. Chapter 3 therefore seeks to audit a cross-section of MURs delivered in one particular month in order to examine this question. The audit, as well as

looking at types of patients selected for the MUR, also investigated the number and types of medicines these patients were prescribed and types of advice given and/or recommendations made by pharmacists. On the subject of patient recruitment however it became necessary to examine the complexity of patients' medication regimens. Based on this a future recruitment strategy is detailed and discussed in this chapter by proposing a novel patient selection tool.

Having argued that the new tool could enable recruitment of patients who may benefit from the MUR service due to potential problems with adherence to their medication regimens, it was important to examine patient experiences with the MUR. Adherence has long been associated with patients' subjective experiences of healthcare services and in particular their interactions with healthcare providers. Yet at the time of conducting this work, and even to date, no validated tool exists to fully capture patients' experiences in relation to satisfaction with the MUR service. It is important to examine the underlying constructs associated with patient satisfaction with the MUR service. Therefore patients are the focal point in Chapter 4 which sets out to examine the potential features of any new MUR patient satisfaction questionnaire. This chapter puts forward a conceptual framework for the measurement of patient satisfaction with the MUR service.

Chapter 5 draws together the findings of this work and relate them to current knowledge in order to propose further work in this area.

CHAPTER 2 : THE MEDICINES USE REVIEW SERVICE: CONSTRUCTION VIA PATIENT INFORMATION LEAFLETS

2.1 Introduction

As discussed in Chapter 1, the introduction of the MUR service stemmed from a need to empower patients to take on a more active role in decisions regarding their health and the management of their conditions, on a par with health professionals (Marinker, 1997; Horne *et al.*, 2005; Hayes *et al.*, 2008). Patient empowerment has been defined as a "process designed to help patients develop the knowledge, skills, attitudes and degree of self-awareness to assume responsibility for their health-related decisions" (Feste and Anderson, 1995, p.139). Aujoulat *et al.* (2008, p.1228) further argued that patient empowerment was "a process of personal transformation" through which patients came to terms with their threatened security and identity caused by the presence of a long-term medical condition and need for treatment. Holmström and Röing (2010) argued that this 'process' could be facilitated by healthcare providers and achieved through patient-centredness. The focus of this chapter is to examine patient empowerment in relation to the MUR service by considering the marketing of the MUR service and the degree to which patient empowerment featured in information material aimed at patients as yet naïve to this service.

In order to provide relevant background, an introduction to patient-centredness is first given in the context of the doctor-patient relationship including a definition of patient-centredness as well as a discussion of the challenges to implementing it. Next, the involvement of pharmacists in the patient-centredness debate through the MUR is described, with particular focus on the impact of such involvement on pharmacists' long-established identity. The conventional views about the role of pharmacists are examined in order to highlight the potential gap between what has been expected of pharmacists and what the MUR service required pharmacists to undertake. There is also a brief introduction to the marketing of public health activities through social marketing because a particular interest was to examine the

representation of the new service through information leaflets designed for building patient awareness about the service.

2.1.1 Patient-centredness in doctor-patient consultations

A patient-centred approach in relation to the doctor-patient consultation has been the topic of research for more than 40 years. When the concept of patient-centredness first emerged, some doctors voiced their opinion that all medical activities were based on the patient's individual needs and were therefore *per se* patient-centred (Balint and Norell, 1973). However, patient-centredness does not only imply focussing on the individual patient's needs. According to Stewart (2001) patient-centred care involves exploring the patient's main reason for visiting their healthcare provider, their concerns and need for information, seeking to understand the patient's world, including their emotional needs and life issues, finding common ground on what the problem is and agreeing on its management, enhancing disease prevention and health promotion as well as enhancing a continuing relationship between the patient and the healthcare provider. Research focussing on this model has shown patients' desire for, and satisfaction with, patient-centred care and linked the approach with improvements in patient outcomes (Stewart *et al.*, 2000; Little *et al.*, 2001a; Little *et al.*, 2001b).

Patient-centred care naturally calls for a shift from the traditional paternalistic (Roter and Hall, 1992) 'the doctor knows best' biomedical model. Here, the health professional is seen as being in charge of the consultation and decisions relating to the health of the patient. But with patient-centred care, the transferral of power is not without controversy and tension. Some are of the opinion that paternalism has no place in modern health care (Coulter, 1999) while others reason that the biomedical approach provides practitioners with a professional or medical identity that does not require significant sharing of power (O'Flynn and Britten, 2006). Indeed, the term 'profession' itself has been linked to status and autonomy (Taylor *et al.*, 2003) and as such The Picker Institute aimed to align 'patient-centred care' and 'professionalism' (Askham and Chisholm, 2006).

> Patient-centred professionalism is best understood as doctors
> fulfilling their changing (and in some cases unchanging) roles in ways

which coincide with changing (or unchanging) patient roles, as well as working with patients and others to see whether areas of conflict can be eased. (Askham and Chisholm, 2006, p.12)

Being patient-centred and offering power to patients is not straightforward. One argument has concentrated on health professionals' fear of relinquishing control to patients who may not have the desire or knowledge to fully manage their own health care (Laine and Davidoff, 1996). This view was partly supported by McKinstry (2000) who demonstrated that not all patients wanted this level of participation in making decisions during consultations. Those results confirmed earlier findings by Savage and Armstrong (1990), although Stewart (2001) later indicated that such findings may have been based on a misconception of what "being patient-centred" meant. However apart from personal conflicts, others have identified a conflict between a focus on patient-centredness and the structural aspects of the healthcare system within which these consultations were to be carried out (Barry *et al.*, 2001; Gravel *et al.*, 2006), which is explained below.

In the UK the planned face-to-face consultation time with a GP is 10 minutes (BMA: British Medical Association and NHS Employers, 2009). It is likely that during this short consultation the main point of discussion would be the symptom, question, query or problem that the patient presented with. Thus there simply may not be enough time to fully discuss the impact of the presenting complaint or symptom on the patient's general health, or to put all the patient's fears and anxieties to rest, which a patient-centred approach would advocate. It therefore comes as no surprise that the British Medical Association (BMA) and Royal College of GPs have called for the length of GP appointments to be increased to deal with the increasing complexity of patients' health-related problems (BMA, 2009; Royal College of GPs, 2010).

Patients have complex and wide-ranging needs when it comes to general practice consultations. However, research indicates that during GP consultations the majority of patient concerns remain unvoiced and therefore not addressed, especially those relating to worries about the possible diagnosis and what the future holds, patients' ideas about what is wrong, side effects of medication and not wanting a prescription (Barry *et al.*, 2000). In addition, even though patients may feel they have a right to

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challenge a doctor's authority, few ever do (Beisecker, 1990). Thus some have argued that shared decision-making, which aims to help patients play an active role in decisions concerning their health through a decision-making process shared with their healthcare providers (Gravel et al., 2006), and is considered a goal of patient-centred care, cannot be achieved during the short consultation time with a GP (Barry et al., 2001). However, it has also been shown that in more than two thirds of consultations involving the prescribing of new drugs, no reference to side effects, risks or precautions was made by the GP (Makoul et al., 1995). Therefore, shared decision-making which requires a determined effort to provide adequate information to the patient so that an informed decision regarding treatment options based on the patient's preferences can be made, may not be achieved. From a patient's perspective this may be due to the fact that they may not have enough time to come to terms with a new diagnosis or treatment regime and therefore questions may only arise after they have already left the GP's consultation room. In addition, Chapter 1 also highlighted that many repeat prescriptions are generated without a patient-GP consultation and that these prescriptions are often inadequately reviewed (Harris and Dajda, 1996; De Smet and Dautzenberg, 2004). All of this evidence suggests that GP consultations are not a perfect model of patient-centredness.

Furthermore, there is scepticism among GPs about the importance of developing a partnership with patients during their consultation (Griffin et al., 2004). However, it is also possible that the focus on evidence-based medicine and reaching targets within the NHS, especially those linked to payments to general practices through the General Medical Services contract (The NHS Confederation and BMA, 2003), may not be fully compatible with a patient-centred model. Questions around the practicality of implementing true patient-centredness that could lead to shared decision-making in general practice consultations (Elwyn et al., 1999) therefore remain unanswered. Nonetheless there has been a renewed emphasis on policies promoting shared decision-making in the UK (DH, 2010a), largely due to growing evidence of the benefits of this approach (O'Connor et al., 2009). Nonetheless, patient-centredness in the patient-GP consultation could be described as potentially an on-going and contentious issue into which the community pharmacy MUR service was introduced.

2.1.2 Patient-centredness in the patient-pharmacist interaction

The MUR service was introduced to "improve patient's knowledge, concordance and use of medicines" through a patient-pharmacist consultation (PSNC, 2004). The term concordance also has its roots in the philosophy of patient empowerment (Feste and Anderson, 1995). According to the WHO (2006) the pharmacist's role has evolved into "a more patient-centred approach" to address increasing health demands, increasing complexity of medicines and patients' poor adherence to prescribed medicines. But, similar to problems with patient-centredness in doctor-patient consultations as discussed above, challenging aspects of patient-centred professionalism in community pharmacy settings have also been described (Rapport *et al.*, 2010). These were rooted in the different agendas and experiences held by healthcare professionals and patients, where pharmacists felt torn between ever-increasing conflicting tasks such as meeting the demands of the public and their profession and being expected to provide advice and make recommendations to patients in new unfamiliar situations such as a private consultation room (Rapport *et al.*, 2010). Thus it is worth examining briefly the changing role of the pharmacist which allowed pharmacists to take on the role of delivering the MUR service and to enter the patient-centredness debate.

2.1.3 The evolving role of the pharmacist

The community pharmacist's role over the years has been intrinsically linked to the safe sale and supply of medicines. A variety of historical changes, including the separation of dispensing from prescribing in 1911, the inception of the NHS in 1948 and the subsequent substantial increase in the number of prescriptions written by GPs, led to pharmacists' role becoming more focussed on dispensing. For decades, up until around twenty years ago, this absolute focus on dispensing prescriptions greatly influenced pharmacists' location within the pharmacy as they effectively migrated to the dispensary and out of sight of patients (Anderson, 2001).

A number of initiatives were launched to draw pharmacists out of the dispensary into a patient-facing role. The extended role of the pharmacist advocated in the report

Pharmaceutical Care: the Future for Community Pharmacy (DH and RPSGB, 1992) aimed to increase pharmacists' contribution to health care through participation in health promotion campaigns and enabling a wider range of medicines to be available for sale. This paved the way for the development of a strategy for the future of pharmacy, *Pharmacy in a New Age* (RPSGB, 1996; RPSGB, 1997b), which identified four areas of pharmacy involvement, including the management of prescribed medicines, the management of chronic conditions, the management of common ailments and the promotion and support of healthy lifestyles. However, pharmacists have remained responsible for ensuring that any dispensed medicine is appropriately prescribed as they could be held liable together with the prescribing doctor if mistakes were made (Britten, 2001). Therefore, every prescription presented at a community pharmacy for dispensing must still be seen by a pharmacist who makes a judgement as to what action is required. Nevertheless direct contact with patients, it could be argued, remained relatively brief, spontaneous and unstructured (Chen and Britten, 2000) until the introduction of formal paid services such as the MUR. Pharmacists' perceptions of their role in delivering a dispensing service also influenced their social identity.

2.1.3.1 Pharmacists' perception of their social identity based on ideas about their role

According to social identity theory (Tajfel and Turner, 1979) people classify themselves and others into various social categories based on a shared understanding of societal functions. This social classification enables an individual to not only divide and order the social environment but also define him- or herself in this environment in order to create a sense of belonging (Ashforth and Mael, 1989). Historically, pharmacists' exclusive field of knowledge afforded them a high status in an earlier community, comparable to the position enjoyed by doctors (Edmunds and Calnan, 2001). Pharmacists' focus on dispensing over time though has led some to comment that pharmacists became overqualified for their roles and over-educated distributors of medicines (Eaton and Webb, 1979; Roberts, 1988; Mesler, 1991). Community pharmacists were described as "over-trained for what they did and under-utilised in what they knew" (Eaton and Webb, 1979, p.73). Some pharmacists also became dissatisfied with their dispensing role (Edmunds and Calnan, 2001) and

many described themselves as "counters and pourers", "lickers and stickers" or "glorified shelf stackers" (Mesler, 1991; Sidhu, 2003). It was argued that corporatisation, the transfer of drug manufacturing away from pharmacies to the pharmaceutical industry and technological advances, led to the automation of tasks in the pharmacy which subsequently undermined the professional status of the pharmacist (Harding and Taylor, 1997, 2000; Hibbert *et al.*, 2002; Bush *et al.*, 2009).

Pharmacy was subsequently characterised as an 'incomplete profession'. This was attributed to the pharmacist's "failure to gain control over the social object [the drug] which justified the existence of its professional qualities in the first place" (Denzin and Mettlin, 1968, p.378). In contrast, Dingwall and Wilson (1995) suggested that the social object of pharmacy was not the drug as an object, but the drug as basis for social action. They went further to imply that pharmacists' knowledge about patients, side-effects and drug interactions, together with their advice-giving role contributed to the maintenance of order and discipline in their social world. In response, pharmacists explored opportunities to reclaim an extended role, such as their involvement in health promotion (Anderson, 2001; Bissell and Traulsen, 2005). However, attempts to implement these changes were inevitably linked to pharmacists existing social identity and judged against their 'quasi-professional' status. Perhaps predictably the changes were seen by some as a method of enhancing the professional status of pharmacy and it was judged unavoidable that pharmacists would be accused of encroaching on the medical professionals' territory (Eaton and Webb, 1979; Edmunds and Calnan, 2001; Bradley *et al.*, 2008).

2.1.3.2   The pharmacist's social identity as judged by GPs

At the start of the 1990s, it was estimated that daily about half a million people in the UK received a prescription from their GP before taking it to a community pharmacy to be dispensed (Drury, 1991; Spencer and Edwards, 1992). Therefore, every day, potentially half a million people were seen by a GP and a pharmacist in relation to the same problem. Although this extent of mutual activity would imply a degree of close working between pharmacists and GPs, the case was not necessarily as simple (Drury, 1991).

Although pharmacists' extended role was endorsed in a governmental NHS review in 1987, the proposals to extend their roles provoked much debate (Roberts, 1988) since GPs did not historically regard pharmacists as members of the healthcare team (Morley *et al.*, 1983). Years later, in a study by Hughes and McCann (2003), pharmacists revealed that they still felt GPs considered them to be subordinate in professional terms. It seemed that any extended role by pharmacists would be backed by GPs only if it represented support functions, provided that pharmacists did not cross the "dividing line" between them (Edmunds and Calnan, 2001, p.949). Therefore GPs were more sceptical about pharmacists taking on extended roles such as those involving them in the management of long-term medical conditions as these were regarded as crossing this boundary and potentially undermining the doctor-patient relationship.

Much research has been devoted to exploring barriers between community pharmacists and GPs. GPs have expressed concerns about pharmacists becoming involved in roles they consider to be general practice activities while community pharmacists' "shopkeeper" image (Hughes and McCann, 2003, p.601) also seems to have had an impact on the development of the pharmacist's role. Even patients seem unsure whether pharmacies are to be regarded as "clinics" or "shops" (The Patients Association, 2008) and their link to the retail environment led others to believe that they might be biased by commercial pressures (Roberts, 1988; Spencer and Edwards, 1992). The role of the pharmacist as viewed by the public is indeed complex, but some aspects of patients' perceptions of pharmacists are discussed below.

2.1.3.3 Patients' perception of pharmacists' social identity

Pharmacists attempted to reclaim their extended role as explained above, but at the start of the new millennium, the main health-related activities in the pharmacy were still seen as the dispensing of prescribed medicines, provision of advice on OTC medicines and advice on the treatment of minor ailments (Bissell *et al.*, 2000). Six million people visit community pharmacies every day in the UK, but few customers actively seek health-related advice from community pharmacists (Hassell *et al.*, 1999; Anderson *et al.*, 2004; Boardman *et al.*, 2005). A systematic review found that

the group most likely to seek health-related advice and information on OTC remedies from a pharmacist was mothers with young children (Anderson *et al.*, 2004), although this might have been due to an attempt to avoid "bothering the doctor" (Cunningham-Burley and Maclean, 1988, p.124). Pharmacists believe the reasons some patients choose the pharmacy to obtain treatment for minor ailments is that they find it difficult to get a GP appointment, are scared of visiting the doctor because of fear of serious illness or they are concerned about the cost of a prescription versus the cost of OTC medication (Hassell *et al.*, 1997). However, the majority of patients with minor ailments continue to consult their GP (Hammond *et al.*, 2004) even though these conditions could be managed by a community pharmacist (Hassell *et al.*, 2001). For some patients one reason could relate to the cost of paying for OTC medicines versus an exemption to paying prescription charges. Other reasons may include patients not regarding the pharmacy as part of healthcare services, having concerns about privacy and confidentiality within the pharmacy setting (The Patients Association, 2008) or having negative perceptions of pharmacists (Hammond *et al.*, 2004). But the disparity in patients' views about pharmacists' roles does not end here.

Patients have repeatedly indicated that they trust pharmacists (Reader's Digest, 2010; Royal Pharmaceutical Society, 2010), but studies have shown that some patients do not believe pharmacists have a significant role in patient counselling and monitoring of their use of medicines (Law *et al.*, 2003). Other research has suggested that some patients find the pharmacist 'better than the doctor', indicating that individual experience or a particular patient-GP or patient-pharmacist relationship may affect decisions when seeking advice (Cunningham-Burley and Maclean, 1988). For older adults the quality of the patient-pharmacist relationship is strongly associated with a patient-centred approach (Worley-Louis *et al.*, 2003).

Much of the research referenced above dates back to the pre-MUR era and is based on perceptions about the traditional role of the pharmacist. With the introduction of the MUR service the pharmacist's role was about to change and this change had implications in terms of the pharmacist's social identity as well as the conceptualisation of the patient-pharmacist relationship (Worley *et al.*, 2007).

2.1.3.4 The impact of the MUR service on pharmacists' role and social identity

The implementation of the MUR service presented a fundamental change in community pharmacy service provision and challenged pharmacists' social identity, conventional behaviours as well as their interaction with patients. Whereas traditionally pharmacists had taken on the role of dispensers of medicines or providers of advice and information relating to medicines or general health and wellbeing, the MUR service involved them in recruiting patients and carrying out structured consultation-type activities. Whereas pharmacists' formal links with GPs were previously infrequent, mainly reactive and often limited to queries about prescriptions, the MUR service required them to provide GPs with a summary of the MUR consultation, including any recommendations to optimise the patient's treatment as well as any agreed actions with the patient. The patient's role on the other hand was transformed from being a recipient of traditional services and advice to being an active participant in a two-way consultation process. These new roles were coupled with a new set of behaviours involving making appointments, consultation processes and form completion while the physical environment of the interaction moved from the medicines counter or other public area in the pharmacy to a private consultation room.

The new service also challenged traditional identities and behaviours of patients. However, neither patients, nor pharmacists, had previously experienced the new roles and interactions collectively known as the MUR service. Therefore, forming a perception of the MUR was a process that could be influenced by different social interactions and these interactions could be conceptualised as the social construction of the MUR. According to Burr (2003, p.5) these types of constructions are "bound up with power relations because they have implications for what is permissible for different people to do and for how they may treat others". In social sciences the idea that language is constitutive and constructive of social reality, rather than a simple reflection or representation of reality, has become more commonly accepted (Phillips and Hardy, 2002; Morgan, 2010). At the inception of the service, the social construction of the MUR was inadvertently affected through the representation of the MUR service in PILs specifically designed for patients,

specific information leaflets aimed at GPs and their staff and through the MUR service specification (PSNC, 2004) available to pharmacists.

PILs were particularly important as these fulfilled a dual purpose. Language used in these leaflets constructed knowledge of the social world of the MUR service as well as our understanding of it by redefining the identity of the pharmacist and the patient-pharmacist relationship to support and develop appropriate patient expectations as discussed above. In addition, the leaflets acted as a marketing tool in order to recruit patients to the MUR service. Therefore, this latter concept is also considered, albeit briefly, below.

2.1.4 Marketing the MUR service

In general, it is thought that in order to run a viable business, it is vital to correctly handle its marketing, especially when new products or services are being launched. This is in order to entice people to buy or access the new features. This section briefly considers commercial marketing as well as social marketing and attempts to link these concepts to the marketing of the MUR service.

Drucker's (1964) concept that every business is serving customers, markets or end-users is still relevant today because of its simplicity. The term 'business' can be conceptualised here as any viable venture whether commercial or not. Therefore, even though the NHS does not have customers *per se*, the organisation provides health-related services to patients, who, as ultimate end-users, could be considered akin to its customers. However, because the NHS is not a commercial business, there is no inherent requirement to actively market NHS services to end-users. In addition, where services have been marketed, the approach taken has not always been ideal. The following quote provides a helpful focus when considering the marketing of NHS services:

> The key aspect of marketing is an attitude of mind. It requires that, in
> taking 'marketing' decisions, the manager looks at these from the
> viewpoint of the customer. These decisions will thus be driven by
> what the customer needs and wants. (Mercer, 1996, p.12)

Hence, traditional marketing should be customer-focussed and customer-driven. In contrast, where NHS services are marketed, these have had the tendency to be launched according to the needs of the organisation, e.g. the NHS's need to save money or reduce waste, or according to the *perceived* needs of the 'customer', e.g. their need for more information about medicines. It could therefore be argued that the major aims of the MUR service of 'reducing waste' and 'improving patients' adherence to medication regimens to achieve better health outcomes' are intrinsically linked to the organisational needs of the NHS. This concept will be further elaborated below.

Marketing is a very powerful method used to bring about change in people's behaviour, especially in terms of attitudes to commercial products. Commercial marketing uses an all-encompassing approach including selection of the name chosen for the marketed product because every element of a campaign is considered important in creating the overall impression. An interesting technique used by marketers is to ensure that the commercial messages that accompany a product, focus on offering consumers short-term benefits or rewards, even though these may be associated with long-term costs, which are of course, not highlighted (Blair-Stevens, 2008). For example, advertisements of confectionery, which offers tempting products that bring speedy gratification, miss out references to long-term health costs. In the case of the MUR service, the customer (patient) is not purchasing a product. Nonetheless, the patient is being tempted to access a new service and it is important to consider that what is being offered is in total contrast to the enticement technique described above. Public sector services such as the MUR service offer patients long-term benefits, such as a longer health expectancy, at short-term costs, such as giving up smoking or implementing other lifestyle changes, which may be difficult for patients to achieve. This is clearly not as attractive as offering short-term benefits related to routine advertising, as patients are instead being asked to make sacrifices in the short-term for promised health benefit in the future.

The challenge then, is to find ways of marketing such services so that despite inherent lack of appeal, these services become attractive to potential users. The aim of a successful marketing process in this case would be to influence the patient in

such a way that s/he accesses or uses the available service(s). The adaptation of marketing methods in the context of public health has led to the development of social marketing, which is briefly considered below (NSMC: National Social Marketing Centre, 2006a).

2.1.4.1   Social marketing

In response to the Government's White Paper *Choosing Health: Making healthy choices easier* (DH, 2004), the National Social Marketing Centre (NSMC) explored "opportunities to put people at the centre of a public health strategy" in *It's Our Health* (NSMC, 2006a, p.3). This essentially meant that people's behaviour, that is why they act the way they do, had to be understood so that attempts to improve their health could include sustained support to help them change their behaviour. An example of a social marketing approach based on a good understanding of the 'customer' was implemented in a smoking cessation programme for pregnant women in Sunderland (Lowry *et al.*, 2004). The approach, which allowed the focus to be on the individual woman's needs, thoughts, beliefs and concerns rather than expecting them to fit around the existing service (NSMC, 2006b), resulted in a 10-fold increase in the recruitment of pregnant smokers onto the programme (Lowry *et al.*, 2004).

Another example of a social marketing approach this time based on clear behavioural goals is the "Food Dudes" healthy eating programme for children throughout the UK, Europe and the United States of America (USA) (Food Dudes, 2009). The aim of this programme is not to change children's diets by giving them good food, but to find ways of motivating them to eat and enjoy it. It involves biological (repeated tasting) as well as psychological (the use of role-models and rewards) factors to encourage behaviour change over time.

In terms of behaviour, French and Blair-Stevens defined health-related social marketing as "the systematic application of marketing concepts and techniques, to achieve specific behavioural goals to improve health and reduce health inequalities" (NSMC, 2006a, p.39). Indeed, social marketing focuses on promoting, establishing and sustaining changes in behaviour over time (NSMC, 2006b), as described in the example above. This seems to fit well with the aim of the MUR service, i.e. to

improve patients' use of medicines. But according to Blair-Stevens (2008) patients' actions are affected by more than 'what they know' (knowledge and information) and 'what they believe' (their attitudes, values and beliefs). The effect of non-clinical factors on a patient's behaviour and their decision to access healthcare services (or not), have been addressed by socio-behavioural models, including a myriad of theories aiming to explain people's behaviour and behavioural intentions (Feather, 1982; Maddux and DuCharme, 1997; Rogers and Prentice-Dunn, 1997; Smith, 2002; Taylor *et al.*, 2003).

One of the ways in which the MUR service was marketed to patients and pharmacists was through a series of information leaflets designed by sources that included the DH as well as pharmacy service providers. When the marketing of the MUR service is considered in relation to the concept of social marketing, it is noted that there was no evidence at the time that any of the established marketing theories or techniques had been applied to designing these leaflets. It remained uncertain whether the MUR PILs were effective in representing the MUR service to patients and successful in motivating patients to access this new service. In fact, in its first year the number of patients accessing the MUR service remained lower than expected (Blenkinsopp *et al.*, 2007b). Whether this was due to misrepresentation of the pharmacist's role or mismanagement of the marketing of the MUR remained to be investigated.

2.1.4.2   Barriers to MUR service provision

Researchers have investigated different aspects of the MUR service and identified numerous barriers to its provision and uptake. Some of this research was highlighted and discussed in more detail in section 1.5.6, Table 1.1 and Table 1.2. Reasons for the low uptake of this service were linked to staffing levels, lack of time and level of financial reward. Pharmacist factors such as confidence and problems with accreditation and wider pharmacy factors, such as establishing accredited consultation areas, problems with patient recruitment, lack of PCT support and lack of acceptance of the pharmacist's role by GPs were also identified as barriers to delivering the MUR service (Hall and Smith, 2006; Hall *et al.*, 2006; Ewen *et al.*,

2006; Foulsham *et al.*, 2006; Blenkinsopp *et al.*, 2007b; Blenkinsopp *et al.*, 2007c; Thomas, *et al.*, 2007).

Several of these factors were tackled by mentorship schemes and additional training evenings, such as those organised by Guildford and Waverley PCT[8] and Unichem[9] (Anon, 2006a; Wang, 2007). However, at the time, it was considered possible that the representation of the MUR service through its chosen name and the strategies used to market the service to patients and to other healthcare professionals could also have contributed to the low uptake of the service, especially where the low uptake was linked to patient recruitment problems. Furthermore, it remained unclear whether patient-centredness in the new formal structured MUR service had been communicated as such to patients, bearing in mind the difficulties in implementing patient-centredness in GP consultations (see section 2.1.1). The MUR service was intended to be a discussion between the patient and the pharmacist so as to facilitate patient empowerment and ultimately lead to shared decision-making. To investigate this further it was considered important to formally examine the representation of patient empowerment in the marketing material relating to the MUR service.

2.1.5 Aims and objectives

The aim of this part of the research project was to evaluate the MUR PILs used to market the service to patients in order to elucidate the portrayal of the service. The specific objectives were:

- To analyse how the MUR service was being communicated and portrayed to patients,
- To examine the way in which language and imagery associated with the MUR and employed in MUR PILs symbolised and gave meaning to the service, and
- To determine how the patient, the pharmacist and any implied power relations were represented through the MUR leaflets.

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[8] Guildford and Waverley PCT became known as Surrey PCT in 2006 and NHS Surrey in 2008
[9] Unichem rebranded to become Alliance Healthcare in 2009

2.2 Methods

A social constructionist approach (Burr, 2003) was taken to interpret the socially constructed world of the MUR service. Social constructionist research is concerned with discourse and the way language shapes the way the world is seen and understood.

Discourse analysis (Mills, 1997), a method used to analyse language used in talk and text, was used to examine the MUR PILs. Thematic analysis was considered as an alternative method, but both methods have strengths and weaknesses associated with qualitative research (Jaworski and Coupland, 2006) and as such they could be criticised for not being objective. However, in terms of its strengths, discourse analysis is able to offer in-depth, critical descriptions of language use in specific contexts. It was therefore deemed a relevant method to examine the way in which language and imagery associated with the MUR service and employed in MUR PILs symbolised and gave meaning to the service.

Discourse analysis is underpinned by epistemology (Morgan, 2010) and social constructionism theory (Phillips and Hardy, 2002; Bryman, 2008; Silverman, 2011) which further supported its relevance in this research. The epistemology that knowledge can be created through examining language for unearthing hidden meaning (Donyai, 2012) was particularly relevant while a social constructionist approach was beneficial because an attempt was made to make sense of the social world of the new MUR service. The focus was therefore not on how things worked, but on what they *meant* (Winch, 1958). In addition, this process can feed directly into the conceptualisation stage of theory-building research (Turnbull, 2002).

Discourse analysis has been applied to a wide variety of empirical topics, including a study exploring the involvement of medicine counter assistants in UK community pharmacy encounters (Ylänne and John, 2008) and a study exploring the extent to which pharmacists' advice provided during medication review consultations was accepted and acknowledged by patients aged 80 or more (Salter *et al.*, 2007). In addition, it has been claimed that a discourse perspective has "contributed

significantly to our understanding of a series of substantive topics such as gender, race and power" (Phillips and Hardy, 2002, p.33). Discourse analysis was therefore used to determine how patient and pharmacist roles within the context of the MUR service were portrayed in relation to each other and what power relations (if any) were implied.

2.2.1 Discourse analysis of the phrase "medicines use review"

Initially the meaning of "medicines use review" was considered. Whether explored from the linguistic perspective of de Saussure or from the philosophical viewpoint of Peirce this phrase could be argued to be a sign with a social meaning which 'stood for' an entirely new concept. Based on de Saussure's (1959) thinking the concept medicines use review service (the 'signified') related to only one part of this linguistic sign. The other part consisted of its associated speech sound "medicines use review" (the 'signifier'). Semiotics, the science of signs, allowed the examination of the newly created signified and signifier to seek out the deeper meaning of this sign. The Oxford English Dictionary (Soanes and Hawker, 2006) was consulted for definitions of each component of the signifier to assist with analysis.

De Saussure (1959) had argued that the signifieds themselves were arbitrary. For example, while a distinction between a train running on London's underground rail network and a train running on the national rail network is made through the use of different signifiers ('tube' and 'train' respectively), this distinction may not exist in other countries were the same word may be used for all railroad carriages drawn by a locomotive. However, nothing predetermines the nature of the signified or signifier, so rather than being a naming process, language depends on a system of intrinsic relationships. It is not the physical nature of a train that allows it to be referred to as the 8:30 London-to-Manchester train, but rather its relationship to other trains.

In the context of the MUR service then, it is conceivable that the signified "medicines use review service" would be compared with and judged against other medicine reviews or medication reviews that patients may have been aware of or experienced in the past.

2.2.2 Discourse analysis of text used in MUR PILs

MUR PILs were obtained by conducting internet searches and through personal visits to pharmacies in a South-West London area in 2006. Once the leaflets were obtained, each leaflet was read and reread in turn to gain an overall impression of the way in which all aspects of the MUR service were portrayed. Specific descriptions of the service's aims and potential benefit to patients were marked within each leaflet. Next, text associated with how the patient (the MUR service user), the pharmacist (the service provider) and their interaction (the actual MUR consultation) were portrayed was marked and these words/phrases/sentences were extracted from each leaflet. The social and psychological implications of these representations were considered and reconsidered and the text was then organised according to dominant themes. These themes were agreed and then arranged according to central themes. Images were also considered in terms of their role in portraying the MUR service including the patient-pharmacist interaction. Throughout the analysis special consideration was given to the representation of the pharmacist and patient in relation to each other and any implied power relations. It is acknowledged that personal and professional background and experience may have influenced the process and therefore the aim was to establish rigor through credibility, e.g. by using direct quotes to show an in-depth, accurate presentation of the results, conformability, e.g. by considering both positive and negative aspects of the leaflets and dependability, e.g. through detailed methodological descriptions.

2.3 *Results*

2.3.1 The phrase "medicines use review"

2.3.1.1 The signified, the MUR service

The newly created 'signified', the MUR service, referred to a service involving a number of actions on the part of the pharmacist with the aim to "improve patients' knowledge, concordance and use of medicines" (PSNC, 2004). However performing individual tasks such as discussing a patient's use of medicine and identifying drug

interactions, which form part of the MUR service, could be considered to have been part of pharmacists' core services for decades and few would argue that they were newly introduced when the MUR service was implemented. The creation of the signified was therefore considered to be a consequence of the organisation and formalisation of these tasks under the community pharmacy contractual framework to facilitate remuneration.

2.3.1.2 The signifier "medicines use review"

According to the Oxford English Dictionary "medicines" refer to a drug or other substance used to treat or prevent disease. "Use" as a verb implies taking something as a means of achieving a purpose and as a noun it is defined as the power to move or control something. "Review" is defined as a formal assessment of something with the intention of making changes if necessary.

The first component of the new signifier, "medicines" was deemed compatible with the general concept of a drug or other preparation for the treatment or prevention of a disease or illness. "Use" as part of the signifier was thought to suggest the taking or consumption of medicine(s). "Review" on the other hand was considered to be associated with a formal assessment, critical evaluation or one-sided analysis on the part of the reviewer. Based on this analysis "MUR" was considered to signify "a formal assessment of the way a patient uses their medicine(s)". Here de Saussure's (1959) claim that the concepts themselves (the signifieds) are arbitrary seemed valid as a distinction exists between a formal assessment done by a patient's GP, the "medication review", (Medicines Partnership and National Collaborative Medicines Management Services Programme, 2002) and the newly introduced community pharmacy service, the "medicines use review", even though they have a similar purpose.

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2.3.2 MUR PILs

Eleven different MUR PILs were obtained, including the official DH booklet and bespoke leaflets developed by wholesalers and pharmacy businesses (Table 2.1).

Table 2.1 MUR PILs obtained

Leaflet number	Author/Owner of leaflet
L1	Department of Health MUR booklet
L2	Vantage
L3	Unichem
L4	Alliance Pharmacy[10]
L5	Asda
L6	Assura
L7	Bakerhouse
L8	Boots The Chemist[10]
L9	Day Lewis
L10	Lloyds
L11	Tesco

2.3.2.1 Symbolising the MUR service

None of the leaflets examined explicitly described the MUR service as new, but attempted to give descriptions of what the service entailed through a mixture of text and images. The aims of the MUR service according to the various leaflets are shown in Table 2.2. No specified aims were found in L7 and L9.

The MUR interaction between the patient and pharmacist was described with inconsistent and interchangeable use of formal and informal terminology, such as "meeting" (L1, L4), "review" (L3, L5, L6, L9, L11), "review meeting" (L1), "consultation" (L2), "session" (L9), "face-to-face conversation" (L10), "discussion" (L3, L4, L6, L8), "check-up" (L4), "MOT" (L10), "chat" (L5, L8, L11), "quick" (L5), "simple" (L5) and "friendly" (L5). The leaflets were more consistent in representing the MUR service as focussed, tailored and individualised (Table 2.3), while highlighting the private and confidential nature of the interaction (Table 2.4).

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[10] In 2006 Alliance Pharmacy and Boots The Chemist merged and became collectively known as Boots.

Seven leaflets (L3, L4, L5, L8, L9, L10, L11) gave an indication of the expected duration of the MUR consultation with quantitative indications ranging from 10 to 20 minutes. All but one leaflet (L9) described the service as free, six referred to the NHS or the MUR being an NHS service (L1, L4, L5, L6, L7, L11) with three of these (L1, L6, L7) incorporating the NHS logo.

Table 2.2 Aims of the MUR service according to the PILs obtained

"The meeting is to: • Help you to find out more about the medicines you are taking • Pick up any problems you are having with your medicines • Improve the effectiveness of your medicines • Get better value for the NHS" (L1)
"Would you like to: • Know more about the medication you are taking and why you are taking it? • Check that you are taking your medicines in the right way? • Find out about any side effects you may experience? • Talk about any other treatments available?" (L2)
"The discussion will help you: • Learn more about the medicines you are taking • Identify any problems that you may be having with them • Improve the effectiveness of your medicines for you" (L3)
"Medicines Check-Up provides you with a great opportunity to: • Ask questions about your medicines • Discuss any worries you might have • Enquire about possible changes to your lifestyle" "The aim of the check-up is to ensure that the medicines you take are right for you and are working effectively." "The check-up aims to help you better understand the medicines you take, how they work and what they do." (L4)
"Some drugs cause occasional side effects, like tiredness or skin rashes. Occasionally one drug can combine with another you're taking to produce an unexpected result. A Medicines Use Review is a chance to discuss all this. Perhaps most importantly, it's a chance to really understand the medicines you take, how they work and how they help you." (L5) "The aim is to see if you're happy with what you take and if there's any room for improvement." (L5)
"A review with the pharmacist will: • Help you understand more about the medicines you are taking • Help you understand how best to take your medicines • Improve the outcome of your treatment • Help identify and possibly reduce side effects • Help identify alternative treatment options and recommendations to your doctor" (L6)
"To help you get the best out of your medicines" (L8)

> "By the end of your MOT you'll:
> - Know more about your medicines and what they do
> - Understand the best way to use your medicines
> - Feel confident your medicines are now working to benefit your health" (L10)

> "Our Medicine Review service is a free and easy way to help you find out more about:
> - The medicines you are taking
> - What you are taking them for
> - Any problems you may be having with them" (L11)

Table 2.3 Terminology portraying a focussed, tailored and individualised approach to the MUR service

Phrase	Leaflet
"concentrate on you and your medicines"	L1
"your review meeting"	L1
"one to one with our pharmacist"	L4
"a meeting with your pharmacist at your local ... Pharmacy to discuss your current medicines"	L4
"depending on individual circumstances"	L4
"bring your medicines chart" ... "this will help our pharmacist to give you the best possible advice"	L4
"want you to gain the maximum benefit from your check-up"	L4
"whether they're right for you"	L5
"depending on your circumstances"	L5
"what happens next depends on what you discuss"	L5
"all about helping you"	L5
"you'll get the best possible advice"	L5
"your personal medication review"	L6
"designed to help you"	L6
"to help you get the best out of your medicines"	L8
"the service complements the care you receive from your GP or consultant"	L9
"we know everyone has different needs"	L10
"let us help you get more from your medicines"	L11

Table 2.4 Terminology portraying a private and confidential service

Phrase	Leaflet
"a private area within the pharmacy"	L1
"your details, and your discussion, will be kept private"	L1
"private consultation with your pharmacist"	L2
"confidential review of your medicines"	L3
"in our private consultation area"	L4
"privacy to discuss your medicines freely and openly, without being overheard"	L4
"confidential service"	L5
"friendly chat in complete confidence"	L5
"discussion is private and confidential and will take place in a private consultation room"	L6
"in a private area and all information provided will be confidential"	L9
"private, face-to-face conversation"	L10
"in our quiet area"	L11

Nine of the eleven leaflets displayed a picture on the first page, but none of them depicted an actual MUR interaction or environment. Three of these leaflets (L1, L6, L8) used colour photographs to present an interaction between what seemed to be a patient and a pharmacist (although this might also have been another pharmacy staff member). In two of these leaflets (L1, L8) the interaction was shown across the community pharmacy medicines counter within a public area of the pharmacy with other staff members seen in the background. The third photograph (L6) showed the interaction taking place in an area that looked like the pharmacy's dispensary. Four leaflets (L2, L3, L4, L5) displayed various pictures of tablets and capsules while another (L9) showed a man with a surfboard. The final picture (L11) was of an older woman resting her head on a younger woman's shoulder (possibly her daughter or other family member). Only two leaflets (L1, L4) displayed pictures that related to the MUR elsewhere in the leaflet. In the first leaflet (L1) the small photo showing a patient and pharmacist discussing an inhaler appeared on page 7 out of 16. The second leaflet (L4) featured a small photo of an empty consultation room on page 5 out of 8.

In some of the leaflets the described benefits of accessing the MUR service seemed intangible, for example preventing unnecessary waste (L1), helping the patient to feel better (L5), putting the patient's mind at ease (L5) and supporting the patient's GP (L8, L11). In addition, any potential benefit from accessing the MUR service was devalued in leaflet L1 by statements such as "not every pharmacy will be offering the service", "only a certain number of reviews" and "may have been a local decision to make certain diseases or groups of people a priority".

2.3.2.2   Main themes emerging from the leaflets

2.3.2.2.1   Portrayed patient identities and behaviours

Generally the leaflets portrayed the reader, or potential MUR recipient, as someone with a long-term medical condition, thereby assigning him/her to a group of people in need of health care. In keeping with this traditional identity of a patient, the reader was categorised as a medicine(s) user. Bearing in mind that the MUR service was

designed for people who were prescribed medicines for the treatment or management of long-term conditions, this description was to be expected. However, to the role of medicine user the leaflets attached a need for patients to "understand" or know more about their medicines through the MUR (L1, L2, L3, L4, L5, L6, L7, L10, L11) (Table 2.5).

The notion of becoming an 'informed' patient was associated with a series of proactive behaviours that hitherto were not part of the traditional patient's role in relation to their interaction with a pharmacist. For example, in the context of the MUR service, and prior to the actual MUR consultation, the patient was expected to become involved in activities such as asking for a review at the pharmacy, booking an appointment with the pharmacist, preparing for the review by completing a medicine chart and noting down any relevant questions. In addition, the leaflets outlined required activities during the patient's "meeting with the pharmacist" such as asking questions, providing the pharmacist with information and negotiating and agreeing an action plan of which they would receive a copy. Some leaflets even suggested that the patient had the responsibility to determine whether an MUR would be appropriate for them and worked to empower patients to initiate the review with the pharmacist. In contrast, at least one leaflet implied a more paternalistic relationship indicating that an invitation from the pharmacist would allow patients access to the MUR service (L1). Other phrases supporting the traditional patient identity of a passive recipient of medicines and information included "Your GP knows about this service and will continue to be in charge of your treatment plan. Any recommendations about your medication will be assessed by your GP" (L9) and "all about the medicines you *have* to take" [italics added] (L11). In addition the patient was informed that they were going to be assessed by the pharmacist because they may have been putting their "health at risk without even realising it" because they may have been doing things "wrong" (L10).

In addition to being a 'medicine user', the patient was typified as someone with a problem, question or concern relating to their medicine (Table 2.6). Some leaflets (L1, L4, L5, L11) even included a list of possible questions that the patient may wish to ask. Presumably patients were required to identify with one or more of these representations which in turn would persuade them to access the MUR service

despite the fact that access to free advice and information from any pharmacist would have been available through existing community pharmacy services even before the MUR service was introduced.

Table 2.5 Terminology used to represent new patient identities

Examples of phrases	Leaflet(s)	Sub-theme	Central theme (New patient identity)
"find out more about the medicines you are taking"	L1, L6	Gathering information	Becoming an informed patient
"advice can be sought"	L3		
"you'll get the right information"	L5		
"find out more about the medicines you are taking, what you are taking them for, any problems you may be having with them"	L11		
"better understand your medicines"	L3, L5	Improving understanding	
"better understand the medicines you take"	L4		
"you'll understand the best way to use your medicines"	L6, L10		
"together you will talk through any questions or concerns"	L1	Obtaining answers	
"ask questions"	L4, L5		
"it's better to be sure"	L5		
"might feel better just having your mind put at ease"	L5		
"ask your pharmacist"	L6		
"know more about the medication you are taking and why you are taking it"	L2, L6, L7	Improve knowledge	
"learn more about the medicines you are taking"	L3		
"get the most from each medicine"	L4, L5, L7		
"you'll know more about your medicines and what they do"	L10		
"get to know all about your medicines"	L11		
"you can ask for a review"	L1	Initiating the MUR (optional enquiry)	Being proactive and prepared
"ask inside"	L3		
"ask your pharmacist to get a review"	L6		
"ask the pharmacist if you're interested"	L8		
"ask us for you free prescription MOT"	L10		
"ask at the pharmacy"	L11		
"should ask your pharmacist for an MUR"	L3	Initiating the MUR (imperative)	
"you should aim to request a session with your pharmacist"	L9		
"that's why it is so important to ask for your free prescription MOT today"	L10		
"get your prescription checked"	L10		
"book a … consultation"	L2	Action required to access the MUR	
"book an appointment"	L3, L5, L11		
"arrange a time"	L4		
"pop into your local … pharmacy"	L5		
"tell them you'd like to discuss what you're currently taking"	L5		
"arrange an appointment"	L6		
"book yourself in"	L7		
"booking your medicines advice session"	L9		
"signs to look out for that can tell you if you need a Prescription MOT"	L10		

"how you might prepare"	L1		
"think about your questions, concerns and suggestions … and write them down"	L1, L4		
"fill in the chart"	L1, L4, L5, L11		
"make a list"	L3		
"bring all … your medicines with you"	L3, L9		
"preparing for your medicines check-up"	L4		
"complete the form"	L4		
"along with all your medicines you should also bring your repeat prescription request form"	L4	Preparation required	
"make notes"	L5		
"spend a short time thinking about what you would like to ask"	L6		
"bring details of any medicines"	L6		
"list all your medicines"	L8		
"consider questions you may wish to ask"	L8, L9		
"use the suggested list of questions to make sure you cover all the points about your medication"	L11		
"questions you could ask"	L1		
"raise these or any other concerns"	L1		
"pharmacist … will have questions to ask you"	L1		
"tell them as much as you can"	L1		
"say whatever you want"	L1		
"you will confirm the medicines you are taking"	L1		
"talk about"	L1, L2, L4, L5, L7, L11	Having an honest and open two-way conversation	
"discuss"	L1, L3, L4, L5		Actively participating in decisions about own health care
"discuss freely and openly"	L4		
"be as honest as you can"	L4		
"the pharmacist may also ask you"	L4		
"ask questions"	L4, L5		
"you'll be asked"	L5		
"have a chat"	L5, L8, L11		
"ask your pharmacist"	L6		
"face-to-face conversation"	L10		
"changes you have agreed"	L1		
"no changes will be made against your will"	L1		
"changes will only be made with your agreement"	L4	Patient making decisions / Patient taking part in decision-making	
"doctor will review any suggested changes in consultation with you"	L4		
"changes you might want to make to your medicines"	L5		
"the final decision will rest with you and your GP"	L9		
"you are under no obligation to accept the recommendations"	L9		

"you can ask for a copy to be sent to another health professional"	L1		
"enquire about any possible changes to your lifestyle"	L4		
"make sure what you take is right for you"	L5	Patient has responsibility for own health care	
"keep on top of what you're taking"	L5		
"keep track of what medicines you're taking, what you're taking them for, and whether they're right for you"	L5		
"keep track of the medicines you're taking"	L11		

Table 2.6 Representing the patient as someone with medicine-related questions, problems or concerns

Examples of phrases	Leaflet(s)	Patient representation
"have questions about your medicines"	L1	Patient with questions about medicines
"know how my tablets worked and how long I might need to stay on them"	L1	
"some people have questions or worries and don't know who to talk to"	L1	
"Ever had a question about your medicines but weren't sure who to ask?" [Title]	L3	
"questions about your medicines"	L4	
"Most of the time we rely on their packaging to tell us about their effects. But what happens if you combine several different medicines? Will it make your medicines less effective, or perhaps cause unwanted side effects?"	L5	
"Ever wanted to ask a question about your tablets but never dared to ask?" [Title]	L7	
"taking medicines is often trouble-free, but there can be problems"	L1	Patient with medicine-related problems
"can be difficult to take medicines – for example, if they're hard to swallow"	L1	
"some people end up taking lots of tablets at different times"	L1	
"when someone is taking lots of medicines it can be difficult to know what each one is for"	L1	
"there are medicines which don't mix with other medicines or some foods"	L1	
"some people get side effects from one or more of their medicines"	L1	
"sometimes forget to take your medicines"	L3	
"problems that you may be having with them"	L3	
"any problems you are having"	L5	
"forget to take your medicines"	L7	
"you find it difficult to take your medicine"	L10	
"you forget to take your medicine"	L10	
"your symptoms are not under control"	L10	
"you are experiencing side effects"	L10	
"you may have concerns"	L1	Patient with concerns about medicines
"raise these and any other concerns at a medicines use review"	L1	
"Worried about the side effects?"	L3, L7	
"worries you might have"	L4	
"any concerns you have"	L4	
"worries you've got about your medicines and your health"	L5	
"Do I worry about the medication I'm taking?" [Title]	L9	

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2.3.2.2.2   Portrayed pharmacist identities and behaviours

The MUR PILs used a variety of pronouns to describe the pharmacist and their relationship with (their) patients. For example, the description "your pharmacist" (L1, L2, L3, L4, L6, L9, L10, L11) could infer an existing relationship between the patient and one dedicated or committed pharmacist. Patients are not obliged to register with a particular pharmacist as they would with a GP. In this respect the leaflets worked to create a new identity for the pharmacist as a practitioner who could become the patient's regular pharmacist, and a key health professional, at least in relation to the MUR service. The descriptions "a pharmacist" (L11), "the pharmacist" (L4, L6, L8, L11) and "our pharmacist" (L3, L4, L5, L7, L10) possibly created the concept of a detached pharmacist in terms of their relationship with the patient. Although arguably the use of "*our* pharmacist" could also have generated the idea of a pharmacist belonging to an official body or organisation which might in turn enhance the credibility of *the* pharmacist. In many instances, the pharmacist was described as one of a whole group of people who would look after the patient, for example "team" (L4), "we" (L4, L6, L10) and "us" (L10, L11). In the main the pharmacist was positioned as a member of the healthcare team and as someone with expert clinical knowledge on how to "get the most from medicines". This reinforced the concept of the pharmacist's identity as an important healthcare professional with whom to consult. The leaflets portrayed a knowledgeable and skilled, yet friendly and caring pharmacist (Table 2.7), who was formally committed as part of the MUR service to involve patients in the MUR discussion and to educate them by providing tailored advice and information (Table 2.3) to the extent that they would "understand their medicines". Other specific pharmacist behaviours conveyed through the leaflets included reassuring the patient, negotiating with the patient and keeping records of the discussion (Table 2.8). Although the MUR service was not designed to be a clinical medication review session, some leaflets suggested that the pharmacist might recommend changes to a patient's prescription medicines (L1, L4, L5) or identify alternative treatment options (L6) even though the pharmacist did not have access to the patient's "medical history" or "details" about their illness (L1).

Table 2.7 Terminology used to portray the pharmacist's identity

Examples of phrases	Leaflet(s)	Central theme (Pharmacist's identity)
"properly trained"	L1	Expert in medicines
"will have been assessed"	L1	
"have the right knowledge"	L1	
"skills"	L1	
"trained specifically in how medicines work"	L4	
"highly trained professional"	L5	
"understand the use of medicines"	L5	
"skilled pharmacists"	L5	
"expert pharmacists"	L5	
"expert knowledge"	L5	
"rest assured you'll get the right information"	L5	
"fully qualified"	L5	
"can be solved by your pharmacist"	L5	
"gives you accurate advice"	L5	
"pharmacist is specifically trained on how medicines work"	L9	
"if there's an urgent problem ... talk to your pharmacist about it straight away"	L11	
"copy of the form will be given to your GP"	L3	Member of the healthcare team
"copy will be sent to your GP"	L4	
"work closely alongside local doctors, nurses and other health professionals"	L4	
"work closely with other local health professionals"	L5	
"aim to request a session with your pharmacist once a year"	L9	
"support your doctor"	L11	
"listen and help"	L1	Friendly and caring
"ready to hear your concerns"	L1	
"because we care"	L4	
"very friendly"	L5	
"friendly ... pharmacist"	L11	

Table 2.8 Pharmacists' roles and behaviours as described in the MUR PILs

Examples of phrases	Leaflet(s)	Pharmacist's roles and behaviours
"would you like to know more"	L2	Educates patient by providing verbal and written information
"advice can be sought from your pharmacist"	L3	
"this discussion will help you learn more"	L3	
"you will also get a copy"	L3	
"bring your medicines chart" ... "this will help our pharmacist to give you the best possible advice"	L4	
"offer information"	L4	
"provided for you to take away"	L4	
"notes for you to take away"	L5	
"discuss how well you think your medicines are working"	L1	Involves patient in two-way discussion
"you can ask anything at all"	L1	
"together you will talk through"	L1	
"find out how you take your medicines"	L1	
"find out if you have enough information about them"	L1	
"will have questions to ask you"	L1	
"discuss"	L3, L4, L5	
"discussion with you"	L4	
"ask you additional questions"	L4	
"ask questions"	L4	
"you'll be asked"	L5	
"you want to ask"	L5	
"benefit you think you get"	L5	
"discuss any changes you may want to make"	L5	
"talk about"	L7	
"have a chat"	L8	
"conversation"	L10	
"kind of questions the ... pharmacist will be able to help you with"	L11	
"answer any concerns"	L4	Reassures patient
"talk about any worries"	L4	
"it's better to be sure"	L5	
"having your mind put at ease"	L5	
"agreed during meeting"	L1	Negotiates with patient
"with your agreement"	L4	
"both happy with"	L5	
"fill in a form"	L1	Keeps records of discussion
"will be logged by the pharmacist"	L3	
"will make notes"	L5, L11	

2.4 Discussion

The MUR service formalised community pharmacists' advice-giving role and introduced new sets of behaviours associated with the patient-pharmacist interaction while the interaction itself moved to a private consultation area. However, people's actual behaviour is influenced by a multitude of factors, some of which have been explained through a variety of sociological models and theories. Even language should not just be considered a mode of communication as it helps to construct what is real, creates social interaction and influences behaviour (Burr, 2003). Therefore the potential meaning of the name of the new service "medicines use review" to its users was examined.

2.4.1 The signifier phrase "medicines use review" and the signified

It is conceivable that the focus on patients' use of medicines played a role in the development of the phrase "medicines use review" to signify the nature of this service. The first component of the new signifier, "medicines" was compatible with the general concept of a drug or other preparation for the treatment or prevention of a disease or illness. Its inclusion in the signifier was not problematic because this service was designed for those who were prescribed medicines. However, it is known that about half of patients on long-term medication do not take their medicines as prescribed (Haynes *et al.*, 2002; WHO, 2003; DH, 2005a; Horne *et al.*, 2005). If the word "use" is meant to signify the taking or consumption of medicines, it is inextricably linked to what these patients are potentially *not* doing and therefore has the potential to act as a barrier to accessing the service. "Review" on the other hand was associated with a formal assessment, critical evaluation or one-sided analysis on the part of the reviewer. These actions are not fundamentally associated with a concordance-centred consultation which should include negotiation, reaching agreements and recognising the patient as a partner in decisions regarding their health and treatment, in other words, be patient-centred. Based on these findings it is possible that the implicit meaning of the phrase "medicines use review" service to its potential users could in itself have acted as a barrier to accessing the service and

may have influenced patient recruitment. However, patients' understanding of the phrase "medicines use review" was not sought and thus these results remain theoretical.

It should also be noted that different MUR PILs used different signifiers for the MUR service, including Prescription MOT (L10) and Medicine Review (L11). In 2006 Alliance Pharmacy spearheaded their public MUR campaign with the term "medicines check-up". At the time the research group suggested that this may be a more appropriate signifier for the MUR service (Donyai and Van den Berg, 2006) as 'check-up' is an immediately recognisable term associated with routine assessments, for example by GPs, dentists and optometrists. By 2012 "medicines check-up" was used by the NPA as well as various other community pharmacies, including Boots, Newlands and Sainsbury's Pharmacies to signify the MUR service. Lloyds Pharmacy launched their television advertising campaign promoting their 'medicines check-ups' in June 2011 (TellyAds, 2012).

2.4.2 The MUR PILs

A particular recruitment and marketing tool used by pharmacists was the specially designed MUR PILs. These leaflets were examined through discourse analysis.

2.4.2.1 The social world of the MUR service

Discourse cannot be separated from its social context, which has consequences in terms of how language and discourse are viewed. One important aspect to consider is the social effect produced by the reader's interaction with the text. This suggests that experiences and events are categorised and interpreted according to constructs already available (Mills, 1997). The incorporation of the words "NHS" and the NHS logo in the MUR leaflets may have been sufficient to create a perception of the nature of the MUR service in the patient's mind. It is also conceivable that a patient would categorise (Turner, 1987) their relationship with a community pharmacist according to their traditional interaction in the pharmacy, e.g. buying OTC medicines or obtaining prescription medicines. Any further written information (discourse)

about the service would therefore be interpreted against this background. In the absence of existing experience or knowledge of the MUR service, PILs helped to conceptualise the MUR. Consequently adequate information was fundamental to highlight differences between this service and existing or traditional community pharmacy services. Even though the patient was still portrayed in their traditional role as someone receiving health care, including medicines, the leaflets hinted at the patient's increased responsibility to take ownership of their health by 'understanding their medicines' and playing a more active role in their treatment. This level of empowerment was accompanied by a marked change in the behaviour expected from the patient, which included making appointments with pharmacists, preparing for the review, filling in medicines charts and negotiating and agreeing action plans. Yet none of the leaflets examined explicitly described the MUR service as new and hence they presupposed patients would be willing to become involved in these activities that were outside of their pre-existing relationship with pharmacists without an explicit indication of impending benefits. In the context of the leaflets being used as a marketing tool, it is unlikely that the associated improved "understanding" of one's medicines would be a sufficient 'benefit' to encourage patients to access the MUR service.

The benefits that were described in the leaflets examined were not evidence-based, e.g. "would make you feel better", nor patient-orientated, e.g. "prevents unnecessary waste". The MUR service involved an additional health-related consultation for the patient and was described as a service designed to support the patient's GP, although there was no indication of how this would happen. The descriptions of 'benefit' included in the leaflets were potentially insufficient to convince patients that there was any health-related benefit for them in spending additional time in consultation with the pharmacist. This was supported through underlying assumptions in the leaflets about attitudes that might lead patients to make an appointment with the pharmacist. Some of the leaflets focussed on motivating people to access the service by focussing on the perceived value (Lau et al., 1986) that patients would place on their health, for example by portraying images of family life (the patient and her daughter) or of someone healthy enough to enjoy life (the man with his surfboard). However, it is not possible to comment on the generalisability of these findings as patients' views on the leaflets and their

understanding of the potential benefits of the MUR service were not sought. While this shortcoming is acknowledged, the results presented here may prove informative when future PILs to promote community pharmacy services are designed.

2.4.2.2 The reactive versus proactive approach

In the main the leaflets appeared to promote the service to patients with issues or problems related to medicine-taking assuming that these problems would encourage patients to access the service. In addition, there is an implication that patients should have identified these problems themselves. This seems to be in keeping with traditional access to primary care services where an appointment with a healthcare provider to obtain advice or treatment was generally the result of a health-related need identified by the patient. The leaflets therefore portrayed the MUR as a reactive service with the pharmacist helping a patient with a problem. However, the MUR service could achieve its purpose with a more proactive approach, allowing patients access to the service even though they may not have, or perceive to have, 'a problem'. A patient cannot make an appointment with their GP merely to have a "chat", but the possibility of "talking" to the pharmacist during the MUR consultation could provide patients with an opportunity to voice their views and feelings about their treatment, explain their understanding of their medicines and how (or whether) they are taking it. From the pharmacist's perspective the MUR would then become an opportunity to listen to patients' views and concerns, explore their use and improve their knowledge about their medicines, address any resulting or potential problems and pre-empt side effects or interactions. Hence the focus would be on a patient-centred discussion so as to empower the patient through the provision of effective communication of health information and thus enabling patients to make informed decisions about their health and treatment and to manage their conditions at home. However, without the two-way discussion during the MUR consultation, the pharmacist would remain unaware of their patients' "actual use of medicines" (PSNC, 2004) and problems that were not identified by patients themselves would remain unidentified. In this regard a well-known quote from the former USA Secretary of Defence, Donald Rumsfeld, may be appropriate:

> "...as we know now, there are known knowns;
> there are things we know we know.

We also know there are known unknowns;

that is to say we know there are some things we do not know.

But there are also unknown unknowns –

the ones we don't know we don't know."

Through a proactive approach to the MUR service pharmacists could explore those 'things' that patients 'don't know they don't know'. The service could then potentially become beneficial not only to all patients who are prescribed long-term medication by increasing self-efficacy and autonomy, but also to healthcare providers and the NHS overall.

2.4.2.3 Empowering patients through the MUR consultation

The MUR consultation was described with interchangeable use of formal and informal terminology, the latter presumably to portray a negotiation model (Bury, 1997) of interaction, although this would be in conflict with the portrayal of the pharmacist's critical assessment implied by the word "review". Nevertheless these inconsistent messages could potentially leave the patient unsure as to the cooperative nature of the service and subsequently their intended role in the MUR consultation. This was further compounded by the disparity between what was intended with the MUR and what was portrayed through the MUR leaflets in terms of the illustration of the environment within which the MUR was to take place. While the benefits of using pictures in health material have been well established (Houts *et al.*, 2006), none of the leaflets incorporated any pictures showing an actual MUR interaction on the front page. In fact, the only two pictures relating to the MUR service were small and appeared towards the middle of the relevant leaflet. In relation to pictures the emphasis remained on the traditional patient-pharmacist interaction across the medicines counter where their discussion could potentially be overheard by others in the pharmacy. This was not helpful in promoting the power relationship of the patient on a par with the healthcare professional intended in the MUR consultation.

Where the leaflets attempted to convey a degree of patient empowerment this was through the description of various proactive patient roles with the aim of seeking and

obtaining information from the pharmacist in order to "understand" their medicines. These activities presented a major shift in the patient's portrayed identity from being a passive recipient of medicines, i.e. being a traditional 'patient', to becoming a proactively informed individual taking part in decisions relating to their own health care. However, even though a degree of patient autonomy was implied, the ultimate goal of the MUR service was for the patient to become more informed about their medicines through knowledge imparted by the pharmacist, a friendly and caring expert in medicines.

2.4.2.4   The pharmacist as patient educator to improve adherence

The pharmacist's social identity and conventional behaviours were arguably challenged through the introduction of the MUR service because as part of this service they were required to involve patients in a two-way discussion about medicines and negotiate with them. While the MUR leaflets worked to create these new identities, they continued to portray a traditional pattern of patient-pharmacist relationship with the pharmacist now formally in charge of educating the patient and the patient responsible for understanding their medicines and taking them more appropriately. Wilcock and Harding (2008) also reported that pharmacists largely perceived the MUR service as focussing on educating the patient. There remains a tension between patient empowerment achieved through a patient-centred consultation and patient education that hides a biomedical agenda focussing on compliance (Dixon-Woods, 2001; Henwood et al., 2003). Although the MUR service aimed to "improve patient's knowledge, concordance and use of medicines" (PSNC, 2004), the leaflets described the service as focussing more on 'improving use of medicines' than 'improving concordance'. It is interesting to note that in a previously updated MUR service specification (PSNC and NHS Employers, 2012a) the word "concordance" in relation to the MUR service's aim has actually been replaced by the word "adherence". While concordance has its roots in the philosophy of patient empowerment (Feste and Anderson, 1995), adherence is considered to highlight the organisation's need to ensure patients are taking their medicines as prescribed and therefore not following a social marketing approach. This may be an indicator that difficulties in achieving patient-centredness resulting in patient empowerment in the patient-professional interaction, including the MUR, still remain.

Clearly then, there were potential problems with regards to the marketing of the MUR service and it has been argued that the name of the service and information leaflets developed to introduce the service to patients could be improved. Furthermore, it was argued in this chapter that these aspects could have acted as barriers to recruiting patients for the MUR service. However, in terms of patient recruitment, questions around prioritisation and patient selection for the MUR service remain. In addition, the quality of the MUR consultations is another topic to bear in mind. These points will be considered in the next chapter.

2.4.3 Study limitations

MUR PILs available online and in the South West London area at the time of the MUR service's inception were included. This did not present an exhaustive list of all MUR PILs that were produced by pharmacy chains or groups in other areas.

Although this study investigated how written information was used to describe the MUR service to patients, it did not take account of the level of literacy (Davis *et al.*, 2007) required to fully understand the MUR PILs.

No patients were consulted on their actual understanding of the MUR service based on the information provided in these leaflets limiting the generalisability of the findings.

CHAPTER 3 : ADDRESSING THE QUALITY OF THE MEDICINES USE REVIEW SERVICE THROUGH AUDIT AND CONCEPTS RELATING TO PATIENT PRIORITISATION

3.1   Introduction

The MUR community pharmacy service formalised pharmacists' advice-giving role and for the first time pharmacists receive a financial reward for helping patients understand and take their medicines appropriately. Pharmacists are remunerated for each MUR delivered up to a maximum of 400 MURs (since 2007) per pharmacy per year (PSNC, 2010g) (see section 1.5.4 for more detail). At the end of the 2008/2009 financial year, there were approximately 10,500 pharmacies in England (The NHS Information Centre, Prescribing Support Unit, 2009). If all these pharmacies had delivered the maximum number of MURs during that year (a total of 4.2 million MURs) that would have equated to an annual MUR for just over a quarter of the 15.4 million people in England with one or more long-term medical conditions (DH, 2010b). The reality is that during that year pharmacists delivered about a third of the maximum number of MURs allowed (PSNC, 2012b). Yet, in 2008 the White Paper *Pharmacy in England, Building on Strengths – Delivering the Future* (DH, 2008a) implied that already there was too much focus on the quantity of MURs delivered, rather than on the quality of the service. Some pharmacists even voiced their concerns in formal letters to *The Pharmaceutical Journal*, associating the steady increase in the volume of MURs delivered and subsequent increase in revenue with a decrease in the service's worth (Murphy, 2007; Anon, 2008; Donlon, 2008; Richards, 2008). The White Paper offered a number of suggestions to address this perceived imbalance (DH, 2008a), including:

1   Introducing service **quality mechanisms** such as peer review audits of MURs, and

2   Focusing on **prioritisation of MURs** to ensure the service was delivered to those who may benefit most and to meet local health needs.

This chapter is concerned with tackling these two suggestions. In order to provide relevant background the concept of measuring the quality of the MUR service, specifically through audit, is first considered. Audit routinely takes place in healthcare services but audit of the MUR service is yet to be established fully. There is the potential to conduct peer reviews of MURs either through prospective observation of practice or retrospective review of completed MUR paperwork but both are beset by potential problems. Next the subject of MUR prioritisation is considered. Although at the time this research was conducted, no specific guidance on prioritisation existed, the DH subsequently established guidelines on which patient groups to target, based on British National Formulary (BNF) (Joint Formulary Committee, 2012) classifications of medicines. This research also used BNF classifications to categorise prescribed medicines and relate them to medication complexity. The concepts of MUR prioritisation and specifically medication complexity and its quantification using the Medication Regimen Complexity Index (MRCI) are considered in detail and an approach to facilitate patient selection for the MUR service that is still novel despite subsequent DH guidelines is explained.

3.1.1 Measuring MUR quality through audit

The concept of measuring quality in terms of health and pharmaceutical care is not new. In the past though, it could be argued, there was more of an emphasis on a healthcare provider's professional judgement to ensure patients received high quality medical care (Brook et al., 1996) and as such the concept of quality management and its control in health care did not seem as advanced as they were in the commercialised industries and businesses (Komashie et al., 2007). Although the quality of health care is arguably difficult to define (Donabedian, 1966), a variety of methods of quality assessment in health care have been described, including that of audit (Brooke et al., 1996).

Audit has been described as a process to find the answer to whether the right thing is done in the right way (Smith, 1992; Benjamin, 2008). Audit is also viewed as an important instrument to ensure high standards of professional performance (GPhC: General Pharmaceutical Council, 2010) and as such has been included as a

component of the essential service clinical governance (PSNC, 2010h) in the community pharmacy contractual framework (The Pharmaceutical Services Directions, 2005).

In 2006, fourteen months after the MUR service was introduced, 31 standards for auditing the systems and processes associated with the MUR were published for the first time (RPSGB, 2006). These standards were largely based on the MUR service specification (PSNC, 2004) and focussed on ensuring that the MUR processes met legal, contractual and ethical responsibilities and were in line with good practice guidance. The standards covered three areas, namely premises (4 standards), process (25 standards) and content (2 standards) which largely related to Donabedian's (1966) own model of quality assessment that recognises structure, process and outcome as interconnected components.

Requirements relating to the first two audit areas, the pharmacy premises (structure) and the process of delivering the MUR service (process), had been set out in legislation (The Pharmaceutical Services Directions, 2005) and their subsequent amendments. The third area covered within the MUR audit standards, namely content, was where the real benefit to the patient and the quality of the service could presumably be assessed. This area would also give an indication of the expected outcomes of the MUR service. However, just the following two criteria included in the audit related to this aspect of the service: 1) Only issues around compliance and concordance should be raised by the pharmacist during an MUR, and 2) The patient should be given adequate opportunity to discuss any issues they may have and/or to ask questions. These standards clearly do not allow the full assessment of the content or potential quality of the MUR service, but there was some evidence relating to the audit of MURs already in the literature.

In 2006 a national pharmacy chain conducted an audit of the MUR service and found that 47% of patients (n=398) indicated they would make changes with regards to how they took their medicine(s) as a result of the MUR consultation (Anon, 2006b). The results also showed that 55% of patients had an issue with their medicines that the pharmacist could resolve. In addition, 95% of customers were satisfied or very satisfied with the service, but this was not reported in the context of quality and no

further information relating to the quality of the service was published. A year after the introduction of the MUR service a small study in Wales aiming to identify criteria for assessing the quality of MUR referral documentation was carried out (James *et al.*, 2008). Through a two-round electronic Delphi technique, consensus was achieved on 20 statements based on the MUR form. Although the study provided assessment criteria to enable evaluation of completed MUR forms, the feasibility, reliability and validity of these indicators as quality indicators to be used as part of an audit had not been investigated. In addition, this study was carried out based on statements relating to the original MUR form (which was replaced in 2007), limiting its usefulness in relation to MUR documentation that was subsequently introduced. The study also failed to include the views of pharmacists and GPs. Apart from this, at the time of the current research, no other information existed relating to the audit of MURs.

Then in 2009, the RPSGB, the Royal College of GPs and the Clinical Audit Support Centre Ltd. launched their national multidisciplinary audit on MURs involving community pharmacy, general practice, Primary Care Organisations (PCOs) and patients who had received a MUR (RPSGB, 2009a). The aim of the audit was to review the effectiveness of MURs from the perspectives of various participating groups and to improve the quality of MURs, where appropriate. The audit focussing on patients' perceptions will be discussed in more detail in Chapter 4. Results from the first audit showed that 80% of pharmacists made recommendations to patients as part of the MUR consultation with 93% of patients indicating that they were likely to follow pharmacists' advice about medicines given and 84% believing the MUR service improved their knowledge about their medicines (Anon, 2010). Although these results were positive in terms of the MUR service meeting its aims, patients were not subsequently followed-up and the impact of pharmacists' recommendations could therefore not be assessed. Pharmacists' recommendations were categorised according to seven audit criteria, including lifestyle recommendations, interactions or contraindications, adherence, synchronisation of repeats, patient to talk to GP, signposting for other services and signposting for further information. However, there was no assessment of the appropriateness of pharmacists' recommendations and while the audit resulted in recommendations on how to improve MURs, these did not relate specifically to improving their quality. The National Pharmacy Association

(NPA) and Primary Care Pharmacists' Association (PCPA) (2010) also published a report on their *Medicines Use Review support and evaluation programme* which determined whether an educational intervention and structured support within a PCO could improve the quality of MURs. A number of recommendations were made, including recommendations for developing mechanisms for evaluating the quality of MURs and clarifying which patients to target for the MUR. In addition, the report concluded that a process of peer review would be useful in helping pharmacists to undertake effective MURs.

In summary, at the time this research was conducted, there was a drive from the DH, as per the 2008 White Paper, towards limiting MURs so that only those deemed of acceptable quality would be conducted and remunerated. This was despite the fact that in theory three times the number of MURs could have been conducted before encroaching on the budgetary limits for the service. Pharmacists too had voiced concerns about the quality of MURs being conducted (Anon, 2008; Wilcock and Harding, 2008). On the other hand, there was very little objective data to substantiate concerns about MUR quality and the limited audit data that did exist did not prove any underlying problems with the MUR service.

3.1.1.1 MUR peer review audits

Peer review audits of MURs had been suggested in the White Paper (DH, 2008a) and other research (Foulsham *et al.*, 2006; NPA and PCPA, 2010) as a mechanism for ensuring MUR quality. But no indication had been given about exactly how this might be achieved, or which aspects of the MUR service would be focussed upon. Four years later the PSNC and NHS Employers (2012b) also recommended that pharmacists participate in peer review to improve their practice and to assure the quality of the MURs they provide, but still no clarification on the process or suggestions for implementation were offered.

In furtherance to this work, two potential options for peer review of MURs through an examination of the literature were identified: 1) peer review of the MUR process and patient-pharmacist consultation by an observer (prospective), or 2) peer review of MUR records, such as the MUR form, after completion of each consultation

(retrospective). Although there is paucity of evidence of successful peer review in the community pharmacy setting, examples of both types of peer review processes have been published in other research settings. For example, peer review through observation has been used for providing feedback on teaching in Higher Education Institutions (Blackmore, 2005; University of Reading, 2007), to review audiovisual recordings of GP consultations in primary care (Verby *et al.*, 1979), as an assessment method of paediatric senior house officers and specialist registrars (Archer, *et al.*, 2005), to improve practice in a variety of nursing and midwifery settings (Rout and Roberts, 2008) and to evaluate and monitor care provided by pharmacists in a medication-refill clinic (Cram *et al.*, 1992). Peer review of completed documentation on the other hand has been used to monitor and improve the quality and documentation of clinical interventions recommended by hospital pharmacists (Zimmerman *et al.*, 1997).

3.1.1.1.1 Peer review through observation

There is very little in the literature to help guide peer review of MURs through observation. The state of Texas in the USA has developed peer review committees with the aim to "suggest improvements in pharmacy systems to enhance patient care, assess system failures and make recommendations for continuous quality improvement purposes" (Texas State Board of Pharmacy, 2001). Here, an appropriately designed peer review process aspires to allow the quality of pharmacy operations to be evaluated using set outcome-based standards. Pharmacists who have been reprimanded by the Texas State Board have been required to develop and implement a Continuous Quality Improvement Program, including peer review, to reach and demonstrate that they meet the set standards. Since MUR audit standards relating to premises, process and content had been developed (RPSGB, 2006, 2009b) (see section 3.1.1), it may be possible to measure practice against standards through peer review observations. However, when outcome-based standards are considered it could be argued that the outcome of the MUR service that is stated in the service specification (PSNC, 2004), namely "to improve patients' knowledge and use of medicines", could only be investigated objectively by talking to the patient and by recording their medicines use behaviour, not through peer review by observation of the MUR consultation. It is therefore also worth considering

whether completed MUR forms could potentially provide sufficient information to allow peer review of the MUR service and an assessment of its quality.

3.1.1.1.2 Peer review through evaluation of completed documentation

The quality of the MUR service could potentially be assessed through a retrospective evaluation of completed MUR forms. Such a review is based on the premise that a standard set of paperwork is completed in each case. The MUR service satisfies this criterion as "a written record of each MUR service consultation held with a patient" must be completed by the pharmacist (The Pharmaceutical Services Directions, 2005). Training on completion of the required paperwork is one of the aspects covered as part of the MUR accreditation process, but nonetheless feedback suggested that there was variation in the quality of information contained in these forms, especially relating to referral forms sent to the patient's GP following the MUR consultation (James, et al., 2008). The two versions of the MUR form available were discussed in more detail in section 1.5.2. At the time this part of the research project was conducted the original 4-page national NHS MUR form (Appendix 1.2) had just been replaced by the 2-page form (Appendix 1.3), but both versions were in circulation and in use.

3.1.1.1.3 Pharmacists' views on peer review

For any peer review process to work, it could be argued that the agreement of pharmacists is key to helping implement the process. Murphy and Cleveland (1995) suggested that peers provided a "uniquely valuable source of information", but in a small study of self-selecting pharmacists in Cornwall, peer review was found to be associated with a process of performance judgement (Harding and Wilcock, 2008). Although the results may not be representative of the whole pharmacy population, the study highlighted concerns about the use of peer review to inform decommissioning of the MUR service. In addition, concerns were raised with regards to peer review focussing on the MUR process, especially where the focus was on whether or not different sections of the MUR form were completed fully. Questions relating to the appropriateness of peer review as a form of evaluation

were also raised, especially because "a clear and comprehensive definition of a 'quality' MUR had many facets and was best understood in an inordinately complex process" (Harding and Wilcock, 2008, p.675). These authors continued their research in this area of work and developed a postal survey based on their initial results to investigate whether the concerns raised were shared amongst community pharmacists in this same geographical area (Harding and Wilcock, 2010). This small study failed to identify quality indicators for the MUR service (see Table 1.2). The study did however suggest that "professional isolation" (Harding and Wilcock, 2010, p.384) hence the lack of informal learning networks of community pharmacists could hinder the development of quality standards for MURs.

3.1.2 Prioritisation of MURs

The MUR service was intended to be available annually to patients who had been receiving pharmaceutical services from the relevant pharmacy for at least three months (see section 1.5.1 for more detail on service requirements). In terms of selecting patients for the MUR, The Pharmaceutical Services Directions (2005) mentioned that pharmacists had to have regard to any notification from PCOs of categories of patients who could benefit from the service. But few PCOs generated lists of patients to target for the MUR and those that did mainly recommended that the MUR service was carried out on patients with long-term medical conditions, particularly the elderly, or patients with specific conditions, such as osteoporosis or diabetes (LPC Online, 2006a). These selections could have reasonably been based on recommendations associated with the implementation of the *National Service Framework for Older People* (DH, 2001) or other medicines management initiatives that were topical at the time, such as *Pharmacy in the Future* (DH, 2000), the national medicines management collaborative (NPC, 2002) and target groups for medication reviews by GPs (Task Force on Medicines Partnership and The National Collaborative Medicines Management Services Programme, 2002). The MUR service specification did not provide much direction either and merely stated that an MUR could be conducted "with patients on multiple medicines and those with long-term conditions" (PSNC, 2004, p.1).

On 1st October 2011 The Pharmaceutical Services Directions (2011) introduced changes to the community pharmacy contract. It stated that at least 50% of each pharmacy's annual MURs had to be carried out on patients belonging to one or more national target groups. These target groups were defined as:

1   Patients taking a "high risk medicine" classified as a medicine included in specified BNF subsections (Table 3.1);

2   Patients prescribed a respiratory drug included in specified BNF subsections (Table 3.2); or

3   Patients discharged from hospital in the previous eight weeks who had changes made to their medicines while they were in hospital. In this instance the MUR should generally be offered within four weeks of discharge.

No additional guidance was published on selecting patients for the remaining 50% of MURs, but the next section considers the possible selection of patients based on certain defined priorities.

Table 3.1 BNF subsections indicating high risk medicines

BNF subsection Number	BNF subsection descriptor
2.2	Diuretics
2.8.1; 2.8.2	Anticoagulants (including low molecular weight heparin)
2.9	Antiplatelets
10.1.1	Non-steroidal anti-inflammatory drugs

Table 3.2 BNF subsections of relevant respiratory medicines

BNF subsection number	BNF subsection descriptor
3.1.1	Adrenoceptor agonists
3.1.2	Antimuscarinic bronchodilators
3.1.3	Theophylline
3.1.4	Compound bronchodilator preparations
3.2	Corticosteroids
3.3	Cromoglicate and related therapy, leukotriene receptor antagonists and phosphodiesterase type-4 inhibitors

3.1.2.1   Selecting patients according to a system of priorities

The MUR service was introduced to address patients' use of medicines hence it could be argued that patients who may have, or are at risk of having, potential problems taking their medicines, i.e. problems with adherence to their medication regimens, should be targeted, or prioritised, for the service. Although Chapter 2 argued that, for various reasons, all patients could potentially benefit from having a face-to-face MUR consultation with the pharmacist (see section 2.4.2), limits to the number of MURs that may be delivered each year renders it open to a system whereby patients could be prioritised for the MUR service. One way to potentially prioritise patients is to consider the number of medicines prescribed for each patient. This is because some patients can be prescribed a number of medicines, often referred to as 'polypharmacy' (Viktil *et al.*, 2007).

Polypharmacy is a major challenge facing people with long-term medical conditions. A survey of 2,145 adults by the RPSGB found that 43% of those aged over 65 were prescribed more than five medicines at any one time and that one in five admitted they were not taking the medicines as prescribed (Radia, 2009). As a result it was suggested that the elderly could particularly benefit from accessing the MUR service. A variety of factors contribute to an increase in the incidence of polypharmacy, such as long-term medical conditions becoming more prevalent, advances in medical treatment leading to more new medicines on the market, lower thresholds for treating risk factors in preventative medicine and the ageing population (Muir *et al.*, 2001; Gorard, 2006). Collectively these factors also contribute to an increase in the complexity of patients' medication regimens which could subsequently impact on adherence to these regimens. This point is further discussed below.

3.1.2.1.1   Medication complexity and adherence

If medication complexity impacts on adherence, then it would be reasonable to assume that MURs could be directed at patients with particularly complex medication regimens. But various problems with adherence studies have been reported in the literature, including the use of crude, indirect measurements such as counting the number of prescription refills, self-reporting of adherence and adherence being

studied as a secondary consideration or as a covariate (Ingersoll and Cohen, 2008). On the other hand, introducing direct measures of adherence that are more reliable, such as observing the patient taking the medication or detection of the drug in biological fluid, are often not practical or cost-effective (Fairman and Motheral, 2000).

In terms of adherence, one particular theory is that patients' beliefs about medicines, and specifically the balance of benefit versus concerns, determines adherence (Horne and Weinman, 1999). Even so, research also supports the notion that the complexity and behavioural demand of a regimen are strong determinants of low adherence (Vermeire *et al.*, 2001; Haynes *et al.*, 2002; Ingersoll and Cohen, 2008; Fröhlich *et al.*, 2011) and that simpler medication regimens are associated with improved adherence (Claxton *et al.*, 2001; Stone *et al.*, 2001; Dezii *et al.*, 2002; Hinkin *et al.*, 2002; McDonald *et al.*, 2002; Kripalani *et al.*, 2007; Price *et al.*, 2010) and treatment outcomes (Richter *et al.*, 2003; Haynes *et al.*, 2008). In contrast other studies have reported no association or even a negative association between dosing frequency and adherence while others failed to reach a definitive conclusion (Iskedjian *et al.*, 2002). In addition, Shalansky and Levy (2002) showed that taking fewer medications was associated with lower adherence in patients with cardiovascular disease and this finding was supported by Corsonello *et al.* (2009) who reported that the overall number of drugs was not necessarily associated with lower adherence. However, "complexity" was not uniformly defined in these studies and ranged from assessing multiple daily doses to considering the overall number of different medications prescribed to the patient. These definitions excluded inherent complexity of therapy (Corsonello *et al.*, 2009; Oosthuizen *et al.*, 2011) such as any mechanical action required, e.g. breaking a tablet, or additional directions, e.g. taking a tablet after food.

3.1.2.1.2 Measuring medication complexity

The Medication Complexity Index (MCI) was the first uniform measure of medication complexity reported (Conn *et al.*, 1991). Application of the MCI has not shown statistically significant correlations between the MCI and adherence, but any correlations have been in the predicted direction. That is, in general it has been shown that the more complex the regimen, the lower the adherence (Conn *et al.*,

1991). The MCI was originally developed to measure the complexity of medication regimens of elderly patients, but it was modified by Dilorio *et al.* (2003) to develop the Epilepsy Medication and Treatment Complexity Index (EMTCI). George *et al.* (2004) on the other hand refined the MCI which led to the development and validation of the MRCI. The MRCI has since been used as a basis for the development of the Antiretroviral Regimen Complexity (ARC) Index for use in the treatment of acquired immunodeficiency syndrome (AIDS) (Martin *et al.*, 2007).

The MRCI (see Appendix 3.1) was developed in a group of patients with chronic obstructive pulmonary disease (COPD) and quantified the complexity of prescribed medicines in terms of dosage forms, dosing frequencies and additional directions (George *et al.*, 2004). Table 3.3 provides an example of the application of the MRCI to a patient's dosage regimen. It shows that application of the MRCI returns a medication regimen complexity score (hereafter referred to as the MRCI score). A patient's MRCI score can be high or low (or somewhere in between) depending on specific factors associated with their medication regimens.

It could be argued that a tool such as the MRCI could also be used to score the overall complexity of any patient's medication regimen to identify people who could potentially benefit from the MUR service based on the premise that higher medication complexity is associated with lower adherence, which could be addressed through an MUR consultation. But the index require a manual process of entering information relating to dosage forms, dosing frequencies, dosing schedules, special instructions and administration directions for each medicine in the patient's regimen to enable calculation of a numeric value representing the complexity score. As such it is time-consuming and impractical for use in community pharmacies.

Table 3.3 Example of the MRCI applied to a patient's medication regimen

Patient's medication regimen:

Aspirin 75mg EC tabs	Take one daily
Atorvastatin 10mg tabs	Take one every day
Gliclazide 80mg tabs	Take two twice a day
Levothyroxine 25mcg tabs	Take one daily
Levothyroxine 50mcg tabs	Take one daily
Metformin 500mg tabs	Take two twice a day
Perindopril 4mg tabs	Take one every day

Application of the MRCI to obtain the regimen complexity score:

Weighting for dosage form		Weighting for dosing frequency		Weighting for additional directions	
Aspirin 75mg EC tabs	1	Take one daily	1	-	-
Atorvastatin 10mg tabs	1	Take one every day	1	-	-
Gliclazide 80mg tabs	1	Take two twice a day	2	Multiple units at one time	1
Levothyroxine 25mcg tabs	1*	Take one daily	1*	Multiple units at one time	1*
Levothyroxine 50mcg tabs					
Metformin 500mg tabs	1	Take two twice a day	2	Multiple units at one time	1
Perindopril 4mg tabs	1	Take one every day	1	-	-
Total score for each section	**1****		**8**		**3**
MRCI score for the regimen	**1 + 8 + 3 = 12**				

The following instructions that apply to the MRCI are relevant for this particular example (George *et al.*, 2004, p.1374) (see Appendix 3.1):
* Where the same medication is present more than once, but in different strengths, e.g. levothyroxine in this example, it should be considered as one medication.
** In applying the MRCI each dosage form present in a regimen should be scored only once (therefore this regimen which contains only one dosage form, namely tablets, receives only one weighting for tablets).

3.1.3 Aims and Objectives

In light of suggestions to address the perceived imbalance between the quantity and quality of MURs delivered (see section 3.1), the aims of this part of the research project were to consider whether the national MUR forms could be used as data for peer review audits and to develop a system to assist community pharmacists in prioritising patients who could potentially benefit from accessing the MUR service based on the complexity of their prescribed medication regimes.

The specific objectives were:

- To conduct a retrospective audit of completed NHS MUR forms to assess the validity of using these forms as data for peer review,
- To determine what types of patients were selected for the MUR service by community pharmacists,
- To investigate the possibility of applying the MRCI to a sample of MUR forms to enable the calculation of a regimen's complexity score to facilitate prioritisation of MURs delivered, and
- To develop a simplified method of predicting medication regimen complexity that would correlate with the MRCI scores and that could be used in community pharmacy practice.

3.2 Methods

In September 2008 all community pharmacies of a large multiple chain within one geographical area in South-East England (n=33) were contacted (Appendix 3.2) and asked to retrospectively submit copies of all MUR forms completed between 1st and 30th June 2008, inclusive. This one-month period was deemed to be adequate to allow sufficient MUR forms to be collected and the period was chosen in consultation with the pharmacy chain involved to avoid financial year-end and holiday periods. Pharmacists anonymised all forms before submission by removing patient, GP and pharmacist details.

After one reminder letter in February 2009, data on all MUR forms received (see section 3.3 for details on number of forms) were transferred to an Excel® spreadsheet, including:

- the patient's gender and age (where available),
- the medicines and dosage regimens,
- the dosage regimens as the patient took their medicines,
- information on the patient's knowledge of the medicines' use and how they were taking the medicines,
- whether more information on the medicines were provided by the pharmacist,
- appropriateness of the formulations,
- whether the medicines were working,
- whether any side effects were present,
- general comments relating to the patient's health or medicines, and
- the MUR action plan.

Each medicine was coded according to its therapeutic classification in BNF chapters and subsections (Joint Formulary Committee, 2009). The number of medicines per patient was calculated using Excel®.

3.2.1 Retrospective MUR audit

Patients' prescribed medicines listed on the MUR forms that were subsequently included in the national MUR target groups (see section 3.1.2, Table 3.1 and Table 3.2) when they were published were identified in retrospect. This was done by comparing the BNF subsections of the national target groups with the BNF classifications obtained through the coding exercise described above (see section 3.2). The idea was to calculate which pharmacies had conducted MURs during June 2008 (without national guidelines in place) that belonged to the subsequent national MUR target groups. Written recommendations made by pharmacists in the MUR action plans were categorised according to the seven MUR audit criteria set out by the RPSGB (RPSGB, 2009b) (see section 3.1.1). These recommendations were also analysed to identify additional themes. Ethical approval for this retrospective audit which was based on anonymised data was not required.

3.2.2 Measuring medication regimen complexity

3.2.2.1 Development of new dosage form categories

The MRCI had been developed based on the medication regimens of patients with COPD. As seen in Appendix 3.1, although comprehensive, not all dosage forms, dosing frequencies and additional directions are covered by the MRCI. In order to enable the application of the MRCI to each patient's MUR medication regimen, it was necessary to extend the dosage form category of the original MRCI for wider application to the range of medicines found here. This meant that rather than using the MRCI instructions which specify only dosage forms commonly found in respiratory medication regimens, it was necessary to develop dosage form categories and corresponding scores as a separate exercise to eventually calculate a medication regimen complexity score for the MUR regimens included on the MUR forms received. In addition to 32 dosage form categories already covered by the MRCI, six additional categories were identified from the forms received, i.e. effervescent tablets, soluble/dispersible tablets, bath emollients, shampoos and scalp applications, breath-actuated aerosol inhalers and rectal ointments.

A panel of experts consisting of pharmacists working across community pharmacy and academia (n=7) was formed in order to validate these new categories. The panel was given a copy of the existing MRCI dosage form category weightings and asked to independently add weightings to the additional six categories. Agreement between the panel members for each new category was assessed using Kendall's coefficient of concordance (W) (Sheskin, 2004) (see equation 3.1 below).

$$W = \frac{12S}{p^2(n^3 - n) - pT}$$

with

$$S = \sum_{i=1}^{n}(R_i - \bar{R})^2 \qquad (3.1)$$

Where:
   S is a sum-of-squares statistic over the row sums of ranks R_i
   R_i is the row marginal sums of ranks received by each category
   $\bar{R}$ is the mean of the R_i values
   p is the number of panel members (judges)
   n is the number of categories in the set
   T is a correction factor for tied ranks

3.2.2.2 Application of the MRCI to medication regimens on the MUR forms: defined here as *the actual MRCI score*

Patients' prescribed medication regimens as recorded on the MUR forms, i.e. the dosage forms, dosage instructions and additional directions, were assigned weightings according to the published MRCI and extended dosage form categories described in section 3.2.2.1. The MUR forms provided sufficient detail to enable the application of the MRCI in this way (see Appendix 3.3). Where any ambiguities arose the research team discussed and agreed on the coding.

Application of the MRCI made it possible to calculate the *actual* MRCI score (see Appendix 3.3) for each MUR form, i.e. for each individual patient's prescribed medication regimen as recorded on the form. It should be noted that calculating the actual MRCI score for each patient does not involve a straightforward additive process because each different dosage form present in the regimen is scored only once and if the same medication, i.e. same brand and dosage form, is present in different strengths, it is still considered as one medication (see Table 3.3 and Appendix 3.1 for clarification). These and other stipulations in the MRCI instructions make the tool complex and labour-intensive to apply.

3.2.2.3 Calculation of complexity scores using an alternative additive approach: defined here as *the alternative complexity score*

Due to the complexities associated with the application of the MRCI, a new process was devised and applied in order to test whether the labour-intensive way in which the MRCI instructs calculation of the actual MRCI score was really necessary. This involved first assigning MRCI weightings to each prescribed *medicine* in a patient's regimen to determine individual complexity scores for each medicine, hereafter referred to as the *medicine* complexity score (see Appendix 3.3).

An overall *alternative* complexity score was then calculated for each regimen by adding together the individual medicine complexity scores. This was carried out in order to examine ways of simplifying the process of determining a regimen's total

complexity score. Therefore, to reiterate, the individual medicine complexity score for each medicine in the regimen was used in an additive way regardless of how many times a specific dosage form was present in the regimen and whether the same medication was present in various strengths (see Appendix 3.3). Thus the medicine complexity score and the actual MRCI score for each regimen were not similar because, as described in section 3.1.2.1.2, the calculation of the actual MRCI score is not a straightforward additive process.

3.2.2.4 Obtaining average complexity scores for each BNF medicine category: defined here as *the predicted complexity score*

As explained in section 3.1.2.1.2, and again above, the MRCI involves an academic process that is not practical in a community pharmacy setting. Therefore it was deemed necessary to test the possibility of predicting a patient's medication regimen complexity score based on their prescribed items without full application of the MRCI. To work towards such a prediction, the prescribed medicines in each patient's regimen were categorised according to their BNF subchapter category level (e.g. 1.1). An individual complexity score for each of these categories was then calculated by applying the MRCI to each individual medicine present in that category, i.e. calculate the weightings corresponding to their dosage forms, dosing frequencies and additional directions, but without considering the overall regimen the medicine was part of. It was then possible to obtain an average complexity score for each BNF subcategory by averaging the medicine complexity scores within that category.

Once these average complexity scores for each BNF subcategory had been calculated, these new scores were applied to each patient's medication regimen. By summing up these new average complexity scores for each medicine present in a patient's regimen it was possible to calculate a *predicted* complexity score for each medication regimen. Thus in addition to the actual MRCI score and the alternative complexity score, a predicted complexity score was also calculated for each patient's medication regimen.

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So, to summarise, the *actual* MRCI score was calculated using the published MRCI as intended by its creators, the *alternative* complexity score was calculated by adding together the individual medicine complexity scores, which was based on the MRCI weightings, in each regimen and the *predicted* complexity score was calculated by applying the BNF subcategory average to each medicine in a regimen and then summing these up to obtain the final score.

The correlation between the number of items in the regimen and the actual MRCI score, the alternative complexity score and the predicted complexity score as well as the correlation between the alternative and predicted complexity scores and the actual MRCI score were all examined using the regression function of Predictive Analytics Software (PASW®) Statistics (version 18.0).

3.3   Results

A total of 498 MUR forms were submitted by 17 (51.5%) community pharmacies. These included both version 1 (from 14 pharmacies) and version 2 (from 4 pharmacies) MUR forms. One pharmacy had completed and submitted both versions during the relevant time period. Thirty four submissions (6.8%) contained only the MUR action plan without details of patients' medication and had to be excluded from the main analysis (two pharmacies submitted MUR action plans only). However, these MUR action plans contained sufficient detail to be included in the thematic analysis of pharmacists' recommendations. Three MUR forms contained details about the patient's medicine, but the action plan was not submitted and 16 action plans, although included in the submission, were blank (Figure 3.1).

```
                        ┌─────────────────┐
                        │  498 MUR forms  │
                        │    received     │
                        └─────────────────┘
                         /              \
                        /                - 3 forms with no action
                       /                  plan attached
- 34 forms containing no details
  of patients' medication              ┌──────────────┐
                     /                  │ 495 action   │
                    /                   │ plans        │
                   /                    └──────────────┘
                                              \
 ┌─────────────────────┐                       - 16 forms with no
 │   464 forms         │                         completed action
 │ containing details of│                        plan
 │ patient's medication │                         \
 │ included in analysis │               ┌──────────────────┐
 └─────────────────────┘                │ 479 action       │
                                        │ plans included   │
                                        │ in analysis      │
                                        └──────────────────┘
```
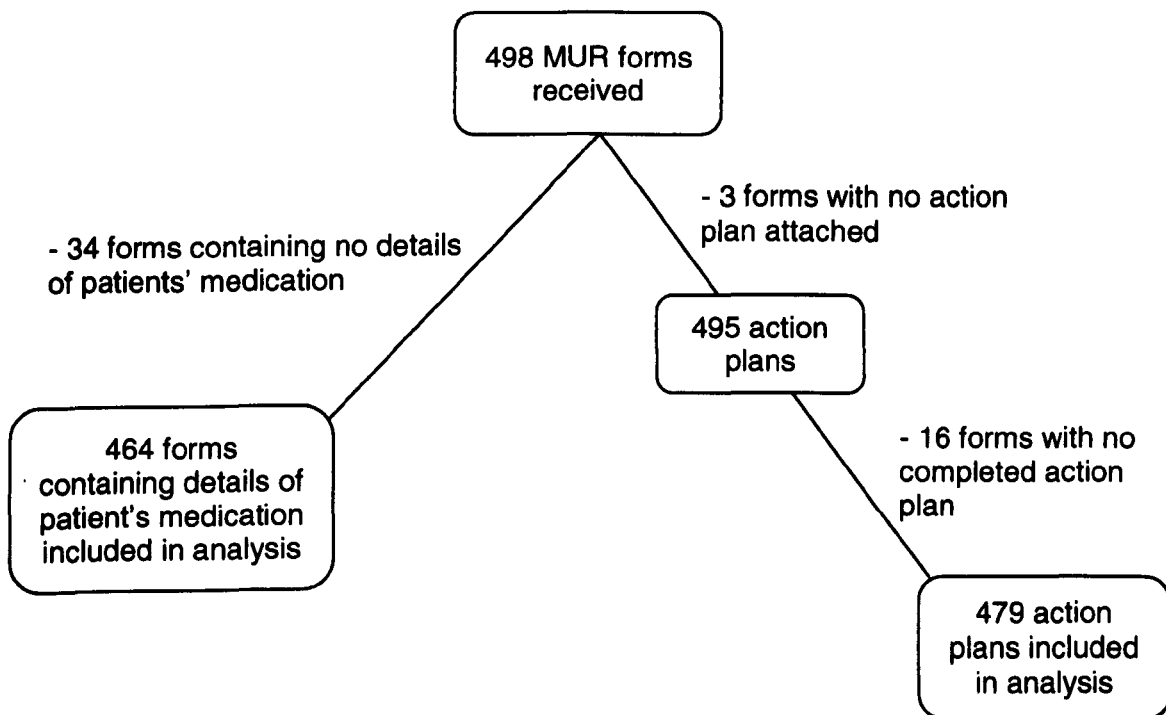
Figure 3.1 Breakdown of the number of completed MUR forms and MUR action plans included in the analysis

Completed MUR forms relating to 464 patients (45.4% male; 53.4% female; 1.2% not stated) contained a total of 2,335 items (mean 5.03 items per patient; range 1-17). The patient's age was available on 297 MUR forms (64%) and ranged from 19 to 108 years. Information available in the free text areas of the MUR forms subsequently showed that nine prescribed items (relating to eight patients) were listed on the forms even though they were not current medicines. These items were presumably included because these MUR forms were initially populated electronically based on the PMR held at the pharmacy (Wang, 2007) rather than from information divulged by the patient. These items were separate from situations where other medicines were stopped by the patient, i.e. highlighting adherence problems during the MUR consultation. Therefore a total of 2,326 items (mean 5.01 items per patient; range 1-17) remained to be analysed.

The total number of items consisted of 2,259 (97.1%) prescribed medicines (mean 4.87 items per patient), as well as 27 (1.2%) devices (e.g. peak flow meters, lancets, diagnostic and monitoring agents for diabetes mellitus, pen needles and nebuhalers), 39 (1.7%) OTC medicines and one medicine that was not legible on the form. A breakdown of the number of prescribed items per form, i.e. per patient, is

shown in Table 3.4. Nearly two thirds (63.1%) of forms contained four or more medicines with 17 (3.7%) forms containing only one medicine. The prescribed medicines were coded according to the BNF chapter to which they belonged (Table 3.5). 45.1% of all prescribed items belonged to BNF chapter 2 (the cardiovascular system). These items were prescribed to 345 (74.4%) patients. On further analysis it was found that overall 333 (71.8%) patients were prescribed medication(s) to lower their blood pressure and/or their cholesterol levels.

Table 3.4 Total number of prescribed items included on the MUR forms

Number of items on form	Number of forms	Percentage of forms (%)	Total number of items
1	17	3.7%	17
2	80	17.2%	160
3	74	15.9%	222
4	73	15.7%	292
5	66	14.2%	330
6	52	11.2%	312
7	35	7.5%	245
8	20	4.3%	160
>8	47	10.1%	521
TOTAL	464	100%	2,259

Table 3.5 Prescribed medicines per BNF chapter

BNF chapter		Number of medicines	Percentage of total
Chapter 1	Gastro-intestinal system	169	7.5%
Chapter 2	Cardiovascular system	1,018	45.1%
Chapter 3	Respiratory system	223	9.9%
Chapter 4	Central nervous system	253	11.2%
Chapter 5	Infections	14	0.6%
Chapter 6	Endocrine system	216	9.6%
Chapter 7	Obstetrics, gynaecology, and urinary-tract disorders	48	2.1%
Chapter 8	Malignant disease and immunosuppression	15	0.7%
Chapter 9	Nutrition and blood	60	2.7%
Chapter 10	Musculoskeletal and joint diseases	102	4.5%
Chapter 11	Eye	43	1.9%
Chapter 12	Ear, nose and oropharynx	40	1.8%
Chapter 13	Skin	53	2.3%
Chapter 14	Immunological products and vaccines	0	0.0%
Chapter 15	Anaesthesia	0	0.0%
Unallocated*		5	0.2%
TOTAL		2,259	100%

* Five unallocated medicines included two borderline substances (Ensure® Plus and Fortisip®), one medicine where insufficient information prevented allocation to a specific chapter (betamethasone 0.1% drops with no indication whether these were eye, ear or nose drops) and two medicines (Algesal and sodium chloride 5% eye drops) that could not be found in BNF 57.

3.3.1 Retrospective MUR audit

The 464 MUR forms were analysed in relation to two of the three (later) published national target groups of patients that need to be prioritised for the MUR service, i.e. those prescribed high risk medicines or certain respiratory drugs (see section 3.1.2, Table 3.1 and Table 3.2 for clarification). It was not possible to determine which MURs would have related to the third target group, i.e. MURs carried out on patients who had been discharged from hospital because this information was not routinely captured on the national MUR forms at the time. It was found that 318 (68.5%) of the MUR forms contained at least one high risk medicine. The 2013 MUR service specification state that 50% of the annual MURs carried out by each pharmacy must belong to one of more of the defined target groups. Although data submitted for this audit spanned only a one-month period, this analysis showed that in all but one of the 15 participating pharmacies (93.3%) that submitted MUR forms containing details of patients' medication, the majority of MURs were carried out on patients with high risk medicines even though it was not a prerequisite at the time (Table 3.6). The remaining pharmacy delivered three of their seven MURs (42.9%) to patients with high risk medicines.

Table 3.6 Proportion of MURs by each pharmacy that were carried out on patients with high risk medicines

Participating pharmacy	Number of MURs carried out	Number of MURs on patients with high risk medicines	Percentage of MURs on patients with high risk medicines
A	46	36	78%
B	26	16	62%
C	30	21	70%
D	47	34	72%
E	13	11	85%
F	30	23	77%
G	20	16	80%
H	39	20	51%
I	55	32	58%
J	7	3	43%
K	5	3	60%
L	27	19	70%
O*	28	19	68%
P	49	36	73%
Q	42	29	69%
Total	**464**	**318**	**68.5%**

* Pharmacies M and N only submitted MUR action plans without details of patients' medication

A total of 479 MUR action plans were complete (96.2% of all action plans received). Three of these action plans, although completed, only stated facts from the pharmacists' discussion with the patient and were excluded from the analysis. Of the remaining 476 action plans that were analysed, half (50.2%) confirmed that patients were compliant with their medication regimens, confirmed that there were no issues identified or confirmed that no action was necessary. However, 198 (82.8%) of these did not provide any additional detail on recommendations made or advice given during the consultation. The lack of detailed information seemed dependent on which pharmacy the data originated from. For example, 34/42 (81%) of the MUR action plans submitted by pharmacy Q (a pharmacy that only submitted action plans) merely stated "No issues" while 38/46 (82.6%) submitted by pharmacy A only stated "Patient complying with all the Dr's requirements". However, in the case of pharmacy Q, 29 of these 34 forms (82.9%) contained more detail in other sections of the MUR form. For example, the section "General comments relating to advice, side

effects and other issues" contained information on side-effects reported by the patient, e.g. dry mouth and drowsiness with cinnarizine, advice on which other OTC medicines could be used concomitantly with prescribed medicine, e.g. paracetamol or codeine with naproxen, information reinforcing the correct time of day to take certain medicines, e.g. simvastatin to be taken at night and low dose aspirin to be taken in the morning, advice to avoid certain fruit juices, e.g. cranberry juice with warfarin and grapefruit juice with simvastatin and other advice, e.g. to use a suitable sunscreen with amiodarone. Nevertheless, for the purpose of this research, only the MUR action plans were thematically analysed as these were intended to contain summary information submitted to GPs and provided to patients.

The remaining 278 action plans analysed included a total of 407 written recommendations (an average of about 1.5 recommendations per action plan, i.e. per patient). Of these, 154 (37.8%) recommendations recorded on 136 (48.9%) MUR actions plans could be related to the RPSGB MUR audit criteria (RPSGB, 2009b) set out for community pharmacists (Table 3.7).

Table 3.7 MUR recommendations relating to the RPSGB MUR audit criteria

MUR audit criteria	Number of recommendations	Percentage of recommendations
Lifestyle recommendations	45	11.1%
Interactions / Contraindications	14	3.4%
Adherence	38	9.3%
Synchronisation of repeats	6	1.5%
Patient to talk to GP	51	12.5%
Signposting for other services	0	0.0%
Signposting for further information	0	0.0%
TOTAL out of 407 recommendations	154	37.8%

Thematic analysis of the remaining 253 (62.2%) recommendations and other information recorded on the MUR action plans yielded three additional criteria to the ones identified in the RPSGB MUR audit criteria that could be included in an MUR audit:

- Provision of further information, clarification or advice, e.g. to improve therapy or inhaler technique, reduce side-effects or avoid an overdose (47.2%);
- Identification of and advice concerning side-effects or new symptoms (11.8%);

- Recommendations to optimise the patient's therapy (medicines optimisation), e.g. rationalisation of medicines, overcoming problems with formulations, reducing treatment doses of proton pump inhibitors to maintenance doses and avoiding duplication of therapy (3.2%). An example of rationalisation included the recommendation to prescribe only one bisoprolol 7.5mg tablet instead of two tablets (2.5mg and 5mg).

3.3.2 Measuring medication complexity

3.3.2.1 New dosage form category weightings

The expert panel members considered weightings to apply to six additional dosage form categories to enable application of the MRCI to the MUR patients' medication regimens. The overall agreement between the 7 members was statistically significant (Kendall's $W = 0.692$; $p < 0.001$). Consensus was reached following discussion and additional dosage form weightings applied to the medication regimens are listed in Table 3.8.

Table 3.8 Results from dosage form coding exercise

Additional dosage forms added to MRCI	Allocated weighting
Effervescent tablets	2
Soluble/dispersible tablets	2
Bath emollients	2
Shampoos and scalp applications	2
Breath-actuated aerosol inhalers	3
Rectal ointments	2

3.3.2.2 Results from complexity score calculations

The MRCI and additional dosage form category weightings were applied to each of the 464 medication regimens. Medicine complexity scores as well as actual MRCI scores, alternative complexity scores and predicted complexity scores were calculated as described in sections 3.2.2.2, 3.2.2.3 and 3.2.2.4. The actual MRCI

scores ranged from 2 to 45 with the most complex regimen, as indicated by the highest score, consisting of 12 prescribed medicines. The highest individual medicine complexity score was 12.5. This was calculated for a Ventolin™ Evohaler™ with dosage directions of "inhale two to three puffs 4 hourly via Volumatic™". The average complexity scores for each BNF subchapter are shown in Table 3.9.

Table 3.9 Average complexity score for each BNF subchapter based on the medicine complexity score calculated for each individual medicine using the MRCI (Shaded areas indicate categories included in the national MUR target groups. Numbers in parenthesis should not be included in the calculated total as they would have been taken into account in the overall BNF subchapter to which they belong.)

BNF subchapter*	Number of medicines in each BNF subcategory	Overall medicine complexity score for the BNF subcategory	Average medicine complexity score per BNF subcategory	Standard deviation	Range	
					Min	Max
1.1	11	57	5.18	2.14	2	9
1.2	12	45.5	3.79	1.03	3	6
1.3	88	199	2.26	0.55	1	4
1.4	6	16	2.67	0.93	1.5	4
1.5	8	31	3.88	0.64	3	5
1.6	39	163.5	4.19	0.67	3	6
1.7	5	20.5	4.10	0.22	4	4.5
2.1	15	38	2.53	0.64	2	4
2.2	117	312	2.67	0.59	2	4
2.3	9	20	2.22	0.44	2	3
2.4	109	276	2.53	0.69	2	5
2.5	228	521	2.29	0.50	1	4
2.6	138	342	2.48	0.59	2	4
2.8	69	205	2.97	0.37	1.5	4
2.8.1	(1)	(4)	4	-	4	4
2.8.2	(68)	(201)	2.96	0.35	1.5	4
2.9	127	364	2.87	0.71	1	5
2.12	206	563	2.73	0.51	1	4
3.1	105	627	5.97	1.68	2	12.5
3.1.1	(84)	(519)	6.18	1.55	3	12.5
3.1.2	(17)	(85)	5.00	1.41	4	8
3.1.3	(2)	(5)	2.5	0.71	2	3
3.1.4	(2)	(18)	9	0.00	9	9
3.2	84	525	6.25	1.04	4	9
3.3	3	8	2.67	0.58	2	3
3.4	31	71	2.29	0.84	1.5	5
4.1	44	136	3.09	0.84	1	5
4.2	13	38	2.92	1.04	1	5
4.3	60	180	3.00	0.86	2	5
4.5	3	10	3.33	1.15	2	4

BNF subcategory*	Number of medicines in each BNF subcategory	Overall medicine complexity score for the BNF subcategory	Average medicine complexity score per BNF subcategory	Standard deviation	Range	
					Min	Max
4.6	10	36	3.60	1.05	2	5
4.7	105	468.5	4.46	1.49	1	8.5
4.8	14	50.5	3.61	0.74	2	5
4.9	4	15	3.75	1.71	2	6
5.1	11	40	3.64	0.81	3	5
5.2	3	10	3.33	2.31	2	6
6.1	69	252	3.65	1.08	2	7
6.2	68	160	2.35	0.48	2	3
6.3	18	61.5	3.42	0.88	2	5
6.4	34	85.5	2.51	0.78	2	4
6.6	27	92	3.41	0.75	3	6
7.2	7	32	4.57	0.53	4	5
7.3	2	4	2.00	0.00	2	2
7.4	39	81	2.08	0.47	1	3
8.2	3	13	4.33	2.31	3	7
8.3	12	25	2.08	0.29	2	3
9.1	12	39	3.25	1.82	1	6
9.2	2	9	4.50	0.71	4	5
9.5	3	9	3.00	1.00	2	4
9.6	43	121.5	2.83	0.56	2	5
10.1	73	225	3.08	1.00	1	5
10.1.1**	(53)	(174)	3.28	1.05	1	5
10.2	15	41.5	2.77	0.42	2	3
10.3	14	59.5	4.25	0.98	2	5
11.4	9	55	6.11	1.05	5	8
11.6	25	124	4.96	0.79	3	6
11.8	9	43	4.78	1.18	3	6
12.2	39	177	4.54	1.09	3	7
12.3	1	4	4.00	-	4	4
13.2	18	65	3.61	1.17	2	6
13.4	21	76	3.62	0.80	2	5
13.5	4	15	3.75	0.50	3	4
13.8	4	17	4.25	0.50	4	5
13.9	3	10.5	3.50	0.87	2.5	4
13.10	2	8	4.00	0.00	4	4
13.13	1	5	5.00	-	5	5
Unallocated***	5	26	-	-		
TOTAL	2259	7324.5	-	-		

* Only subchapters that were represented in the 464 regimens are included
** Sections 10.1.2 to 10.1.5 are not included in the national targeted MUR groups. The 20 medicines relating to these sections have therefore not been specified in the table, but were included in the total for subsection 10.1.
*** Five unallocated medicines included two borderline substances (Ensure® Plus and Fortisip®), one medicine where insufficient information prevented allocation to a specific subchapter (betamethasone 0.1% drops with no indication whether these were eye, ear or nose drops) and two medicines (Algesal and sodium chloride 5% eye drops) that were not included in BNF 57.

The highest average complexity scores were for subchapters 3.2 (corticosteroid inhalers), 11.4 (ocular corticosteroids and other anti-inflammatory preparations) and 3.1 (bronchodilators) respectively. The high standard deviations could be explained by considering the additional weightings the MRCI attaches to any other labelling directions. For example, in BNF subchapter 1.1, Gavison® Advance suspension with the directions "Take as directed", will be attributed a MRCI score of 4, but the directions "Take one or two 5mL spoonfuls after food and at night" increases the MRCI score for the same medication to 9 (see Appendix 3.1).

3.3.2.3   Regression analysis

Simple linear regression showed a strong positive correlation between the total number of items per regimen and the *actual* MRCI scores ($R = 0.845$; $R^2 = 0.715$; $F = 1156.035$; $p < 0.001$) (Figure 3.2). Figure 3.3 shows a stronger correlation between the total number of items per regimen and the *alternative* complexity score ($R = 0.917$; $R^2 = 0.840$; $F = 2427.525$; $p < 0.001$), while Figure 3.4 shows an even stronger correlation between the total number of items per regimen and the *predicted* complexity score ($R = 0.939$; $R^2 = 0.882$; $F = 3462.116$; $p < 0.001$).
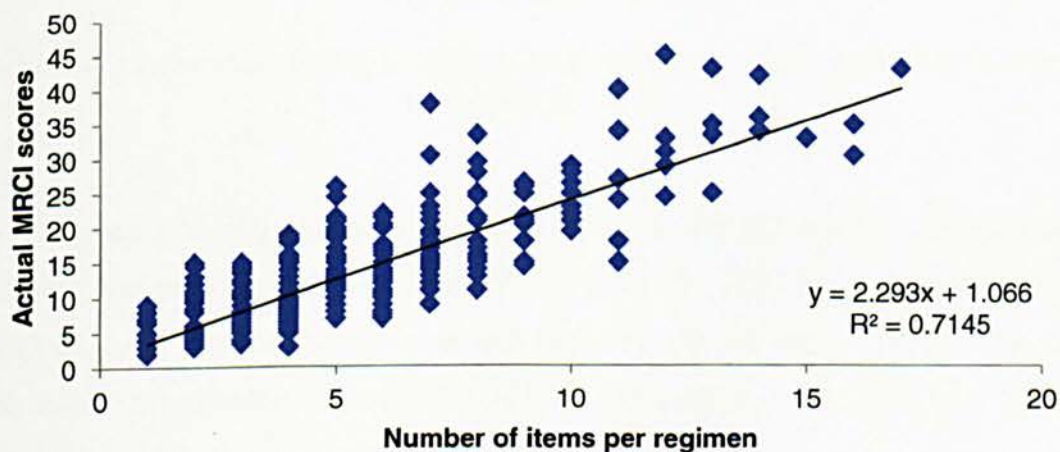
Figure 3.2 Correlation between total number of items per regimen and actual MRCI scores
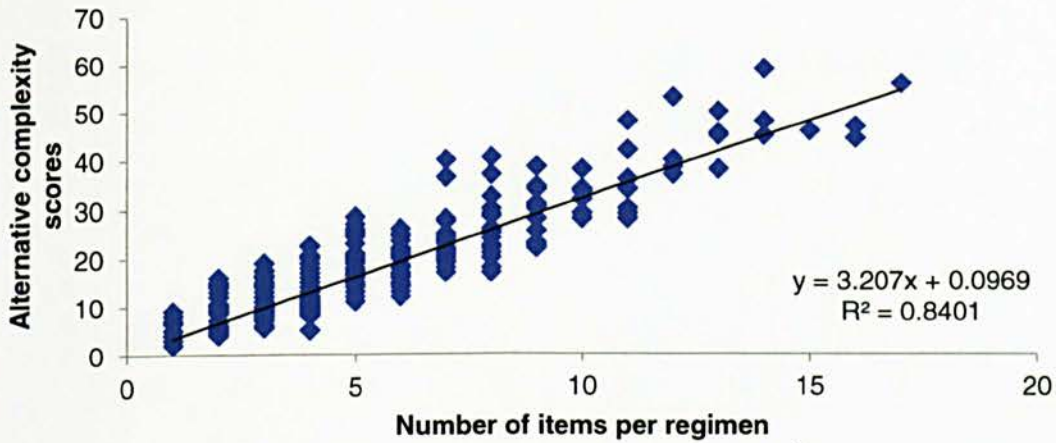
Figure 3.3 Correlation between total number of items per regimen and alternative complexity scores
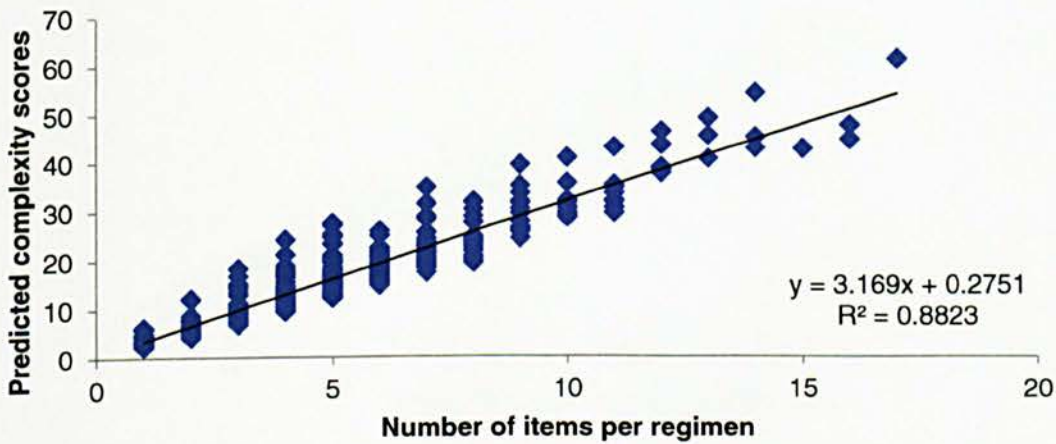
Figure 3.4 Correlation between total number of items per regimen and predicted complexity scores

There was also a strong positive correlation between the actual MRCI score and the predicted complexity score ($R = 0.936$; $R^2 = 0.876$; $F = 3261.248$; $p < 0.001$) (Figure 3.5) with an even stronger positive correlation between the actual MRCI score and the alternative complexity score ($R = 0.971$; $R^2 = 0.944$; $F = 7711.104$; $p < 0.001$) (Figure 3.6).
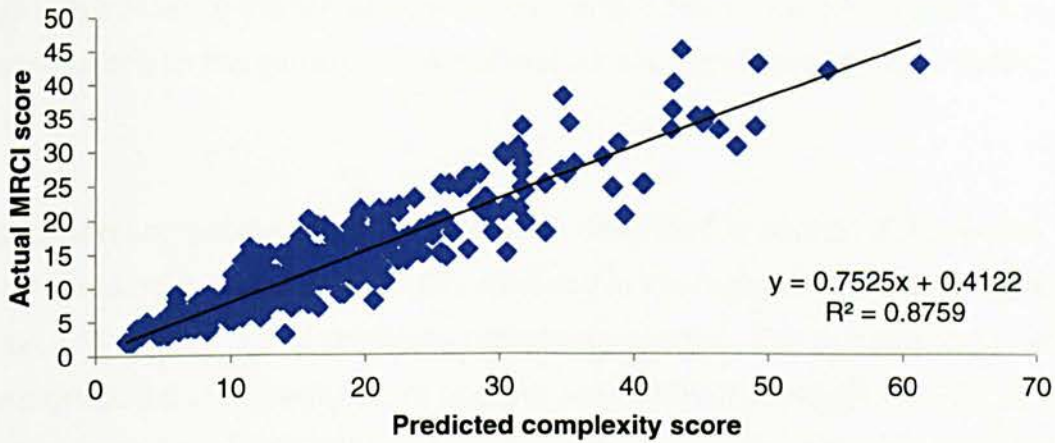
Figure 3.5 Correlation between actual MRCI scores and predicted complexity scores
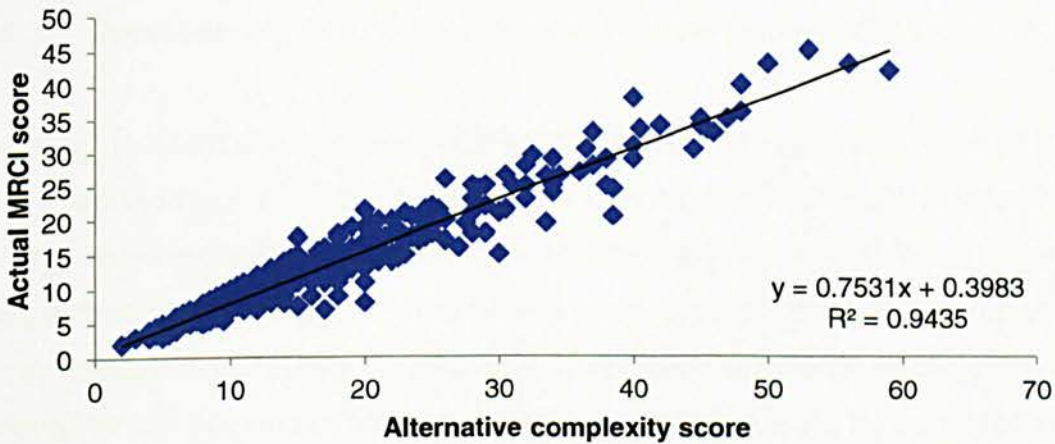
Figure 3.6 Correlation between actual MRCI scores and alternative complexity scores

In a further regression model, both the variables 'total number of items per regimen' and 'predicted complexity score' were used as independent variables in order to predict a regimen's MRCI scores. The nature of the relationship is demonstrated in the regression equation below ($R = 0.941$; $R^2 = 0.886$; $F = 1784.912$; $p < 0.001$) (equation 3.2):

Predicted MRCI score = 0.799 + (total number of items per regimen x -0.779) + (predicted complexity score x 0.970)   (3.2)

The equation indicates that the total number of items per regimen makes a smaller contribution to the overall complexity of the regimen than the predicted complexity score. The variation between the predicted MRCI score (as predicted using equation 3.2 above) and the actual MRCI score calculated

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through application of the MRCI was tested using a paired samples t-test. The difference between the samples was not statistically significant ($t(463) = 0.076$; $p = 0.940$).

The predicted complexity score calculated as described in section 3.2.2.4 was refined by adding the constant (0.799) obtained in the regression equation (see equation 3.2) to the original predicted complexity scores. The correlation between this *new* predicted complexity score and the actual MRCI score ($R = 0.936$; $R^2 = 0.876$; $F = 3261.146$; $p < 0.001$) was similar to the correlation between the *original* predicted complexity score and the MRCI score.

3.3.2.4 Development of a Medicines Use Review Complexity Index (MURCI)

Determining a patient's medication regimen complexity through application of the MRCI is a laborious process, but the results above have shown that it is possible to obtain regimen complexity scores that correlate well with the actual MRCI score by applying simpler methodology. For example, when applying the MRCI as originally intended, warfarin 1mg tablets and warfarin 3mg tablets on the same patient's prescription would be considered one medicine (see Table 3.3). By considering these items as totally separate medicines and adding together their individual medicine complexity scores an alternative complexity score for the regimen is obtained. This score is not so awkward to calculate and overall in the data there was a strong positive relationship between this alternative complexity score and the actual MRCI score ($R^2 = 0.944$), suggesting that the MRCI did not need to be so complicated. However, in order to calculate the alternative complexity score in practice the MRCI weightings relating to each item's dosage form, dosing frequency and additional directions would still need to be applied to each item in a patient's medication regimen. Another method of predicting a patient's regimen complexity was therefore considered.

So while the alternative complexity score still required application of the MRCI weightings, a predicted complexity score was calculated based on the average complexity scores for each item in the regimen according to its BNF subcategory which were calculated separately using the large database constructed. The

predicted complexity score correlated well with the actual MRCI score (R^2 = 0.876) and can be considered more manageable in practice compared to the manual calculation of a patient's actual MRCI score. This is because application of the predicted complexity score simply requires a published list of medication complexity averages for each BNF subcategory with the pharmacist adding together each average medication complexity score to obtain a predicted complexity score for a patient's medication regimen. Although the average medication complexity scores would be based on the MRCI weightings, these weightings would already be incorporated in the listed average and pharmacists would not need to calculate these separately. The scores listed in Table 3.9 may provide a helpful starting point to the development of such a list. Refining a patient's prescribed regimen complexity score by determining its *new* predicted complexity score (which includes the addition of the constant obtained in equation 3.2) did not improve the correlation of the predicted complexity score and the actual MRCI score. Therefore the addition of the constant may not be necessary, especially where complexity scores are used for comparative purposes to facilitate patient selection for the MUR service. Although the predicted complexity scores have not been refined and validated further they may be considered the starting point of a new index, the Medicines Use Review Complexity Index (MURCI) that could be used to facilitate patient prioritisation for the MUR service in practice.

3.4   *Discussion*

Governments continuously endeavour to balance cost-cutting in the NHS with provision of a free, high quality health service (DH, 1998, 2008b; McKinsey&Co, 2009; Flynn, 2010; Audit Commission, 2012). This part of the research project aimed to investigate the practicability of the recommendations relating to the quality and prioritisation of MURs set out in the White Paper *Pharmacy in England, Building on strengths – delivering the future* (DH, 2008a).

3.4.1 MUR audit

Both versions of the national MUR forms contained sufficient information to audit certain aspects of the MUR service and shed light on patient selection and pharmacists' recommendations during the MUR consultation.

3.4.1.1 Patient selection

The retrospective audit showed that pharmacists conducted MURs more frequently with patients on multiple medicines refuting anecdotal reports that pharmacists often elect to do 'easy' MURs with patients on a single prescribed item only (Anon, 2008; Mason, 2010). It is acknowledged that the generalisability of the results is limited because this audit was carried out in one geographical area and in one community pharmacy chain. However, some findings were consistent with other studies. For example, patients were prescribed an average of five items which was consistent with findings from a RPSGB survey (Radia, 2009) even though patients in the survey represented an older population. Also, nearly half of all prescribed medicines related to the cardiovascular system, which is consistent with findings by Wilcock and Harding (2008). This category includes blood pressure and cholesterol medication which are associated with low adherence (Kalia *et al.*, 2006; Lachaine *et al.*, 2006). Hence the pharmacist may have played a role in improving patients' knowledge regarding the use of medicines in these predominantly asymptomatic conditions which have also been associated with low persistence (Benner *et al.*, 2002).

More than two thirds (68.5%) of MURs were conducted with patients who were prescribed a high risk medicine listed in the MUR national target groups. Furthermore, if the MURs delivered during the one-month study period were representative of the annual MURs delivered by each pharmacy then 93.3% of pharmacies would have met the new criteria of prioritising their MURs so that at least 50% were targeted to the national target groups even though these criteria were published after these MURs had been delivered. According to the prescription cost analysis in England (The NHS Information Centre, 2009) only 15.5% of the total number of dispensed medicines in 2008 belonged to the BNF subsections

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highlighted in the national target groups. It therefore seems plausible that pharmacists may already have had an approach to aid patient selection. The MUR forms certainly suggested that pharmacists had a personal preference for targeting certain 'types' of patients, although this statement cannot be substantiated through the data, because the response rate was just over 50% and it could also be that pharmacists only submitted MUR forms that they deemed met the appropriate criteria.

3.4.1.2 Pharmacists' recommendations

Pharmacists recorded an average of 1.5 recommendations per patient on the MUR action plans, but less than half of the action plans contained recommendations that directly related to criteria set out in the RPSGB community pharmacy audit (RPSGB, 2009b). It could therefore be argued that the results of the national audit have not provided a complete presentation of pharmacists' role in medicines management through the MUR service. In addition, it is conceivable that pharmacists, even though they may provide various advice and information to patients during the MUR consultation, may prioritise the statements that are to be included on the MUR form. At the time some MUR standard operating procedures actually suggested that the action plan contain no more than four key points (LPC-online, 2006). A selection of triggers may prompt a patient to seek healthcare advice (Zola, 1973), but the way in which a patient gains access to the MUR consultation is markedly different from other patient-professional encounters and does not stem directly from the patient's need to seek health-related advice. Therefore pharmacists may find themselves in a position where they have to consider the extent of their advice-giving role in the MUR consultation in the context of the main aim of the service, i.e. to improve the patient's knowledge and use of medicines (PSNC, 2004), and balance this with other factors such as the patient's memory and recall (Kessels, 2003).

3.4.1.3 Criteria for audit

The community pharmacy audit developed by the RPSGB, Royal College of GPs and the Clinical Audit Support Centre Ltd. (RPSGB, 2009a) (see section 3.1.1) included seven criteria for assessing the types of pharmacists' recommendations

made during the MUR consultation. Analysis of pharmacists' written recommendations included in the MUR actions plans allowed the identification of three additional audit criteria that could be included in future MUR audits, i.e. provision of further information, clarification or advice, identification of and advice concerning side-effects or new symptoms and recommendations to optimise the patient's therapy. Information included in a third of the completed action plans only confirmed that these patients were compliant and that no additional problems were identified that needed attention. Although it may seem that these MURs may have been unnecessary, Chapter 2 (section 2.4.2) suggested that this information was unlikely to be available to pharmacists, GPs or other health professionals via another route, hence the MUR consultation could be considered to have been of value even though no active problem was identified. Therefore, it could be argued that a fourth criterion based on confirmation that the patient was fully informed about their medicines and its use and that no problems were identified is incorporated in future audits as this could be considered a worthwhile outcome of the MUR consultation. In addition, it should be noted that while these action plans appeared to have been associated with compliant patients with no medicine-related problems, the reality was that further information clarifying the extent to which pharmacists addressed a variety of issues ranging from dealing with side effects to avoiding contraindications identified during the MUR was recorded elsewhere on the MUR form.

3.4.1.4   MUR paperwork

Problems with the MUR paperwork, especially the original 4-page MUR form, have been highlighted in the literature (Anon, 2006c; Wang, 2007). However, this research suggests that pharmacists may have elected, consciously or subconsciously, to complete certain sections of the MUR form for the patient's benefit and other sections for the GP's benefit. This may provide partial explanation for the additional detail contained in sections of the MUR form other than the action plan. The action plan was intended to contain information on actions completed during the MUR as well as further action required as a result of the MUR, whether the action was for consideration by the patient, the pharmacist or the GP. But the literature suggested that many GPs ignored MUR forms (Anon, 2006c) and pharmacists may have not considered it worthwhile to complete them fully, even

though form-completion would have been covered as part of the training to become accredited to deliver the MUR service.

While this audit highlighted a number of problems with the MUR paperwork, it should be noted that the MUR forms were not developed to capture the entire MUR. Their intention was to record certain aspects of the patient's compliance with their medication regimen and recommendations made during the MUR, to serve as a mode of communication with the patient's GP and to provide patients with a summary of the key points discussed (PSNC, 2010f). The MUR form would therefore not necessarily provide sufficient data for a peer reviewer to build a true picture of the MUR delivered and to assess its quality, nor could it be considered an accurate reflection of the social interaction that took place between the patient and the pharmacist.

3.4.1.5   Peer review and MUR quality

Much has been written about the potential for fraudulent claims for MURs provided by pharmacies (Anon, 2006d; McDonald *et al.*, 2010; Moyo, 2010; Anon, 2011) hence PCOs began to request information relating to the MUR service to investigate these claims. The suggestion to implement peer review to investigate the quality of MURs and potentially inform decommissioning of the service where pharmacies consistently fail to meet the required standard has not been retracted. Peer review is therefore likely to be implemented in relation to the MUR service at some point. For GPs, peer review has been associated with the process of revalidation (Southgate *et al.*, 2001; Southgate and Pringle, 1999). The General Medical Council's (GMC) Performance Procedures were first introduced in July 1997 (GMC (Professional Performance) Rules Order of Council 1997). This peer review process usually includes:

> A visit to the doctor's place of work, interviews with the doctor;
> interviews with third parties, including the complainant or
> complainants in the case, a review of a sample of the doctor's records
> and practice documents, a case based discussion using a selection of
> the above cases to explore the doctor's reasoning [and] observation

of the doctor's interaction with patients (where this is practical and the doctor is working). (GMC, 2010)

However, these procedures are only invoked if a complaint regarding a GP's performance is received by the GMC. The General Pharmaceutical Council (GPhC) has not yet developed its standards on proficiency and it remains unclear whether procedures similar to those of the GMC will be implemented (GPhC, 2013).

Harding and Wilcock (2008) concluded that pharmacists' concerns for peer review were related to a perception that qualification as a pharmacist did not necessarily provide assurance of ability to deliver the MUR service. While these and other concerns surrounding peer review remain, so does the question around MUR quality, although a definition of a 'good quality MUR' is yet to be published.

3.4.2 Medication regimen complexity

Complex medication regimens and polypharmacy can result in non-adherence to regimens and adverse drug reactions (Chrischilles *et al.*, 1992; Muir *et al.*, 2001) and contribute to costs associated with drug-related morbidity and mortality. Therefore consideration was given to prioritising patients for the MUR service based on the complexity of their prescribed medication regimens. The complexity of patients' medication regimens were calculated based on the MRCI. The application of MRCI weightings as well as weightings for additional dosage form categories identified during this research allowed the calculation of an actual MRCI score for each patient's medication regimen. The MRCI may be considered a useful theoretical tool to enable pharmacists to identify patients who could benefit from an MUR if it is accepted that a higher complexity score is related to regimens where adherence could be problematic. However, the MRCI is labour-intensive to apply and therefore impractical hence the possibility of simplifying the calculation of a regimen's complexity was investigated. Although this research did not set out to examine the MRCI in detail, a number of shortcomings of this tool were identified during its application and these are discussed in section 3.4.2.2.

3.4.2.1　Complexity and number of items per regimen

There was a strong positive relationship between the total number of items per regimen and the actual MRCI scores (R^2 = 0.715), but the variation in MRCI scores could not be explained by the number of items in the regimen alone. This was perhaps to be expected because the actual MRCI score was not an additive score obtained from summing the individual medicine complexity scores for each item. This is consistent with literature suggesting that the number of medicines present in the regimen does not constitute complexity per se (Muir et al., 2001; Stone et al., 2001). The regression equation (equation 3.2) further supported this finding. A stronger positive correlation was found for the number of items and the alternative complexity score (R^2 = 0.840) as well as the number of items and predicted complexity score (R^2 = 0.882) because these complexity scores were based on the addition of complexity scores for each item in the regimen. These scores did not require manual calculation and were easier to calculate than the MRCI.

3.4.2.2　Shortcomings of the MRCI

The MRCI (see Appendix 3.1) provides a uniform measure of medication regimen complexity, but the weightings applied to the dosing frequency section of the MRCI may not necessarily be a true reflection of the complexity of a particular regimen. For example, 'as needed' (prn) regimens are assigned half the weightings of their respective daily regimens. This means that the dosage directions 'four times daily' will have a weighting of 4, while 'four times daily prn' will be given a weighting of only 2. This is explained "on the basis that symptoms prompting the need for medication would reduce complexity" (George et al., 2004, p.1371). It could however be argued that these dosage directions may be more complex as they require additional judgement from the patient as to when then medicine 'is needed' while patients would also be expected to avoid an overdose. It is also debatable whether the weighting of 2 assigned for dosing frequencies "on alternate days or less frequently", which is the same weighing applied to a 'twice daily' frequency, is a true reflection of the additional effort required on the part of the patient to remember these infrequent doses, e.g. alendronic acid once a week, and to take the medicine on the same day each week.

The instructions for applying the MRCI states that the weightings for each medicine and ultimately each regimen should only be based on the information available on the label of dispensed medicines. Cautionary and advisory labels and further verbal instructions are therefore not taken into account. Furthermore, "no assumptions are to be made based on clinical judgement" (George *et al.*, 2004, p.1374). Few medicines have standardised dosage instructions and this variety is rightly recognised through applied weightings in the MRCI "additional directions" section, resulting in different complexity scores. However, differences in the comprehensiveness of doctors' directions, without any further clinical judgement, can lead to great variations in the MRCI scores for the same medicine although the complexity of the regimen would not necessarily be different (see section 3.3.2.2). The impact of these variations is illustrated by several high standard deviations and wide ranges found in Table 3.9.

3.4.2.3   Development of MURCI

Individual medicine complexity scores were calculated based on the MRCI and additional dosage form weightings for each item in patients' medication regimens. These medicine complexity scores were averaged for each item based on the BNF subcategory to which the item belonged. The average complexity scores for each item were then used to predict a regimen's complexity by summing the scores for each item in the regimen (see Table 3.9). This allowed the calculation of a predicted complexity score for each patient's medication regimen. Thus, in contrast to the lengthy process of applying weightings from each of the three sections that the MRCI consists of, the predicted score is calculated by summing the average complexity scores of each item in the regimen and it correlated well with the actual MRCI score ($R^2 = 0.876$).

The list of average medication complexity scores for each BNF subcategory provided an initial draft of a new MURCI that would enable pharmacists to determine a complexity score for each patient's medication regimen with the aim to identify patients with more complex medication regimens who might benefit from the MUR service. It should however be noted that this initial draft of the MURCI scores was derived from the MUR forms received and as such only contains medicines that were

included in the dataset. In addition, there were instances where the actual frequency of the item appearing on the MUR forms and informing the average BNF subcategory medication complexity, i.e. the MURCI score, was low. These calculated averages may therefore not be accurate and this may have affected the results. However, this index could be refined through application to a large number of prescribed medication regimens and by comparing the prescribed directions of each item to the general directions and additional labelling instructions for each item listed in the BNF. It is envisaged that a validated MURCI would enable the calculation of a complexity score that could then be attributed to each prescribed medicine to overcome some of the shortcomings of the MRCI (see section 3.4.2.2). In addition, the application of MURCI could be automated by incorporating the MURCI scores for each item into GP and/or pharmacist computer systems so that each patient's repeat prescription would be generated with an associated complexity score.

While these scores could prove useful in selecting patients for the MUR service it should be noted that medication regimen complexity is a theoretical concept which does not take account of clinical, pharmacological or other demographic factors (George et al., 2004). Other factors associated with adherence including prospective and retrospective memory, presence of side-effects, inconvenience, dietary restrictions, patient's beliefs and perceptions, emotional factors and patient-provider relationships (Chesney, 2000; Murray and Kroenke, 2001; Van Ganse et al., 2003; Osterberg and Blaschke, 2005; Corsico et al., 2007) cannot be explained by medication regimen complexity. It may therefore be helpful to combine a patient's medication regimen complexity score with an adherence score, such as those obtained through the Brief Medication Questionnaire (Svarstad et al., 1998) or the medication adherence scale (Morisky et al., 2008) to further refine the patient selection process.

This chapter considered novel methodology that could be used to facilitate the identification of patients who could benefit from the MUR service based on the complexity of their prescribed medication regimens. This is because medication regimen complexity may be associated with lower rates of adherence. However, it is not suggested that this method replaces other approaches to patient selection for the

MUR service, merely that this method could provide another way to prioritise suitable patients in view of the annual cap on MURs. Another aspect that may influence patients' adherence to their medication regimens and/or any advice relating to their medicine-taking behaviour is their level of satisfaction with the service received. This issue is considered in the next chapter.

3.4.3 Study limitations

The study was carried out in one geographical area and one community pharmacy chain for a period of one month which limits the generalisability of the results. The response rate in this study was a limitation and the sample size was too small to make valid comparisons between the complexity scores of different BNF subchapters. Furthermore only the medicines contained on the MUR forms received were coded according to the MRCI and as such a variety of medicines and conditions were automatically, though unintentionally, excluded from the analysis.

CHAPTER 4 : DEVELOPMENT OF A CONCEPTUAL FRAMEWORK TO MEASURE PATIENTS' SATISFACTION WITH THE MEDICINES USE REVIEW SERVICE

4.1 Introduction

Quality of care remains at the heart of the NHS in the UK. *High Quality Care for All* (DH, 2008b) set out a vision of a world class, high quality NHS service fit for the 21st century. In this report, Lord Darzi highlighted the importance of clinical outcomes as well as patients' experiences in an evaluation of the quality of services received by considering three aspects when measuring quality of care. These included patient safety, patient experience and effectiveness of care. In terms of patient experience, it was suggested that improving the quality of care required an understanding of a patient's satisfaction with their own experiences while effectiveness of care would include measuring the patient's perspective through patient reported outcome measures (PROMs) (DH, 2008b). In his discussion of quality of care assessment, Donabedian (1966, p.711) also argued that quality of care would ultimately be validated by the effectiveness of care "in achieving or producing health and satisfaction".

Chapter 3 demonstrated that the national MUR form, which is the only record of the actual MUR, provided insufficient data to enable a valid assessment of the quality of the MUR service, its value or indeed overall patient outcomes. It was therefore deemed important to focus on finding measurable outcomes that would have meaning to patients by conducting a qualitative investigation of patients' MUR experiences and perceptions. Adopting qualitative methodology is an accepted method to generate deep insight and understanding about a social situation and the experiences of those involved. This work also included the investigation of pharmacists' views of the MUR service to supplement these findings. As such this work was aligned with two research domains for the evaluation of pharmacy services set out in *Pharmacy in England: Building on strengths, delivering the future* (DH,

2008a), namely patient and public perceptions and satisfaction as well as quality of service provision.

In light of the practical implications of measuring MUR outcomes, this chapter considers more immediate effects such as patient satisfaction, which has been shown to impact on issues such as adherence to medication regimens. The focus is therefore on considering patient satisfaction in relation to the MUR service. A specific focus is assessing whether existing patient satisfaction surveys would capture the essence of the MUR service and prove helpful in an evaluation of the quality of this innovative community pharmacy service.

In order to provide the relevant background, an introduction to customer satisfaction in general and patient satisfaction in the context of healthcare services is given. Different perspectives on the conceptualisation of patient satisfaction are discussed before specific questionnaires available to measure patient satisfaction with healthcare and community pharmacy services are considered.

4.1.1 Patient satisfaction

Although Oliver (2010, p.7) paraphrased "everyone knows what [satisfaction] is, until asked to give a definition. Then it seems, nobody knows", various definitions for satisfaction have been offered. In an earlier publication, Oliver (1977) viewed satisfaction as an overall emotional response based on the evaluation of the perceived discrepancy between prior expectations, based on some standard, and actual performance, while Hunt (1977) defined satisfaction as "an evaluation rendered that the experience was at least as good as it was supposed to be". Boulding et al. (1993) distinguished between these "transaction-specific" conceptualisations of customer satisfaction and "cumulative customer satisfaction" which they stated was based on experience with goods or services over time.

In contrast to the emotional response which Oliver described in consumer satisfaction, Hulka et al. (1970) defined patient satisfaction as the patient's attitude toward physicians and medical care. They suggested that patients' level of

satisfaction was dependent on a combination of evaluative judgements relating to the quality of medical care received. As a result they developed a scale to quantify knowledge about patients' attitudes.

Ware *et al.* (1983) also made a distinction between patient satisfaction ratings and reports about providers and care. They suggested that although a patient could be asked to report on the length of time spent with their healthcare provider, a rating on whether they felt they were given enough time would intentionally be more subjective so as to capture their personal evaluation of care that could not be determined through observation. Differences in satisfaction therefore reflected patients' perspectives on a service and their diverse realities of care received and were influenced by personal preferences and expectations (Ware *et al.*, 1983; Ross *et al.*, 1994; Schommer and Kucukarslan, 1997). In 1976 Ware and his colleagues developed the Patient Satisfaction Questionnaire (PSQ) which remains one of the most widely used tools to measure patient satisfaction in health care. In fact, PSQ-III and its counterpart PSQ-18 (Marshall and Hays, 1994) are the most recent versions used (RAND Health, 2011).

4.1.1.1 Conceptualising patient satisfaction

Based on various definitions and descriptions of patient satisfaction, some of which were discussed in section 4.1.1 above, Schommer and Kucukarslan (1997) put forward four conceptualisations of satisfaction, including performance evaluation, disconfirmation of expectations, affect-based assessment and equity-based assessment.

Studies focussing on patient satisfaction as a performance evaluation were largely based on the definition of patient satisfaction according to Ware *et al.* (1983) and utilised tools such as the PSQ to evaluate specific aspects of a service. The disadvantage of focussing on these types of satisfaction measures is that the evaluation may not necessarily focus on what the patient considers as important, but is instead designed based on the health service's or researcher's perspective (Schommer and Kucukarslan, 1997).

The second conceptualisation of satisfaction, disconfirmation of expectations, centred on the patient comparing the service received with the service expected (Oliver, 1977). As such satisfaction has also been defined in terms of a pleasurable response and linked to fulfilment (Oliver, 2010) while failure to meet the patient's expectations resulted in dissatisfaction. Disconfirmation of a patient's expectations can also result in an emotion leading on to the third concept of satisfaction, affect-based assessment, which has been used to measure patients' satisfaction with pharmacists' consultation-type services (Schommer, 1996). Items used for measuring satisfaction in this study included emotional aspects such as being thankful or pleased with the pharmacist's consultation. Here the degree of the patient's emotional response was believed to be dependent on their initial level of expectation (Schommer and Kucukarslan, 1997).

The fourth conceptualisation of patient satisfaction was based on an equity-based assessment which involved a comparison of the patient's outcomes versus contribution, or input, with respect to those of the pharmacist (Oliver, 2010). Based on this assessment a patient would likely be less satisfied if they perceived that the pharmacist gained more from the MUR consultation than they did. In fact, equity has been related to fairness, and the latter has been related directly to satisfaction (Schommer and Kucukarslan, 1997; Oliver, 2010).

4.1.1.2 Measuring patient satisfaction

There has been a substantial increase in interest in measuring patient satisfaction over the past 30 years (Figure 4.1). Much of this interest was due to patient satisfaction measures being used to predict health-related behaviour and to indicate the quality of services delivered (Ware et al., 1977; Locker and Dunt, 1978; Pascoe, 1983; Bartlett et al., 1984; Crosby et al., 1990; Aharony and Strasser, 1993; Schommer and Kucukarslan, 1997; Johnson et al., 1998; Crow et al., 2002; Panvelkar et al., 2009).
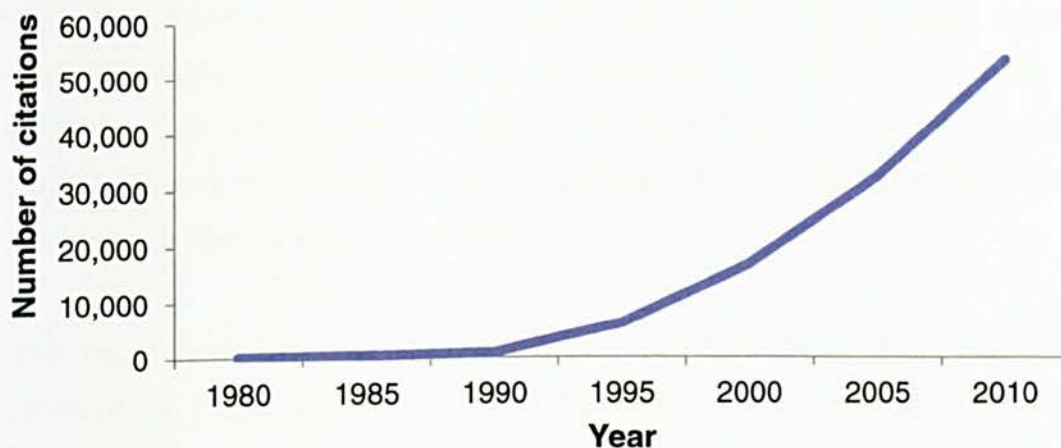
Figure 4.1 Number of MEDLINE citations for the term "patient satisfaction"

Measuring patient satisfaction with a cognitive community pharmacy service such as the MUR could therefore provide valuable information about the quality of the service being provided. But while there is a plethora of patient satisfaction-type questionnaires in health and medical care, a review by Panvelkar *et al.* (2009) concluded that there were a limited number of instruments specifically developed and validated to measure patient satisfaction with community pharmacy services. They identified five instruments (MacKeigan and Larson, 1989; Larson and MacKeigan, 1994; Larson *et al.*, 2002; Traverso *et al.*, 2007; Armando, *et al.*, 2008) of which only two focussed on measuring patient satisfaction with cognitive services (Larson *et al.*, 2002; Traverso *et al.*, 2007). Only one of these, the Patient Satisfaction with Pharmaceutical Care (PSPC) questionnaire, was developed in English (Larson *et al.*, 2002). This questionnaire, and its potential to measure patient satisfaction with the MUR service, is discussed in more detail below.

4.1.1.3 Measuring patient satisfaction with community pharmacy services

4.1.1.3.1 The Patient Satisfaction with Pharmaceutical Care (PSPC) questionnaire

The 20-item PSPC questionnaire was a result of further development and validation of a multidimensional instrument to measure satisfaction with pharmacy services (MacKeigan and Larson, 1989) which was based on the PSQ. The PSPC questionnaire consists of two highly interrelated factors to measure patient

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satisfaction (Appendix 4.1). The first dimension, "Managing Therapy", includes items specifically related to pharmaceutical care while the second one, "Friendly Explanation", includes items associated with the setting of the pharmacy, including explanations, information and instructions given as well as items relating to the friendliness of staff and speed of service.

Variations of the PSPC and its precursor, the Satisfaction with Pharmacy Services Questionnaire (Larson and MacKeigan, 1994), have been used by others to compare satisfaction levels between mail-order and traditional pharmacy services (Johnson *et al.*, 1997; Pinto *et al.*, 2010). Following on from their previous work, Johnson *et al.* (1998) evaluated the multidimensional structure of satisfaction with pharmacy services and investigated the degree of correlation between a general satisfaction scale and satisfaction with specific aspects of pharmacy services. Their findings supported the hypothesis of a hierarchical model (Marshall *et al.*, 1993, p.481) in which satisfaction could be represented as "both an overarching general domain and a set of discreet dimensions" affecting unique aspects of patient satisfaction.

Although the PSPC was developed to measure patient satisfaction with cognitive pharmacy services, it may not include specific domains unique to the MUR service that had only relatively recently been introduced. In fact, none of the instruments discussed above seemed entirely relevant to measure patient satisfaction with the MUR service. The appropriateness of using other patient satisfaction measures, such as the Community Pharmacy Patient Questionnaire (CPPQ) that was introduced at the same time as the MUR service, is therefore considered in the next section.

4.1.1.3.2 The Community Pharmacy Patient Questionnaire (CPPQ)

When the MUR service was introduced in April 2005, the community pharmacy contractual framework also introduced a requirement for an annual CPPQ (formerly known as a patient satisfaction survey) (PSNC, 2009) to be administered as part of the community pharmacy essential service, clinical governance. The CPPQ (Appendix 4.2) offered a method for assessing and addressing patient experience with community pharmacy services. Since July 2012 the relevant pharmacy must

also collate the responses to the first nine mandatory survey questions (see Appendix 4.2), take appropriate action to address the issues identified and publish the results of the survey (PSNC and NHS Employers, 2012c). But the CPPQ only measures patients' views on general aspects of their pharmacy visit and does not make specific mention of the MUR service. Therefore a variety of MUR specific patient questionnaires have been developed since 2007 and these are considered below.

4.1.1.3.3 Questionnaires for measuring patient satisfaction with the MUR service

An MUR resource pack for community pharmacists developed by an LPC (Devon and Gloucester LPC, 2007) contained an MUR patient satisfaction questionnaire consisting of four questions. Although the questionnaire would provide information on whether or not patients found the MUR useful it is doubtful that it would have provided much detail based on patients' level of satisfaction with the service.

In 2009 the RPSGB, the Royal College of GPs and the Clinical Audit Support Centre Ltd. launched their national multidisciplinary audit on MURs. This audit involved community pharmacy, general practice, PCOs and patients who have recently had an MUR (RPSGB, 2009a). Chapter 3 provided a discussion of this audit from community pharmacists' perspective while the patient survey is considered here. This MUR patient survey (RPSGB, 2009c) consisted of two sections (Appendix 4.3). The first section recorded pharmacy demographics and the second section contained 10 questions concerned with patient feedback. The survey followed a tick-box format allowing a yes/no/not sure response to questions. Apart from one Likert-scale question which aimed to assess how useful the patient found their MUR and a text box for patients to write down any comments based on their experience of the MUR, the focus was not on patient satisfaction. Instead the survey collected information based on each patient's recollection and a report of actions carried out by the pharmacist rather than recording their satisfaction rating (Ware *et al.*, 1983) for the service received.

A more sophisticated MUR patient satisfaction survey (Appendix 4.4) was developed as part of the *MUR Support and Evaluation Programme* (NPA and PCPA, 2010).

This survey attempted to record patients' reasons for accessing the MUR service, for example concerns about their condition, wanting advice from the pharmacist, wanting to know more about their medication, being confident that the pharmacist would give good advice or any other reasons, before asking patients to indicate their level of agreement with a range of statements (326 responses were received; response rate 67.8%). Open-ended questions included "What did you like most about the service?" and "What did you like least about the service?" and space was available for patients to write any additional comments they may have had about the service.

Youssef *et al.* (2010) also administered an MUR questionnaire consisting of three statements to 152 patients (response rate was 53.3%) although the focus was not specifically to measure their satisfaction with the service, but rather to capture their perceived benefit from accessing the MUR service (see Table 1.1 and Table 1.2 for more detail).

When all these questionnaires are considered, the PSPC questionnaire, the RPSGB MUR patient survey and the MUR patient satisfaction survey seems most relevant to consider in terms of measuring patient satisfaction with the MUR service. But given that the MUR service introduced new sets of behaviours on the part of the patient and the pharmacist, as discussed in Chapter 2 (see section 2.1.3.4), additional patient satisfaction questionnaires that were based on relatively new cognitive community pharmacy services were also scrutinised. Two questionnaires that focussed on evaluating pharmacists' behaviours that could be related to the MUR were identified. The first was a bespoke questionnaire to explore patients' perspectives and experiences of pharmacists' supplementary prescribing (Stewart *et al.*, 2008). The other questionnaire assessed patients' satisfaction with, attitudes toward, expectations of, or experience with community pharmacy in general, which also aimed to evaluate the effect of the community pharmacy-led medications management service for patients with coronary heart disease (Tinelli *et al.*, 2007). These studies developed their own instruments to measure patient satisfaction (Appendices 4.5 and 4.6).

Patient satisfaction questionnaires can provide valuable information on adjustments or modifications necessary to increase patient satisfaction with and the quality of the MUR service. However, for the questionnaire to be used optimally, it must be service specific and based on patients' actual experiences with the service (Locker and Dunt, 1978). The shift towards patient-centred care in the pharmacy raised the issue of adapting existing satisfaction questionnaires to assess the patients' satisfaction with new cognitive pharmacy services such as the MUR service. Five satisfaction questionnaires outlined above were considered useful as a basis for measuring patient satisfaction with the MUR service. These included the PSPC, the RPSGB patient survey, the MUR patient satisfaction survey, the pharmacists' supplementary prescribing questionnaire and the medications management service questionnaire (Appendices 4.1 to 4.5). However, in order for the results of an MUR patient satisfaction survey to become meaningful to pharmacists and policy makers, it arguably is necessary to draw on suggestions by Locker and Dunt (1978) and Williams (1994), i.e. to determine how patients perceived and evaluated this service so as to identify and employ criteria for standards used by the patients themselves. That is, the concepts that were relevant to satisfaction with the MUR had to be investigated from the perspective of users and service providers, so that eventually a conceptual framework would reflect ideas and beliefs important to those receiving the service.

4.1.2 Aims and Objectives

The aim of this chapter was to consider an immediate outcome of the MUR service, namely patients' satisfaction with the service, by determining patients' and pharmacists' perceptions of the MUR service to develop a conceptual framework that could be used to inform item development of a patient satisfaction questionnaire bespoke to the MUR service. That is, interviews were used to guide the development of appropriate concepts for such an instrument.

The specific objectives were:
- To conduct and observe MUR consultations to develop an MUR patient pathway and identify different stages of the MUR consultation,

- To thematically analyse existing patient satisfaction questionnaires and link these items to the MUR consultation stages,

- To identify specific elements of the overall MUR process that were not captured through existing patient satisfaction questionnaires,

- To explore patients' and pharmacists' views and perceptions of the MUR service through in-depth face-to-face semi-structured interviews,

- To identify master themes for patient satisfaction by analysing interview transcripts using interpretative phenomenological analysis (IPA), and

- To develop a conceptual framework for measuring patient satisfaction with the MUR service.

4.2 Methods

4.2.1 Ethical approval

Favourable ethical approval for this study was received from the NHS Surrey Research Ethics Committee on 2nd June 2008 (see Appendix 4.7) and the Kingston University Faculty of Science Research Ethics Committee on 12th June 2008 (see Appendix 4.8).

4.2.2 Participant recruitment

The participant recruitment strategies detailed below were also approved by the collaborating community pharmacy chain.

4.2.2.1 Pharmacist recruitment

Pharmacists were recruited for observation of MUR consultations and/or semi-structured interviews about the MUR service. Community pharmacists registered with the RPSGB, the regulating body at the time of this research, and actively delivering MURs at one community pharmacy chain in two geographical locations in South East England were identified through their line managers who supported participation in this research. Oral and written information (see Appendix 4.9) about

the research project was given to prospective participants to invite them to take part in one or both stages (non-clinical observations and/or semi-structured interviews) of the study. Pharmacists who provided written consent to participate in the study were recruited. Convenient times were arranged to carry out observation of the MUR consultations. In addition, mutually convenient times for semi-structured interviews with recruited pharmacists were arranged during normal pharmacy opening hours. A registered locum pharmacist was provided to carry out necessary pharmacists' duties while the interview was taking place.

4.2.2.2 Patient recruitment

In order to be included in the study patients had to be eligible to receive the MUR service, have had an MUR consultation or be about to receive an MUR consultation. Patients who had never had an MUR and were unwilling to access the service, children under 16 years of age, adults with learning disabilities, adults in emergency situations, those with dementia and those who were severely ill, were excluded from the study.

1. Non-clinical observations:
    i) Pharmacists taking part in the study identified patients who were eligible for the MUR service through the pharmacy's PMRs. Pharmacists then invited these patients to have an MUR consultation. This process was in line with the standard procedures for identifying patients eligible for the MUR service and the national MUR service specification (PSNC, 2004).
    ii) Once the patient agreed to have an MUR consultation, the pharmacist and/or their support staff provided the patient with information about the study (see Appendix 4.9) too and asked them whether they were willing to participate. Further support and information was available where needed.
    iii) Willing participants were asked to provide their written consent to take part and those who gave their consent were recruited. After the MUR consultation had taken place, participants were invited to participate in a semi-structured interview as well (see recruitment

strategy below). Patients not willing to participate in the study or not willing to provide written consent were not recruited, but still received the MUR according to standard procedures.

2. Semi–structured interviews:

i) On a predetermined day, each recruited pharmacist was asked to identify, via the pharmacy's PMRs, patients collecting their repeat medication who have had an MUR.

ii) · The pharmacist or pharmacy support staff provided these patients with information on the study (see Appendix 4.9) and invited them to take part. Support and further information was available to answer any questions. Patients involved in the observational study were also invited to participate in an interview (see above).

iii) The pharmacist or pharmacy support staff identified patients who were willing to participate and their written consent to participate was obtained. These patients were subsequently recruited to the study and for each patient a convenient time was arranged for the interview to take place at the particular community pharmacy.

In each case, separate consent was sought for the audio-recording of the MUR consultation and the interview with the researcher. Notes were also made during the observations. All patients who participated in the semi-structured interviews were given a one-off payment of £10 to thank them for their time.

The process of recruiting patients to the MUR service was also observed and notes made. Consent for observing this process was not obtained and conversations were not recorded, but a notice informing patients and customers that research was taking place was displayed in the pharmacy.

4.2.3 Data collection

4.2.3.1 Conducting and observing MUR consultations

Five MUR consultations were carried out with eligible patients after meeting the requirements for delivering the MUR service in accordance with the MUR service specification and relevant Directions (PSNC, 2004; The Pharmaceutical Services Directions, 2005). Seven MUR consultations conducted by other pharmacists were then observed at two pharmacies between 20 October 2008 and 15 February 2010.

4.2.3.2 Semi-structured participant interviews based on their experience and views of the MUR service

Fifteen semi-structured, face-to-face patient interviews were carried out between 24 September 2009 and 26 February 2010. The interviews were based on an interview schedule, topic guide (Appendix 4.10), developed from data collected during the MUR observations. The interviews were conducted with discussion focussing on six principal areas: how patients were recruited to the MUR service, the MUR consultation and their experience during the consultation, usefulness of the service, the aim of the MUR service, their impressions of the service and any recommendations they wanted to make. While the interview schedule helped to guide the interview process, it did not dictate the discussion. Interesting areas that emerged were explored further (Smith and Osborn, 2008).

In addition, and to supplement findings, eight pharmacists were interviewed between 5 August 2010 and 24 September 2010. These face-to-face interviews were also based on an interview schedule (Appendix 4.11) and focussed on the following principal areas: recruitment process, motivation for delivering the MUR service, environment, communication, the importance they attached to mannerisms and outcomes of the MUR service.

4.2.4   Analysis of observation and interview data

The audio-recorded observation and interview data were anonymised and transcribed *verbatim*. The data were kept in password-protected documents on password-protected computers.

The MUR observational data from transcripts and field notes were thematically analysed to determine the flow of the MUR consultation and the focus of the discussion. The observation transcripts, data from MURs conducted and the MUR Competency Framework (NHS, 2005), were then used to develop an MUR patient pathway.

Items from the five patient satisfaction questionnaires identified from the literature review were then categorised according to the newly-developed MUR patient pathway and linked to each relevant stage. The aim was to determine whether all elements of the pathway were being captured by existing questionnaires. In addition, the questionnaire items that could be related to the MUR service were thematically analysed to identify specific concepts that were included in the satisfaction questionnaires.

A case and theme based approach was used to sort and manage patient interview data in a framework matrix both thematically by concept and by case (NatCen, 2011) (see Appendix 4.12). Patient interview transcripts were read repeatedly while they were analysed and coded according to the existing concepts relating to patient satisfaction as captured by other questionnaires. Additional concepts emerged through reading and rereading transcripts. Patient statements were coded separately and analysed using interpretative phenomenology (Smith *et al.*, 1999). Although a grounded theory approach (Glaser and Strauss, 1967) was considered initially, an IPA approach was chosen because it is concerned with the interpretation of the individual patient's personal perception of the MUR service. It is also associated with an understanding of patients' beliefs about the MUR service, or indeed a service delivered by a community pharmacist, and thus enables the identification of concepts that would influence their satisfaction (or not) with the

service (Smith and Osborn, 2008). Grounded theory on the other hand is concerned with developing a theoretical explanation for a phenomenon of interest relating to the MUR service. This type of methodology was considered too restrictive in a study where patients' perceptions on a relatively new service were being explored. Discourse analysis was also considered as an alternative method, but this method had already been used to analyse MUR PILs (see Chapter 2). Although IPA is a relatively new qualitative methodology it is "considered useful when one is concerned with complexity, process or novelty" (Smith and Osborn, 2008, p.55) and this method is largely associated with the in-depth analysis of a small number of cases.

The IPA involved marking relevant items in the interview transcripts, identifying emerging themes, noting connections and ordering these into lists. New emerging themes were improved by continuously checking and comparing the ideas with existing data and new data collected (Denscombe, 2010). Themes were member-checked, verified by constant comparing with existing and new data, agreed and then grouped into clusters. Based on these clusters master lists of themes were compiled. Once all the interviews were analysed, the master lists of themes were compared and brought together as sub-themes within super ordinate (or higher order) categories (Smith *et al.*, 1999). The pharmacist interview data were coded according to the master lists to give further context to the results. Relationships between these categories were further explored and developed into a conceptual framework for measuring patient satisfaction with the MUR service.

4.3 Results

4.3.1 Analysis of MUR observation data

Seven observations of the MUR service being conducted took place in two pharmacies. The MUR consultations lasted between 3.5 and 12 minutes. A computer was available in five of the consultation rooms used for the observations. One of the consultations was interrupted by a member of the pharmacy team asking the pharmacist to check a prescription that was due to be handed to another patient.

4.3.1.1 Thematic analysis

4.3.1.1.1 Information collection

During the MUR consultations the pharmacists seemed to focus on establishing an up-to-date list of the patient's current medication and whether they knew what all the medicines were for.

> *"I'm just going to check the medication you're on at the moment, how you're taking it, if it's the same as doctor's instructions." (Ob1)*

> *"Do you remember how to take this?" Patient responds "yes". "Please tell me." (Ob6)*

Some of the pharmacists' statements were formulated into questions that almost prompted the patient to answer in a certain way.

> *"Okay, and everything is controlled? No problems?" (Ob1)*

> *"Oh, and it's helping?" (Ob2)*

> *"No problems swallowing it, although I doubt that, they're so small?" (Ob3)*

In consultations where the patient's medical history was brought up on a computer screen in the consultation room the patients showed an interest in what records were held about them. They leaned forward towards the computer peering at the information appearing on the screen. Patients seemed happy to volunteer additional information about their health almost as if they considered it their responsibility to ensure the pharmacist was up to date with their medical history and to provide explanations for their medication regimens.

4.3.1.1.2 Patients' relationships with healthcare professionals

Patients mentioned a variety of other professionals involved in their health care.

> *"I've just had blood pressure checked [at the surgery], I am back next month and tomorrow I've got to go all through the asthma one." (Ob1)*

> *"Now see, that's what the physio keeps telling me." (Ob3)*

> *"I'll carry on taking it until I see the surgeon again." (Ob5)*

In terms of patients' relationships with these professionals, phrases to describe both a partnership as well as a more paternalistic or authoritarian relationship were used.

> *"That wasn't working that well so we [patient and doctor] then went onto the powdered one." (Ob1)*

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"She [GP] turned round and said, 'Well do you think we ought to up the dose?', so I said 'Well it's up to you'." (Ob2)

"Yeah, erm, well eh, I did stop. But, eh, I don't know, I think it helped with the stiffness at night when I take it. The surgeon said 'stop it' when I saw him so I've stopped it now." (Ob5)

4.3.1.1.3 The MUR form

The observations took place during the time when the MUR version 1 form was being replaced by version 2. Version 1 was available electronically while version 2 was not. In cases where an electronic copy of the MUR form was available (Ob1 and Ob2), the conversation seemed to be driven by the form and the focus was on populating the form with information received from the patient. There were instances where populating the form seemed to take priority over issues brought up by the patient. This finding was supported in a recent study by Latif *et al.* (2011).

Patient	*"I do get, eh, on a request is, erm, fungilin, build up of..." {cross-talking}*
Pharmacist	*"Which one?"*
Patient	*"...thrush"*
Pharmacist	*"Oh, oh, yes"*
Patient	*"I can't avoid it, I get them. Gargle [patient leaning back in chair as if gargling] and wash my throat out with water, it doesn't matter, it still builds, so..."*
Pharmacist	*"You're still doing that?" [Non-verbal response from patient indicating "Yes".] "So the blood pressure [tablets] you take every day?" (Ob1)*

Patient	*"These pills in here are the one, these are the ones that I take for my blood... [patient looking in prescription bag]*
Pharmacist	*"Yeah"*
Patient	*"...me blood pressure, the other ones, which are, which are me antidepressants, they're not, erm, the prescription still hasn't been signed yet, erm..."*
Pharmacist	*"That's fine, we'll get there. Any drug allergies at all, like penicillin or...?" {cross-talking}*
Patient	*"Yeah, penicillin" (Ob2)*

In cases where the electronic MUR form was populated during the MUR consultation (Ob1 and Ob2), the layout of the room and electronic equipment meant that a physical barrier between the pharmacist and the patient was created by the

pharmacist's arm whenever the mouse was used to navigate the MUR form on the computer screen. This action also directed the pharmacist's body towards the computer, away from the patient and subsequently reduced their eye contact with the patient. One patient was observed crossing his arms as a result of the pharmacist's change in body posture, although he continued to respond to the pharmacist's questions.

Where only a paper copy of the MUR form was available, the same pharmacist spent more time talking directly with the patient (Ob3), addressing their concerns regarding regular pain control and providing more detailed advice on safe doses to use.

4.3.1.1.4 Focus of the MUR

In addition to collecting information on the patient's current list of medicines and their use of these medicines, the pharmacists seemed to take on their advice-giving and educational role during the MUR consultation. Although patients seemed happy to volunteer additional information, the pharmacist explored only the surface of problems or issued raised and then brought the conversation back to the next section of the MUR form that had to be completed (Ob1, Ob2 and Ob3). During other observations (Ob6 and Ob7) the pharmacist almost quizzed the patient on their medicines' knowledge. In both these cases the patient had already had an MUR previously hence it could be argued that they knew what to expect. When they confirmed that they knew what their medicines were for, the pharmacist still asked them to explain it to him.

Where adherence issues became apparent during the patient-pharmacist discussion, the pharmacist did not necessarily make reference to the issue in the MUR action plan. In fact, the action plans were completed without the entries being explicitly discussed and agreed with patients and without asking patients whether there were specific health-related issues they wanted to raise. During the conversation there was very little indication of a true concordance-centred approach and the MUR consultation could be described as a fact-finding mission.

4.3.1.2 The MUR patient pathway

A patient pathway, including stages of the patient's journey from entering the
pharmacy, through the MUR process until the patient left the pharmacy with a copy
of the MUR form, was developed based on observational data and field notes
(Figure 4.2).
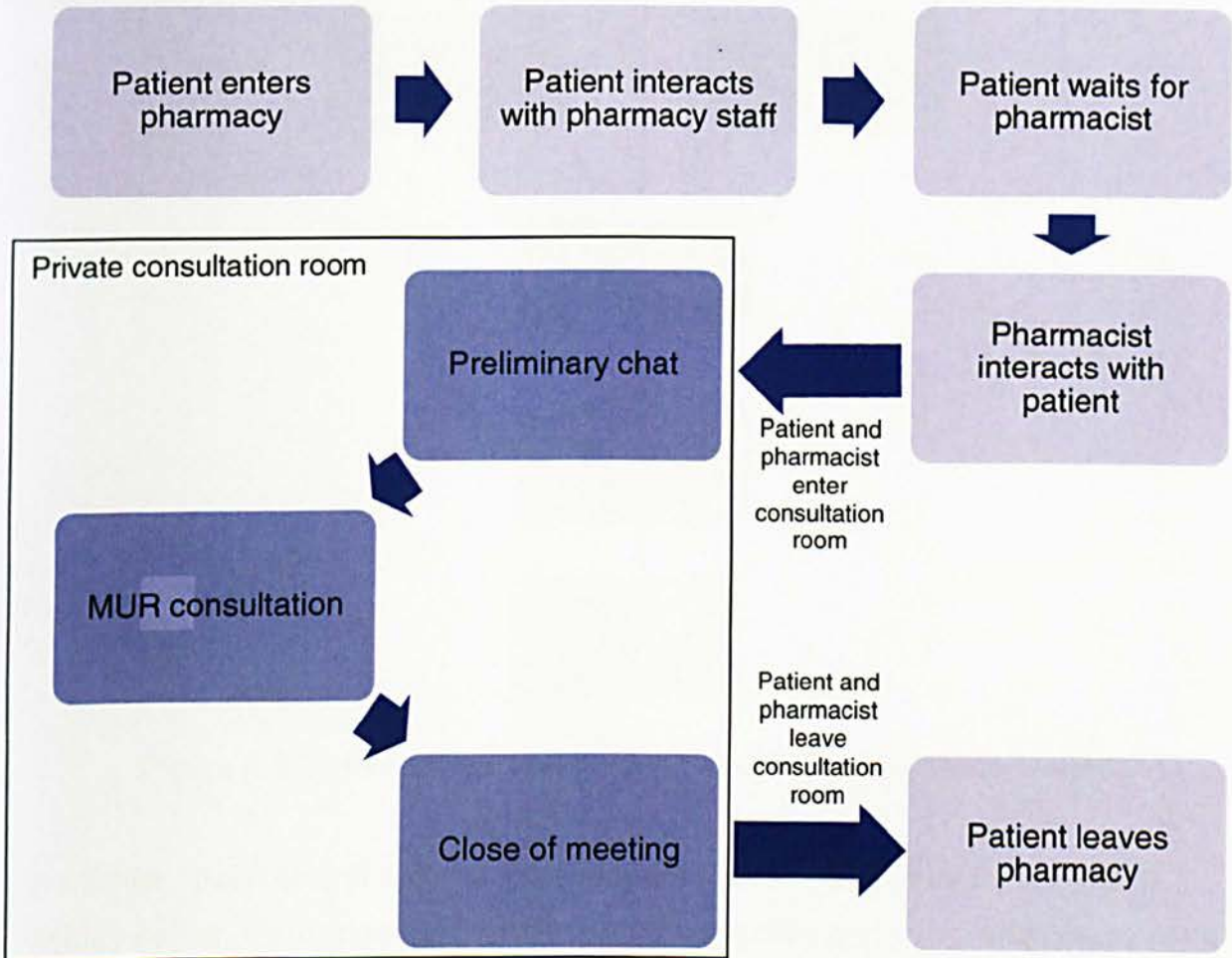
Figure 4.2 The MUR patient pathway

The 'new' patient and pharmacist roles in the context of the MUR service (see
section 2.1.3.4) specifically related to the discussion that takes place in the private
consultation room and therefore this stage of the pathway was further refined based
on the data collected. Seven stages in the MUR consultation (Figure 4.3), each
seeking to meet a specific aim, were identified.
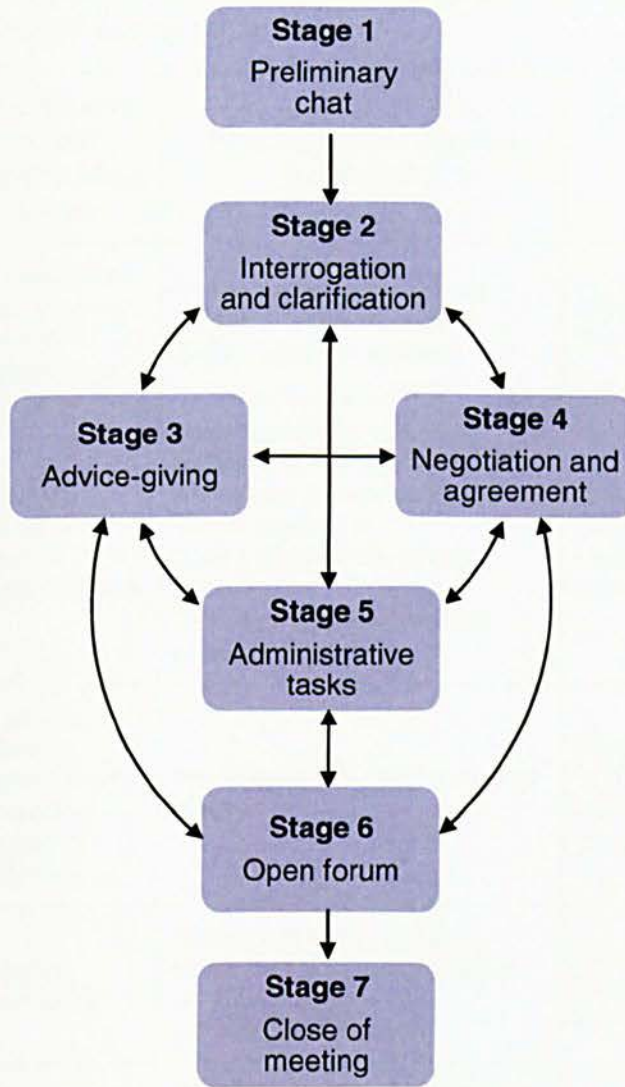
Figure 4.3 Simplified representation of the MUR consultation stages

In addition, patients and pharmacists were observed to adopt certain roles and display certain behaviours during the MUR consultation and within each stage of the consultation process. These roles and behaviours as well as the likely aim of each consultation stage are shown in Table 4.1.

Table 4.1 The aims of each MUR consultation stage and the roles and behaviours of patients and pharmacists during each stage

MUR consultation stage	Overall aim of the consultation stage	Pharmacist's role and behaviours	Patient's role and behaviours
1 – Preliminary chat	To meet MUR requirements To build rapport	Builds rapport with patient Explains MUR process Seeks patient's consent	Understands MUR process Provides consent
2 – Interrogation and clarification	To build picture of patient's medicines use	Asks questions regarding patient's prescribed and OTC medicines as well as patient's use of medicines Seeks clarification where necessary Receives information from patient	Answers questions Provides information and clarification on medicines and use of medicines
3 – Advice-giving	To advise patient to improve their knowledge and use of medicines	Provides information on use of medicines	Receives information on use of medicines Requests information on use of medicines
4 – Negotiation and agreement	To agree action plan	Makes recommendations Discusses recommendations with patient Agrees plan of action	Clarifies recommendations Raises issues Agrees plan of action
5 – Administrative tasks	To meet MUR requirements	Populates MUR form based on information received and key points discussed	Observes process
6 – Open forum	To discuss any outstanding health-related issues	Engages in two-way discussion about health-related issues, lifestyle and other health promotion activities, as well as general non-pharmacy related topics	Engages in two-way discussion about health-related issues, lifestyle and other health promotion activities, as well as general non-pharmacy related topics
7 – Close of meeting	To bring meeting to a close	Thanks patient Provides copy of MUR form	Thanks pharmacist Receives copy of MUR form

Questionnaire items from the five identified patient satisfaction questionnaires were then analysed and related to each of the MUR consultation stages. The results are discussed in the next section.

4.3.2 Analysis of patient satisfaction questionnaire statements

The five patient satisfaction questionnaires that were considered pertinent to this research (see section 4.1.1.3) contained a total of 69 items (range 9-20 items per questionnaire) exploring patients' views of and satisfaction with the services they were developed in relation to (Table 4.2). However, four of these items aimed to extract free text comments from patients (B11, C9, C10 and C11) and one question explored patients' reasons for accessing the particular service (C1). These items were excluded from further analysis as these did not specifically focus on measuring patients' satisfaction with the particular service and are indicated in italics in Table 4.2.

Table 4.2 Items exploring patient satisfaction from the five relevant patient satisfaction questionnaires

A – Patient Satisfaction with Pharmaceutical Care (PSPC)	B – RPSGB MUR Patient Survey	C – MUR Patient Satisfaction Survey	D – Pharmacists' Supplementary Prescribing Questionnaire	E – Medications Management Service Questionnaire
(1) The professional appearance of the pharmacy	(1) Before you saw the Pharmacist today, had you ever had a Medicines Use Review before?	*(1) Why did you decide to use this service?* *(I was concerned about my condition; I wanted advice from my pharmacist; I wanted to know more about the medicines I was using; I was confident that my pharmacist would give me good advice; Other)*	(1) I am totally satisfied with my visit to this pharmacist prescriber	(1) The CP seemed to take a genuine interest in me as a person
(2) The availability of the pharmacist to answer your questions	(2) Did you understand why you were having a Medicines Use Review?	(2) The importance of taking part in this service was made clear to me	(2) This pharmacist prescriber told me everything about my treatment	(2) I felt that others could listen
(3) The pharmacist's professional relationship with you	(3) Were you asked if you buy any medicines "over the counter" in the pharmacy or if you use any "complimentary" medicines, e.g. Herbal medicines or vitamin supplements?	(3) The pharmacist clearly explained how I could gain maximum benefits from my medication	(3) Some things about my consultation with the pharmacist prescriber could have been better	(3) The CP told me how to take my prescriptions
(4) The pharmacist's ability to advise you about problems that you might have with your medications	(4) Were you asked about medicines you have at home that you do not use or do not need anymore?	(4) The advice given to me by the pharmacist was useful	(4) This pharmacist prescriber examined me very thoroughly	(4) The CP told me what to do if I missed a dose
(5) The promptness of prescription drug service	(5a) Were recommendations made to you to change the way in	(5) I feel that I understand more about my medication since using this service	(5) This pharmacist prescriber was interested in me as a person, not just	(5) The CP told me about possible side effects of my prescriptions

which you use or take your medications?		my illness	
(6) The professionalism of the pharmacy staff	(5b) If you answered "Yes" to Q5a regarding recommendations for changes, are you likely to make these changes?	(6) A follow-up visit to the pharmacy would be of benefit to me	(6) I understand my illness much better after seeing this pharmacist prescriber	(6) The CP gave me information about my health as well as my prescription medications
(7) How well the pharmacist explains what your medications do	(6) Do you think your knowledge about your medicines and how to take and use your medicines has improved as a result of your Medicines Use Review?	(7) I am happy with the length of time that I spent in the pharmacy	(7) I felt this pharmacist prescriber really knew what I was thinking	(7) The CP asked about any over-the-counter medications I may be taking
(8) The pharmacist's interest in your health	(7a) Were you given an opportunity to raise questions that you wanted to ask?	(8) I would recommend this service to others	(8) I wish it had been possible to spend a little more time with the pharmacist prescriber	(8) I was able to ask the CP all the questions I wanted to
(9) How well the pharmacist helps you to manage your medications	(7b) If you answered "Yes" to Q7a, did you feel that these were answered to your satisfaction?	(9) What did you like most about the service?	(9) I would find it difficult to tell this pharmacist prescriber about some private things	(9) Any questions I had were answered to my satisfaction
(10) The pharmacist's efforts to solve problems that you have with your medications	(8a) Were you given a copy of the Medicines Use Review form?	(10) What did you like least about the service?		(10) Any medication problem I was experiencing was sorted out
(11) The responsibility that the pharmacist assumes for your drug therapy	(8b) If you answered "Yes" to Q8a, please consider the following statements and tick all that apply: I can read the MUR form clearly I can understand the MUR form I feel that the MUR form will be helpful to me	(11) Please write any other comments you have about the service		(11) My concerns were taken seriously
(12) How well the pharmacist instructs you	(9) Did you feel that the area in which your			(12) I could understand the information I was given

about how to take your medications	Medicines Use Review took place was suitable for a confidential discussion?				
(13) Your pharmacy services overall	(10) Please indicate how useful you felt your Medicines Use Review was to you by ticking one of the boxes on the scale below: 1 2 3 4 5 Not ----------------------Very useful useful				(13) Other pharmacy staff seemed to be knowledgeable about the treatment of heart problems
(14) How well the pharmacist answers your questions	*(11) Please use the box below to tell us anything else that you would like to let us know about your experience of the Medicines Use Review*				(14) I had to wait too long for my prescription to be completed
(15) The pharmacist's efforts to help you improve your health or stay healthy					(15) The pharmacist made sure that I understood how to take my medications
(16) The courtesy and respect shown you by the pharmacy staff					
(17) The privacy of your conversations with the pharmacist					
(18) The pharmacist's efforts to assure that your medications do what they are supposed to					
(19) How well the pharmacist explains possible side effects					
(20) The amount of time the pharmacist offers to spend with you					

4.3.2.1   Thematic analysis of patient satisfaction questionnaire items

The remaining 64 questionnaire items were considered in relation to their potential to measure patients' satisfaction with the MUR service and 57 (89.1%) of these items seemed relevant, even though only 19 (29.7%) items had been developed with the MUR service in mind (from questionnaires B and C in Table 4.2). The 57 relevant statements were thematically analysed and yielded eight categories (Table 4.3). None of the questionnaires contained items in all eight categories.

Table 4.3 Thematic analysis of patient satisfaction questionnaire statements

Category	Questionnaire items
Pharmacist giving advice, providing information, or making recommendations	A4; A7; A12; A14; A19; B5a; C1; C3; D2; E3; E4; E5; E6
Pharmacist gathering information or asking questions	B3; B4; E7
Pharmacist's traits	A3; A8; A9; A10; A11; A15; A18; A20; D5; D7; D9; E1; E11; E12; E15
Patient asking questions	B7a; E8
Patient outcomes	B5b; B6; B7b; B10; C4; C5; D6; E9; E10
Environment	A1; A17; B9; E2
Administration	B2; B8a; B8b; C2
General satisfaction	A13; A16; C7; C8; D1; D3; D8

'Pharmacist's traits' related to the pharmacist's mannerisms, i.e. the way they behaved and the characteristics they displayed during their interaction with patients. 'General satisfaction' related to the patient's satisfaction with the pharmacy service(s) overall, the length of time spent in the pharmacy, courtesy and respect shown by the pharmacy staff and whether the patient thought that they would recommend the service(s) to others.

This thematic analysis supported the notion that existing patient satisfaction questionnaires were more focussed on pharmacists' advice-giving and educational

role. Sixteen (28.1%) statements related to the pharmacist giving advice, providing information, making recommendations, gathering information or asking questions (Table 4.3). There was little emphasis on the pharmacist's role in establishing a two-way patient-pharmacist conversation. In fact, only two (3.5%) statements related to the patient's role in the discussion and both of these aimed to establish whether the patient felt they were given the opportunity to ask all their questions during the consultation.

4.3.2.2 Categorisation of patient satisfaction questionnaire items according to the MUR consultation stages

Forty (62.5%) of the 64 patient satisfaction questionnaire items (Table 4.2) could be adapted to relate to the various MUR consultation stages (Figure 4.3). These are shown in Table 4.4. The remaining 24 (37.5%) questionnaire statements related to the patient's relationship with the pharmacist, pharmacist's traits, promptness of dispensing services and professionalism, knowledge and courtesy of the pharmacy staff and therefore could not be categorised in terms of MUR consultation stages. A number of these statements could affect satisfaction though and as such were included in the thematic analysis (Table 4.3).

It may seem contradictory that questionnaire items that are associated with a specific stage of the MUR patient pathway (Table 4.4) were included in a different category in the thematic analysis (Table 4.3). For example, questionnaire statement A10 "The pharmacist's efforts to solve problems that you have with your medications" is categorised as stage 3 of the patient pathway (advice-giving), but included under "Pharmacist's traits" in the thematic analysis. This is because although the statement related to the pharmacist's advice-giving role, it was formulated in a way that was associated with 'how' the pharmacist acted in solving the patient's problems. A total of five 'advice-giving' statements were coded as 'pharmacist's traits' (A9; A10; A18; E12; E15) based on this subtle difference.

Table 4.4 Existing patient satisfaction questionnaire items linked to each MUR consultation stage

MUR consultation stage	Questionnaire items linked to each stage
1 – Preliminary chat	B1; B2; C2
2 – Interrogation and clarification	A18; B3; B4; D9; E7
3 – Advice-giving	A4; A7; A9; A10; A12; A14; A19; B6; C1; C3; C4; C5; D2; E3; E4; E5; E8; E9; E10; E12; E15
4 – Negotiation and agreement	B5a; B5b
5 – Administrative tasks	B8b
6 – Open forum	A15; B7a; B7b; D5; D6; E1; E6
7 – Close of meeting	B8a

Similar to the results from the observational data (see section 4.3.1.1.4), the majority of statements (26/40; 65.0%) related to pharmacists' traditional educational and advice-giving roles, i.e. where the pharmacist asked questions and provided information (stages 2 and 3 of the MUR consultation), with little emphasis given to new patient and pharmacist behaviours within the 'concordance-centred' MUR consultation. In terms of the PSPC questionnaire, the supplementary prescribing questionnaire and the Medications Management Service questionnaire, this was to be expected because these questionnaires were not developed based on the MUR service. The RPSGB MUR patient survey was the only questionnaire containing items that could be linked to every stage of the MUR consultation process, although this survey was in a tick-box format as discussed in section 4.1.1.3.3 and hence provided little opportunity for patients to rate their satisfaction with the service.

4.3.3 Results and discussion of analysis of patient and pharmacist interview transcripts

Fifteen face-to-face interviews with patients (7 male; 8 female) were carried out in seven different pharmacies. Ten patients provided their age (range 50-82; mean 71 years) while ten patients (not the same group of patients) also provided information on the number of medicines they were taking (range 2-11; mean 5.4 medicines).

Patient interviews lasted between 10 and 52 minutes. Four pharmacies had a computer available in the consultation room at the time of the MUR consultation. Ten patients from these four pharmacies were interviewed. Eight face-to-face interviews with pharmacists (4 male; 4 female), all from different pharmacies, lasted between 26.5 and 40.5 minutes.

4.3.3.1 Patient interview transcript coding

Patient interview transcripts were coded based on the satisfaction categories (Table 4.3) identified in existing patient satisfaction questionnaires to determine whether these questionnaires were sufficient in capturing patient satisfaction with all aspects of the MUR service discussed by patients during the face-to-face interviews (see Appendix 4.13 for an example of a coded patient interview transcript). However, the existing patient satisfaction questionnaires were not deemed sufficient therefore the patient interview transcripts were subsequently subjected to IPA to identify concepts that were not captured by the existing questionnaires.

4.3.3.2 Interpretative phenomenological analysis (IPA)

IPA allowed the exploration of additional aspects that might have led patients to feeling satisfied (or dissatisfied) with the MUR service and its delivery. The aim was to create a comprehensive account of themes which had significance within the transcripts. Five super-ordinate themes linked to patient satisfaction with the MUR service were identified, i.e. relationships with healthcare providers, patients' views of healthcare providers (including pharmacists), patients' views and experience of health, healthcare services and medicines, patients' views of the MUR service and logistics. Each super-ordinate theme was supported by master themes and subcategories (Table 4.5).

Table 4.5 The compositional structure of the IPA themes

Theme 1: Relationships with healthcare providers				
Code	**Master themes**	**Code**	**Subcategories**	
1.1	Relationship process	1.1.1	Forming a relationship	
		1.1.2	Changes in the relationship over time	
1.2	Types of relationships	1.2.1	Authoritarian / Paternalistic	
		1.2.2	Supervisory / Controlling	
		1.2.3	Partnership	
		1.2.4	Professional	
		1.2.5	Friendship / Familiarity	
1.3	Features of the relationship	1.3.1	Faith / Trust	
		1.3.2	Respect	
		1.3.3	Non-threatening	
Theme 2: Patients' views of healthcare providers (including the pharmacist)				
Code	**Master themes**	**Code**	**Subcategories**	
2.1	Professional people	2.1.1	Knowledgeable / Skilled / Experts	
		2.1.2	Autonomous	
		2.1.3	Joint working and good communication with other healthcare providers	
2.2	Role in healthcare	2.2.1	Taking responsibility for the patient	
		2.2.2	Pharmacists taking on new roles/ Providing new services	
		2.2.3	Caring	
		2.2.4	Imparting knowledge / Educating patient	
		2.2.5	Providing reassurance / Allaying fear	
		2.2.6	Providing non-medical care	
		2.2.7	Providing support and motivation	
2.3	Being accessible/available	2.3.1	Process of gaining access	
		2.3.2	Time allowed for conversation	
		2.3.3	Approachable	

Theme 3: Patients' views and experience of health, healthcare services and medicines			
Code	Master themes	Code	Subcategories
3.1	Taking responsibility for own health/health care	3.1.1	Becoming an informed patient
		3.1.2	Having a right to make decisions regarding treatment
		3.1.3	Level of control
		3.1.4	Implementing lifestyle changes
3.2	Identifying with the concept of being a 'patient'	3.2.1	Experiencing an altered body
		3.2.2	Accepting the consequences of getting older
		3.2.3	Consequences of past decisions
		3.2.4	In need of medical treatment
		3.2.5	Emotional response to symptoms and subsequent diagnosis
3.3	Impact of medical treatment	3.3.1	Improves patient's health
		3.3.2	Affects patient's life
		3.3.3	Emotional response to treatment
3.4	Overall NHS services	3.4.1	Good-quality service
		3.4.2	Problems do exist
		3.4.3	Suffers from negative media

Theme 4: Patients' views of the MUR service			
Code	**Master themes**	**Code**	**Subcategories**
4.1	Accessing the MUR service	4.1.1	Expectations
		4.1.2	Patient's decision whether to access service
		4.1.3	Reasons for accessing the service
		4.1.4	Making appointments
4.2	Type of MUR interaction	4.2.1	Question and answer session
		4.2.2	Focussed
		4.2.3	Informal chat
		4.2.4	Patient participation
4.3	Outcomes of the MUR consultation	4.3.1	Being reassured / Having fears allayed
		4.3.2	Obtaining information and advice
		4.3.3	Increased confidence
		4.3.4	Problems sorted out
		4.3.5	Recommending service to others
4.4	Sharing of information	4.4.1	Receiving written information
		4.4.2	GP involvement
4.5	Marketing of the service	4.5.1	Getting to know about the service
		4.5.2	Requirement for efficient advertising
		4.5.3	Distinction between MUR/pharmacy and GP services

Theme 5: Logistics			
Code	**Master themes**	**Code**	**Subcategories**
5.1	Environment	5.1.1	Confidential / Private
		5.1.2	Level of comfort
		5.1.3	Medical history available on computer
5.2	Time issues	5.2.1	Dedicated pharmacist's time
		5.2.2	Acceptance that healthcare professionals are busy
		5.2.3	Awareness of other patients' needs

The framework matrix of patient interview data (see Appendix 4.12) was scrutinised based on the super-ordinate themes listed to identify connections between the themes, underlying beliefs, values and ideas that could be helpful in developing a conceptual framework for measuring patient satisfaction with the MUR service. During the analysis it was noted that identified domains were compatible with Donabedian's (1966) structure-process-outcome framework for evaluating medical care. The topics and themes identified through IPA and the domains uncovered through the framework matrix analysis were related to the components structure, process and outcome (Table 4.6). The next sections will provide detailed discussions of each of the components. In addition, pharmacist interview transcripts were coded based on the IPA themes to provide further context.

Table 4.6 Organisation of IPA topics and themes and framework matrix analysis according to the components structure, process and outcome

Component	Topic identified / Theme leading to conceptual framework development
Structure	Existing relationships between patients and healthcare providers
	Collaboration between healthcare providers
	Environment within which the MUR consultation takes place
	Time issues in relation to the provision of the MUR service alongside the pharmacist's other activities
Process	Recruitment of patients for the MUR service
	Agreeing to the MUR consultation
	Managing patients' expectations
	The patient-healthcare provider conversation
	Patient involvement in the MUR consultation
	Pharmacists' characteristics and mannerisms
Outcome	Emotional impact on the patient
	Viewing the MUR as worthwhile
	Recommending the MUR service to others
	Implementing recommendations or changes
	Having a written record of the discussion

4.3.3.2.1 Structure of the MUR service influencing patient satisfaction

As shown in Table 4.6, relationships with and collaboration between providers were included under the component 'structure'. Although this inclusion might seem unprecedented, these aspects of care related to arrangements that some patients felt were important to have in place to ensure the service could be delivered satisfactorily in the first instance and as such were judged to be part of the structure of care. Greenley and Schoenherr (1981), Cleary and McNeil (1988) and Aharony and Strasser (1993) also included aspects of the organisation of care and communication with other organisations under 'structure' of care.

- Existing relationships between patients and healthcare providers

Building a relationship with patients ought to be particularly important in the community pharmacy setting as patients do not have to register with a particular pharmacy and can choose from a variety of different pharmacies and pharmaceutical services within their local area. In general patients interviewed seemed to continue visiting the local pharmacy where they felt comfortable and where they were able to build a relationship with the pharmacist. Iqbal and Wood (2010) also found that patients felt more comfortable with pharmacists if they were known to them.

> "If you find a pharmacist that you can get on with and you don't feel intimidated by, then you'd be, you'll go back won't you?" (P3)

> "It's just we [patient and pharmacist] have clicked." (P4)

Some patients expressed an appreciation of the pharmacist getting to know them on a personal level. In addition, pharmacists perceived that the MUR service improved their relationships with their patients, a finding that was also reported in studies by Cowley et al. (2010) and Sheridan et al. (2011).

> "As soon as I walk through that door, she [the pharmacist] might be busy, and she would look over the top [of the counter] and as soon as she sees me she'll come [into the public area]. You [the interviewer] saw her come over and say hello to me just now, and my wife, 'Hello'. They know my name now, because I regularly come in for it. And, oh, she's lovely." (P5)

> "That he greets everyone by name is very, very good" ... "we're not a stranger coming in." (P9)

This resulting relationship seemed to have been built on a high level of trust in the pharmacist and associated with the pharmacists' professional standing in the community and their expertise in relation to medicines.

> *"Well they [patients in general] do. They trust pharmacists, yes. Because they're [pharmacists] considered, I mean, they're professional people who understand the medications." (P1)*

> *"She's [the pharmacist] the pillar that I lean on." (P4)*

> *"I trust her [the pharmacist] more than I would me doctor, I think. I honestly would." (P5)*

One participant described her relationship with the pharmacist and pharmacy staff as very important, *"because if you don't have that closeness with the staff or anyone else, you feel lost. Empty."* (P8), while another was honest about the fact that she did not have a relationship with the pharmacist *"because it seems to be a different person every time you come in"* (P12) due the number of locum pharmacists working in the particular pharmacy. Although relationship building could prove problematic in areas with a high turnover of pharmacists, especially in pharmacy multiples, some patients seemed equally content with getting to know the pharmacy team, rather than the pharmacist in particular.

> *"Whoever the person on the counter, dispenser, the pharmacist, store or whatever, they're all there for that same person, for that person coming in that needs some help, for whatever it might be." (P3)*

In contrast to patients having a choice of the pharmacy they visited, some patients explained that they did not feel that they had the same level of choice when it came to visiting the doctor.

> *"Today, I've been to see the GP, but on the Saturday, perhaps I shouldn't have said this, but because I know, have had reports that xxx [name of pharmacist] is good, so, I would have, but he wasn't on duty on Saturday, I would have asked him, you know, what he suggested about this cough." ... "With the GP, unfortunately, this is what's wrong with the National Health Service, is that there's absolutely, as you well know, there's no consistency. I saw a GP this morning that I've never seen before." (P12)*

Some patients stated that they were happy with their GP or GP surgery.

> *"They are pretty good down at my surgery. If I needed anything and I wanted to chat with anybody, I can do that." (P1)*

Another patient complained to an extent about the service he received at the GP surgery. Nonetheless, he kept returning to the same surgery. Perhaps this was because he was 'officially' registered at the particular surgery and that was where all his medical records were kept and he did not want to go through the process of changing to another surgery.

> *"He [the GP] don't even know what you're talking about half the time"*
> *... "Honestly. Lots of people have been moaning about him [the*
> *GP]." ... "He's my mate [one of the patient's friends], but he ain't got*
> *a good word for the doctor down there [pointing in the direction of*
> *one of the surgeries] anyway." (P5)*

• Collaboration between healthcare providers

All patients have to accept some level of responsibility for their health, even if this is only to the extent that they have to make the decision about whether and when to initiate a consultation with a healthcare professional. But accessing the healthcare system could result in a variety of professionals being involved in the patient's care including those in primary (doctors and nurses) and secondary (hospitals, including consultants, radiologists and physiotherapists) care settings. Patients observed seemed to take responsibility for ensuring that all their care providers were informed about aspects of their health and treatment. In the interviews they therefore seemed to value a degree of collaboration between healthcare professionals and good communication between providers involved in their care was highlighted as being important so as to optimise their care and therapy. Patients perceived the sharing of the MUR form with the GP as a form of collaboration between the pharmacist and the doctor.

> *"It's vital because if you're in there with the doctor, I find it a bit,*
> *you're in and you're out. You don't have a lot of time to, and if*
> *there's something you're not sure about, you kind of, unless you*
> *remember to say it straightaway, it's a bit of a rushed affair.*
> *Whereas, you can come down here and the pharmacist spends as*
> *much time as you need and it doesn't bother me. In fact, I think that*
> *it's a good idea the doctor knows that you're seeing a pharmacist,*
> *that there is communication between the two because it's better for*
> *the patient really because, you know, it's not like keeping the doctors*
> *on their toes, it's not that. It's just that I think they should be... you*
> *don't always remember because I know from experience with my*

dad, now he goes in there and he'll see the doctor and he forgets half of what the doctor has said. I mean, I know he's elderly but it can happen to a young person as well especially if you've had a bit of a 'oh, the reading is a bit high'. You know, the first time I was told about the thyroid thing, it knocked me completely. I didn't know what it was and what was happening and what had gone wrong with me. Much as I'm sure I'm not the only person, so I think that's vital, that link between the two. I think the two should work together to be perfectly honest." (P3)

"I was, think it's quite good actually [that the GP was aware of what was discussed during the MUR consultation]." (P3)

"It's a very, very good to come and know that your pharmacist is aware of what you are taking." (P9)

"That's useful actually [sending a copy of the MUR form to the GP surgery], because they should have some feedback to the surgery in case, because what is the point of just telling the pharmacist if it doesn't then get sent back" ... "'cause they really need to work together." (P14)

But another patient was not convinced that GPs would appreciate pharmacists' comments or recommendations in relation to patients' treatment.

"Sometimes the GPs, you know, are under pressure and, a bit grumpy. For instance, if there'd been comments in here [holding up copy of the MUR form], if the lady [the pharmacist] had said 'Well, I don't know why you're on that one if you are on that one', then I'd gone back to my GP with that comment. The GP would have just probably said 'Na-a, I know about best'." (P6)

Some pharmacists perceived that patients were willing to share information with them that they were not sharing with the GP. In these instances collaboration between healthcare professionals could be really important in terms of patient health outcomes. One pharmacist provided examples of cases where he used this information to explore reasons behind the patient's actions to determine whether their treatment was optimal.

"Often it's 'Oh I don't take my aspirin'. 'Does the doctor know?' 'No'. 'But you really should', you know, you don't want to go into any detail, 'it can prevent heart attacks' and stuff. It's giving enough information but not scaring them. So again, it varies from person to person." (Ph2)

- Environment within which the MUR consultation takes place

In general patients expressed the opinion that the consultation room was professional and an appropriate location for the MUR discussion. Patients further suggested that the room was a good idea and valued the privacy and confidentiality it brought to the conversation.

> "Well, I think it's quite good really, you know, because normally if you want to chat to pharmacists about anything, it's a bit public out there, isn't it? I mean, you might have a personal problem with your medication or something or whatever or creams and things. Here it's quite private and, I think, no, it's a good idea, yeah." (P12)

> "I think it's [having a consultation room] much more professional." (P10)

Only two negative aspects in relation to the consultation room were raised. One participant (P4) stated that the room was quite hot when she had her MUR the previous summer while the other participant (P9), who was wearing a hearing aid, was of the opinion that the acoustics of the room was not good. These patients were from two different pharmacies. While patients in a study by Iqbal and Wood (2010) stated that they thought the consultation rooms were too small and intimidating, pharmacists in this research identified a need to strike a balance between professionalism, e.g. a clean, tidy, clutter-free room and comfort, e.g. the room not looking too clinical, not feeling like an office and not too small and intimidating. They stated that in their experience patients needed to feel physically and emotionally comfortable in order to open up during the conversation.

In the case of two thirds of participants a computer was available in the consultation room at the time of their MUR. Lelievre and Schultz (2010) reported that half of the respondents in their study had no preference about the use of computers in the patient-doctor interaction, but concerns regarding the effect of the computer on the pharmacist's interaction with the patient have been raised as part of this research (section 4.3.1.1.3). However, during the interviews, patients did not share these concerns and actually appreciated the opportunity to look at their medication record on the computer screen, possibly because the screens in the pharmacy have never been accessible to them in

the same way as computer screens in GP consultation rooms that are visible to the patient. It also contributed to the perception that they were part of the discussion.

> "It was lovely because I was able to watch the screen [pointing to computer screen in the room] as well to see what we were talking about." (P4)

- Time issues in relation to the provision of the MUR service alongside the pharmacist's other activities

Time has been included in two sections of the patient satisfaction domains identified through the IPA and as such it relates to the components 'structure' and 'process'. Here it has been incorporated into 'structure' to highlight the fact that pharmacists needed to prioritise and structure their normal day-to-day dispensing and advice-giving activities around any additional services provided in the pharmacy. Patients showed an understanding of the fact that pharmacists were busy professionals and therefore seemed to appreciate the relaxed nature of the MUR consultation versus the perceived rushed consultation with the GP. Latif *et al.* (2011) also found that patients valued the time pharmacists spent with them.

> "In this day and age, the pharmacist, in spite of the time, as always, is always there if you've got an emergency question" ... "Time is very precious and I mean you're coming to this pharmacist and they're always very busy." (P2)

> "With the doctors it's in and out whereas you have more time [with the pharmacist]." (P3)

> "Your doctor is personal, but you have got that little bit more time [with the pharmacist]." (P4)

> "If you had wanted to discuss something, you've got to make two appointments, you know? And sometimes you just can't get two appointments together. It's just not possible and I have had one occasion many years ago, maybe one of them or two of them that you have to have the last appointment so that you go over the time and then the doctor's not very pleased about that, anyway. He just wants to go home." (P12)

In this respect it was interesting to note that participants seemed to be aware of other patients' needs for the healthcare professional's attention and that

pharmacists had to prioritise their other activities to enable them to spend time on a one-to-one basis during the MUR consultation.

> "That is good [having the private consultation] provided they have got enough people on the other side to do all the other jobs or any prescriptions urgently." (P13)

For this reason one patient stated that he was not "bothered" by the fact that the healthcare assistants interrupted the MUR consultation to have urgent prescriptions checked or to obtain consent for handing out dispensed items.

> "I think it's good [having a private consultation room]. Well, she [the pharmacist] got interrupted about four times. But it didn't bother me. Don't worry. No it's fine. Yeah, it's good, yeah." (P6)

Some pharmacists explained that they aimed to deliver the MUR service to patients while they were waiting for their prescriptions to be dispensed by one of their dispensing assistants to save their and the patient's time and to avoid keeping other patients waiting for their prescriptions.

4.3.3.2.2 Aspects of the MUR service process that may affect patient satisfaction

- Recruitment of patients for the MUR service

Patients' relationships with other members of the pharmacy team, such as healthcare assistants and dispensers, could be harnessed by involving them in advising patients of the availability of the MUR service and identifying and recruiting patients for the service, rather than relying on the pharmacist to drive the recruitment process. Even during the financial year 2011/12, a quarter of pharmacies in England were not claiming payment, hence delivering, the MUR service (PSNC, 2012b). This may partially be due to remaining problems with patient recruitment (see section 2.1.4.2 for more details on barriers to MUR service provision and sections 2.4.1 and 2.4.2 for a discussion of potential barriers to patient recruitment). According to the patients interviewed, the pharmacist played a key role in identifying and recruiting patients for the MUR service, but even so, patients seemed unsure of the reasons behind the invitation to have a medicines-related check by the pharmacist.

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"I thought 'what does she [pharmacist] want to check it for?'" (P4)

Nonetheless, the patients interviewed agreed to have the MUR consultation with the pharmacist for various reasons and these are discussed below.

- Agreeing to the MUR consultation

Various reasons for patients' willingness to participate in the MUR service were identified in this analysis and these are discussed below.

1) I don't have a choice. I have to do it.

> *"If they [pharmacists] say like, that you're, eh, you need to come for a, what's the word?, a review, then you have to come, have to come and do that. If they want to talk about it [the medicines], you have to come in and talk about it." (P8)*

2) The pharmacist/doctor/NHS wants this information and so I ought to do it.

> *"...and then when I come in one day and she said 'come we have to chat to you. NHS wants the information'." (P11)*

> *"I wasn't sure whether perhaps the doctor had said or had written on something, 'cause sometimes he gives me a little note, a little piece of paper which is attached to the thing [the prescription] and it's eh, come in for a blood pressure or, you know, or the new one, is: we've got swine flu vaccine and that sort of thing. I'm wondering if perhaps he put a little note on there, just check that she knows what's she's doing, she's getting a bit old [participant laughing], she's getting a bit old, maybe she's a bit dogberry and doesn't know what she's doing." (P12).*

> *"I'm happy to answer any questions that he [the pharmacist] wanted to know. It doesn't bother me in any way or worry me if they want to know." (P13)*

3) This is about my health and my medicines, so it will be good for me to do it.

> *"Because it's good to know. It keeps you up-to-date on the medicines, because you don't know." (P3)*

> *"It's very, very important, I want to know why I'm taking tablets, all the time, I'm the patient." (P11)*

> *"If you're on quite a bit of medicines you obviously want to know that people check up and make sure you're taking it properly, if you have any problems, so it's nice to know that they do check." (P15)*

4) This is just a routine service they are offering to all patients now.

> "I didn't know what it was about really. I had never been to anything like that before" ... "I just thought it was just a sort of routine, sort of maybe it was an extra service they were providing, or something like that." (P14)

5) It is my pharmacist who has invited me so I'll say yes.

The pharmacist seemed to have always been a *"familiar face"* (P4), a *"local person you got to know"* (P3, P10) or a *"friend"* (P10) that patients felt *"comfortable"* with (P1).

> "He [the pharmacist] asked if I would do it [have the MUR consultation] and I said 'Yeah'." (P4)

The use of the word "would" in this respect, rather than "wanted" could indicate another reason for agreeing to the MUR service, i.e. I can do something to help my pharmacist (see below).

6) My pharmacist is always there for me. Now I can do something to help my pharmacist.

Patients may have perceived their participation in the MUR discussion as 'helping the pharmacist', i.e. enabling the pharmacist to tick a box to indicate the service had been delivered, rather than 'getting help from the pharmacist' by having an opportunity to understand more about medicines' use through a confidential two-way discussion, i.e. a service which aims to benefit the patient.

> "I came in for a prescription and she [the pharmacist] said 'Would you mind coming in and sit with me and have a few words about the medical side of it?' I said 'Yeah, we [patient and his wife] don't mind'." (P5)

> "No, I mean, I'm happy to answer any questions that he wanted to know." (P13).

7) I have some time to spare.

> "The pharmacist on the occasion recently said, 'Have you got the time now to just discuss it?' and I did, so no problem" (P2)

> "She asked if I got a couple of minutes to spare and, you know, would I like to have this medical – medication check. So we came in [into the consultation room]." (P4)

> "Actually, they've done it [invited patient to have the MUR service] so three times and a couple of times, I'm not, I've been going off to work

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or whatever, but since today I had the time, so we sat down and went through it." (P6)

"They must have asked me if I was in a hurry and I said 'no'." (P14)

As can be seen from the list above, patients' reasons for accessing the service ranged from having some time available to spend with the pharmacist at the time of recruitment to possibly being coerced into taking part. In light of these findings pharmacists may have to reconsider their recruitment strategies so as to provide patients with sufficient detail of the MUR service to enable them to make an informed decision regarding their participation (or not). Other research has indicated that some patients perceived the MUR service to be a legal requirement or a service to benefit the pharmacy (Iqbal and Wood, 2010) while Latif *et al.* (2010) also found that patients generally agreed to the MUR service to help the pharmacist. When considering the equity-based assessment of satisfaction defined by Oliver (2010) (see section 4.1.1.1) patients who access the service 'to help the pharmacist' may have lower levels of satisfaction due to their perception that the pharmacist may gain more from the consultation than they will.

- Managing patients' expectations

Despite agreeing to access the MUR service, for whichever reason, patients revealed that they did not really understand what the service entailed nor what to expect even by the time they entered the consultation room.

"I had no idea at all [what to expect]." (P3)

"I had a bit of the collywobbles, you know, [when I came into this room] because it's not fear, that's not the right word, but unknown, something unknown" ... "I knew nothing at all" ... "Medication check, well, I don't know, I don't even know really what I thought." (P4)

"I didn't know what to expect." (P8)

The recruitment process left patients unsure of what to expect during the MUR consultation. In addition, Chapter 2 (see section 2.4.2) highlighted shortcomings in the PILs in setting patients' expectations regarding the MUR service. On the other hand, pharmacists indicated that they intentionally kept the invitation informal and that they provided more explanation about the MUR

service once they were already in the consultation room. Presumably patients would not be inclined to leave the consultation room at that stage.

Pharmacists also agreed that they had not necessarily *"thought about what they [the patient] might expect out of it [the MUR consultation]"* (Ph1). But expectation is seen as a major determinant of patient satisfaction with health care (Crow *et al.*, 2002) and Miller (1977) described four levels of expectation which would provide a subjective standard for determining patient satisfaction. These include the ideal or maximum level, the minimum acceptable level, the expected level based on past experience and the deserved level which involves establishing a subjective sense of what should be or what could be considered justified based on any investment required on the part of the patient. In the case of patients with limited knowledge of the MUR service or unclear expectations, high levels of satisfaction may be recorded, even if acceptable standards had not been reached (Crow *et al.*, 2002). Objectively measuring patients' level of satisfaction in the absence of prior expectation may therefore be slightly difficult, at least if Oliver's definition of satisfaction is accepted (Oliver, 1977) (see section 4.1.1). However, the lack of understanding of the service's intention and clearly managed expectations at the outset did not seem to affect patients' willingness to participate in the MUR service. In this regard, Bolding's notion of "cumulative customer satisfaction" (Boulding *et al.*, 1993) may offer an explanation as a patient's existing relationship with the pharmacist, or the pharmacy team, and their prior experience of other pharmacy services, possibly allowed them to expect a professional service from a medicines expert. If the MUR service then delivered on this aspect, they might have felt satisfied with the service received.

- The patient-healthcare provider conversation

In terms of the actual consultation process the relatively new patient-pharmacist consultation has not been subjected to extensive analysis in the same way as patient-doctor consultations have been in the past. Although GP consultations seem to have become more patient focussed over the years, at least according to the different models available (Draper, 2010; Mehay, 2012), most patients

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continued to describe their relationships and hence their interactions with GPs as paternalistic and authoritarian.

> "You feel as though you shouldn't question them [doctors] about what they've prescribed for you." (P1)

> "Just go and pick up what the GP had said and that was it – there it is. You got a little leaflet with it to tell you about it and on the label it said when and how to take. But, that was it." (P2)

> "...if the doctor said that, the doctor's the doctor and what he says goes." (P3)

> "The doctor is up there on that pedestal and if he says I've got to take them [prescribed medicines], I have to take them." (P4)

> "Because I'm in the hands of the GP really, aren't I? He's the expert, or, the lady that I saw yesterday [the diabetic nurse]. If they say I should be on this, who am I to say?" (P6)

> "The doctor is above you. You should yak to him and bring up all your problems and he should take care of it." (P7)

> "...if they [the doctors] say that's what should happen, obviously that happens." (P10)

Pharmacists also provided examples of patients merely following their GP's instructions.

> "The amount of times that I say, 'Why are you taking this?' and the person I get responds, 'GP's told me to'. Have no idea what they are doing and what they are taking and how they are taking it, but still re-order everything and just follow some kind of process." (Ph1)

In contrast, the conversation with the pharmacist was described as an "informal" (P3, P14) and "friendly" (P3) chat in a "relaxed" (P3) atmosphere. One participant was of the opinion that this could contribute to patients' willingness to open up to the pharmacist.

> "That it's not like a consultation with your doctor or with the hospital or something where it can be a bit cold. This [the discussion with the pharmacist] can be something where they [patients] might be able to bring out something that they wouldn't have dared to bring out normally." (P12)

In general patients did not seem keen on taking medicines and had been looking for ways to reduce their tablet burden. Some patients seemed to search for motivation from the pharmacist or for acknowledgement of their own efforts to stay healthy.

"I've always been concerned about the amount of medication I take"... "I've always thought I would like to reduce the amount of medication I take, but I've realised now that I'm not in that category. I've got to continue taking it."... "Well, yes, I mean, if I completely changed my lifestyle which is very, very difficult when you get to my age, but if I completely changed my lifestyle, maybe I could reduce them. But I try and keep reasonably fit. I go to the gym and I go for walks" ... "I go twice a week, I go once a week on average and I go for walks but I don't go mad. I just do a set routine which I've built up since I had my bypass surgery, CABG. Since I had that, they recommended rehabilitation to build up and I just do a series of exercises and trampoline things which take an hour and five minutes and that's it. I don't try and go beat any records or anything anymore, that's what I do. And if I feel there's any strain, I'll slow down a bit." (P2 – who was taking six prescribed medicines at the time)

"The medication that we unfortunately do have to take, you know. I don't want to take medication but that's the way it goes." (P4 – who was taking six prescribed medicines and three vitamins at the time; the tablet burden had reduced from "13 or 14" medicines)

"...and then I got a diverticular condition, and the doctor recommended Fybogel which I have two tablets [meaning sachets] per day and that was prescribed. But I'm weaning myself off those or have weaned myself off those because I'm at, on a very, very high fibre diet." (P9)

"Also cholesterol, I'm on a very low dosage there, but I've been told to keep going, you know, I don't like taking them, I mean, I'm a very non-pill person." (P10)

"On one of my tablets, I was trying to reduce it down and I was asking him [the pharmacist] when was the best time of the day to take them, because I was trying to reduce what I was taking and so he helped me with that one." (P15)

In the past medicines were accepted to possess "an inherent power to heal" (Taylor *et al.*, 2003, p.84) but deregulation of medicines from prescription-only medicines to OTC in a pharmacy (pharmacy medicines) and previous pharmacy medicines being available e.g. from newsagents and supermarkets (general sales list medicines) are thought to have impacted on the public's perception of medicines (Harding and Taylor, 2001). The provision of patient information with medicines in the UK has been regulated since 1977 (MHRA: Medicines Healthcare products Regulatory Agency CSM: Committee on Safety of Medicines, 2005), but in 1992 Directive 92/27/EEC of the European Commission required full, understandable information to be included with all

medicines. The result was that by 1999 all medicines on the market were accompanied by a PIL that was produced specifically to ensure medicines were taken safely and effectively. As such full disclosure of side effects were included which meant that patients, who were actively encouraged to read these leaflets, became more aware of medicines' ability to produce undesirable effects. In addition, patients are also likely to have greater access to electronic information via the internet. Therefore patients are more likely to do their own risk versus benefit analysis based on the information available to them and corroborating statements were made during the patient interviews.

> "...but the benefits outweigh the risks." (P1)

> "But beta-blockers and things like that do slow you down and have all sorts of adverse effects on you, I suppose, but you have to better accept that. If you stop taking them, of course, the alternative is quite serious." (P2)

The patients interviewed were all prescribed medicines for long-term medical conditions, although this was expected because they had an MUR consultation with the pharmacist, and it was apparent that they had come to the realisation that they had lost a certain level of control over their health.

> "I've discussed this [reducing the number of medicines that he takes] with the GP, and you know what they say, 'It's keeping you alive', so I have to take that as a serious comment." (P2)

This particular patient had implemented changes to his diet and even at the time of the interview (aged 71), was still going to the gym.

Patients had therefore come to the conclusion that whether they liked it or not, the medication was necessary to "keep them going" (P1). It seemed that they had considered the perceived benefits of taking the 'unwanted' medicines as suggested by the Health Belief Model (Taylor et al., 2003).

• Patient involvement in the MUR consultation

The patient's level of agreement with the pharmacist during the consultation is considered to be related to the concordance-focus of the MUR service. This aspect was deemed important to consider in terms of patient satisfaction with

the MUR service as the MUR was the first community pharmacy service promoting this type of patient-pharmacist interaction (see section 2.1.3.4 for a discussion of the new patient and pharmacist roles and behaviours introduced as part of the MUR service). One patient stated that service had to be *"sort of patient-driven really"* (P1), although he did not clarify what that meant to him. Patients were of the opinion that they should have a 'say' in their treatment, but none of them provided much information in terms of their expected involvement in agreeing actions or negotiating with the pharmacist. The only example of active involvement in the discussion about treatment was given in relation to a GP consultation.

> *"That was purely my decision [saying to GP that she was not going to take statins after experiencing side effects]." (P4)*

The content of MUR action plans were discussed in section 3.3.1 and many of those action plans contained references to lifestyle advice provided by the pharmacist. In relation to this it may be important for pharmacists to consider patients' intentions with regards to their health and agree actions based on the patient's needs. For example, the pharmacist could negotiate a plan of action with the patient based on the patient's own goals and provide motivation and support where necessary. According to the Transtheoretical Model of behaviour change (or Stages of Change model) (Prochaska and DiClemente, 1992) recommendations that are aligned with the patient's stage in the process of change are also more likely to be implemented.

Where recommendations were made based on changing the way in which the patient was taking their medicines (or not) in order to optimise therapy or reduce side effects or interactions, the patient's agreement to implement the recommendations could be affected by the manner in which the pharmacist delivered and discussed the information and pharmacists' characteristics and mannerisms displayed during the consultation are discussed below.

- Pharmacists' characteristics and mannerisms

Patients mentioned a variety of pharmacists' mannerisms and characteristics (Table 4.7). Some of these were stated explicitly while others were implied based on 'how' the pharmacist conducted the MUR consultation.

Table 4.7 Pharmacists' characteristics that may influence their relationships with patients

Overall trait	Characteristics	Participant number
The expert pharmacist	Skilled, professional, competent, qualified, knowledgeable, medicines expert, alert, responsible to customer	P1, P2, P4, P9, P11, P13, P14, P15
The focussed pharmacist	Thorough, giving focussed and individualised attention, taking an interest, efficient, aware of patient, giving time	P1, P2, P3, P4, P5, P6, P9, P10, P13
The friendly pharmacist	Approachable, accessible, available, helpful, polite, caring, calm disposition, open, friendly, good, dependable, trustworthy, personality that you would warm to, right approach to people, making you feel comfortable, liking people, not intimidating, easy to talk to, smiley, very nice	P1, P2, P3, P4, P5, P8, P9, P10, P11, P12, P13, P14, P15

Although time issues in relation to the provision of the MUR service alongside pharmacists' other activities were discussed as part of the component 'structure' of the MUR service, time was also included here as part of the 'process' of delivering the MUR service because patients viewed the length of time the pharmacist was willing to spend with them as an aspect that influenced the conversation. Pharmacists also stated that it was important that they were able to give patients "enough time" for the conversation.

It's not a timed thing, so it's not a case of, 'Well, I have to say it's only going to last three minutes, we have to do this before my next patient comes'." (Ph1)

Patients also appreciated the fact that pharmacists were accessible and available. They were of the opinion that it was easier to gain access to the pharmacist than to navigate the appointment system at the GP surgery and negotiate with the receptionist who had taken on a gatekeeper role (Arber and Sawyer, 1985).

"Most of the time you got to battle with the receptionist to get an appointment." (P3)

"You phone the doctor and you could be phoning all day or two, three days. You can't even get through." (P12)

4.3.3.2.3 Immediate patient outcome(s) of the MUR consultation

- Emotional impact on the patient

Patients' emotions are linked to their views of and beliefs about health, healthcare and medicines therefore every patient would have entered the MUR consultation room with a particular emotion. Many of the emotions voiced during the interviews related to uncertainties, fears or anxieties. In light of this, patients viewed reassurance, or having their minds put at ease, as a worthwhile outcome of the MUR service.

"I think it [the MUR] can put people's minds at ease." (P3)

"Well, I think it's reassuring." (P9)

The 'removal of doubts and fears' can be linked to pharmacists' educational and advice-giving role within the MUR and reassurance in particular related to pharmacists allying fears about side effects and cautions listed in medicine PILs.

In addition patients stated that they had confidence to become more involved in decisions about their health and treatment as a result of the MUR consultation with the pharmacist.

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"But I am more, having spoken to her [the pharmacist] and sort of getting the vibes, I'm more confident when I go to my doctor" ... "But you just feel more confident, you know, that's how she's [the pharmacist] made me." (P4)

- Viewing the MUR as worthwhile

Patients and pharmacists agreed that it was worthwhile for the patient to know that *"someone was taking an interest"* (P2, P5, P6, P9, P13, Ph2, Ph6, Ph7) in them. In addition to reassurance given by the pharmacist, one participant said that the MUR made *"all of the difference, all the difference then, quite honestly"* (P10). Patients also deemed the MUR worthwhile due to resultant improved knowledge about their medicines.

"Well, I think, yeah, everybody should have the chance [to have an MUR consultation with the pharmacist], you know, I do honestly, because they [pharmacists] know more about it [medicines] than anybody, especially this lady. She's lovely she is. She would explain it all to them [other patients]." (P5)

"I think I've got more of an understanding today what I'm taking and why than I had before." (P6)

"When people know what they're taking their pills for, it must help a lot more than just, 'I've been told to take this amount', you know. 'I don't know what it's for but I've been told to swallow this or that'." (P7)

"Very useful and educational." (P8)

The majority of statements relating to the MUR service's worth could be linked to information provided by the pharmacist and an associated increase in knowledge on the part of patients. This finding corresponded with results from the NPA and PCPA's survey of patients' opinions of the MUR service. In this survey patients indicated that the service "being helpful or informative" and the "clarification provided" were two of the five aspects of the MUR service listed that patients liked most (NPA and PCPA, 2010). Other aspects identified in the survey, e.g. the service being "accessible", it being a "personal one to one service" and "privacy", were also corroborated through this research. Patients' examples and reasons explaining why they viewed the MUR service as worthwhile could indicate their satisfaction with the service received.

In line with the MUR service's aim, pharmacists stated that the MUR service would be worthwhile to the patient if they understood their medicines better as a result of the consultation. Hence pharmacists kept their focus on educating patients during the MUR consultation.

> "I want them to understand what they are taking and why are they taking it and to know the side effects or risks of taking or not taking something. But the amount of patients, I think I've seen, obviously not every MUR is going to be a life-changing one, but you do get the odd one where you think that patient really did need someone to ask these questions to or needed someone to sit with them and explain what everything was for. And when you get one of those, you then realise why you continue doing them." ... "I think generally they do get something from it and that's why I carry on doing them, yeah." (Ph1)

- Recommending the MUR service to others

Patients mentioned that they recommended the MUR service to family and friends. This could serve as another indicator of their satisfaction with the MUR service (Crow *et al.*, 2002) as Hill and Doddato (2002) also described a correlation between patient satisfaction and intent to recommend services.

> "I went home [after the MUR] and told my husband and he came and had it done" ... "Get down there, xxx [husband's name], she's [the pharmacist] brilliant. She won't frighten you and it's [the MUR] really worth having done." ... "I must admit I have told as many people as I possibly can." (P4)

> "I do word-of-mouth in my very small circle saying that I get very, very good service from xxx [name of pharmacy]." (P9)

- Implementing recommendations or changes

Most patients gave some examples of recommendations made during the MUR consultation that made a difference to their use of medicines, although one of them stated that he *"just kept up to the old routine"* (P2).

> "We came in here [into the consultation room] and he [the pharmacist] really sorted me out. All I had to do was take the damn things [the tablets] 20 minutes before I had food instead of waiting 'til afterwards. It has made such a difference, you see, but the doctor said 'no, leave it'. So that's the difference." (P4)

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"It's very good, all the, I mean, now she, she [the pharmacist] say 'this tablet, you mustn't take now. Take for another few more times, if you still feel giddiness and all this thing, you, you know, you either come in here, or ask your GP'. When I come in here, then she ring up the GP and say what is the tablet to be altered." (P11)

"I asked her if that was okay and she said, well, in her opinion, it would probably be better if I took that one in the evening with my tablet that I take in the evening. So, then I changed that." (P12)

"xxx [the pharmacist] said to try and get the doctors to do something to help with one of the tablets I was taking and then got that sorted [due to side effects that the patient experienced]." (P15)

- Having a written record of the MUR discussion

Apart from viewing the MUR form as an important form of communication between the pharmacist and the GP, patients generally viewed this as an important health-related document.

"...took it away [the MUR form], filed it in my medical – I'm trying to be organised. Filed it there." (P4)

"I keep it. I still got. For the last two interview [meaning MUR consultations] I have I still got." ... "I do [look through the forms]. I just, when I reach home, I just sit down for a time and I just look through, then that's it, I put it away." (P11)

Keeping their health records may indicate that patients were trying to play a role in their health care or an attempt to take control of managing their health care.

This section focussed on the results of the IPA of patient and pharmacists interviews and analysis of the patient interview data framework matrix. Various aspects of the MUR service, i.e. its structure, process and outcome that a patient might consider when deciding on their satisfaction (or not) with the service, were discussed. These domains were subsequently organised into a conceptual framework for measuring patient satisfaction with the MUR service and are discussed in the next section.

4.3.4 A conceptual framework for patient satisfaction

The conceptual framework for measuring patient satisfaction with the MUR service is shown in Figure 4.4. The first level of the framework follows the structure-process-

outcome (Donabedian, 1966) approach with the various topics relating to each component comprising levels two and three of the framework.

4.3.4.1 Structure

In the conceptual framework, the topic 'relationships' includes consideration of patients' existing relationships with healthcare professionals as well as the perceived level of collaboration between various professionals involved in their health care. With regards to the 'environment' within which the MUR takes place, the conceptual framework includes regard for the suitability of the environment, level of patient comfort, general views and perceived level of confidentiality. In terms of the topic 'time' a balance should be struck between the MUR conversation being unrushed, but with due consideration of other patients' needs for the pharmacist's attention and other tasks the pharmacist needs to attend to.

4.3.4.2 Process

The 'recruitment' process should include sufficient explanation of the MUR service's aims to manage the patient's expectations at the outset and to enable the patient to make an informed decision as to whether or not to take part. Language used during the recruitment process should not be coercive but should allow patients to access the MUR service based on their understanding of the benefits the service could hold for them.

In terms of the actual consultation process, or the 'conversation' between the patient and the pharmacist, the main aspect to focus on would be communication and specifically the potential for concordance in this two-way discussion. Here the concepts would include the provision of information, in other words the pharmacist as advisor, educator and medicines expert and the gathering of information, for example the pharmacist as listener. The pharmacist's role as motivator and supporter would also be included. It is envisaged that mannerisms would form part of this process, potentially with the pharmacist as carer, friend or professional, the patient as equal, the pharmacist's level of interest in the whole person and the

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perceived amount of time they are willing to spend with the patient. Additional concepts here include the level of patient involvement and the level of agreement reached between the patient and the pharmacist with the pharmacist as diplomat and the patient as decision-maker.

4.3.4.3 Outcome

In terms of outcome, there are two principal factors, 'immediate patient outcome' and general satisfaction with the MUR, otherwise referred to as 'satisfaction on reflection'. The emotional impact of the MUR consultation on the patient would include reference to the reassurance given by the pharmacist, allaying the patient's fears and anxieties, building a relationship of trust, empowering the patient and giving them confidence in terms of their role in their own health care. In addition, patients' improved knowledge regarding their medicines would contribute to the MUR service being perceived as being worthwhile. A patient's level of satisfaction on reflection could affect the steps patients take as a result of the MUR consultation and thus the potential outcome or impact of the MUR. Two concepts are included here and they relate to the patient implementing recommendations or making changes as a result of the MUR service and the patient recommending the service to others. This general satisfaction with the service would also be based on whether the patient's expectations, set at the recruitment stage, were met.

This conceptual framework may be used to inform item development for a bespoke patient satisfaction questionnaire that includes domains unique to the community pharmacy MUR service.
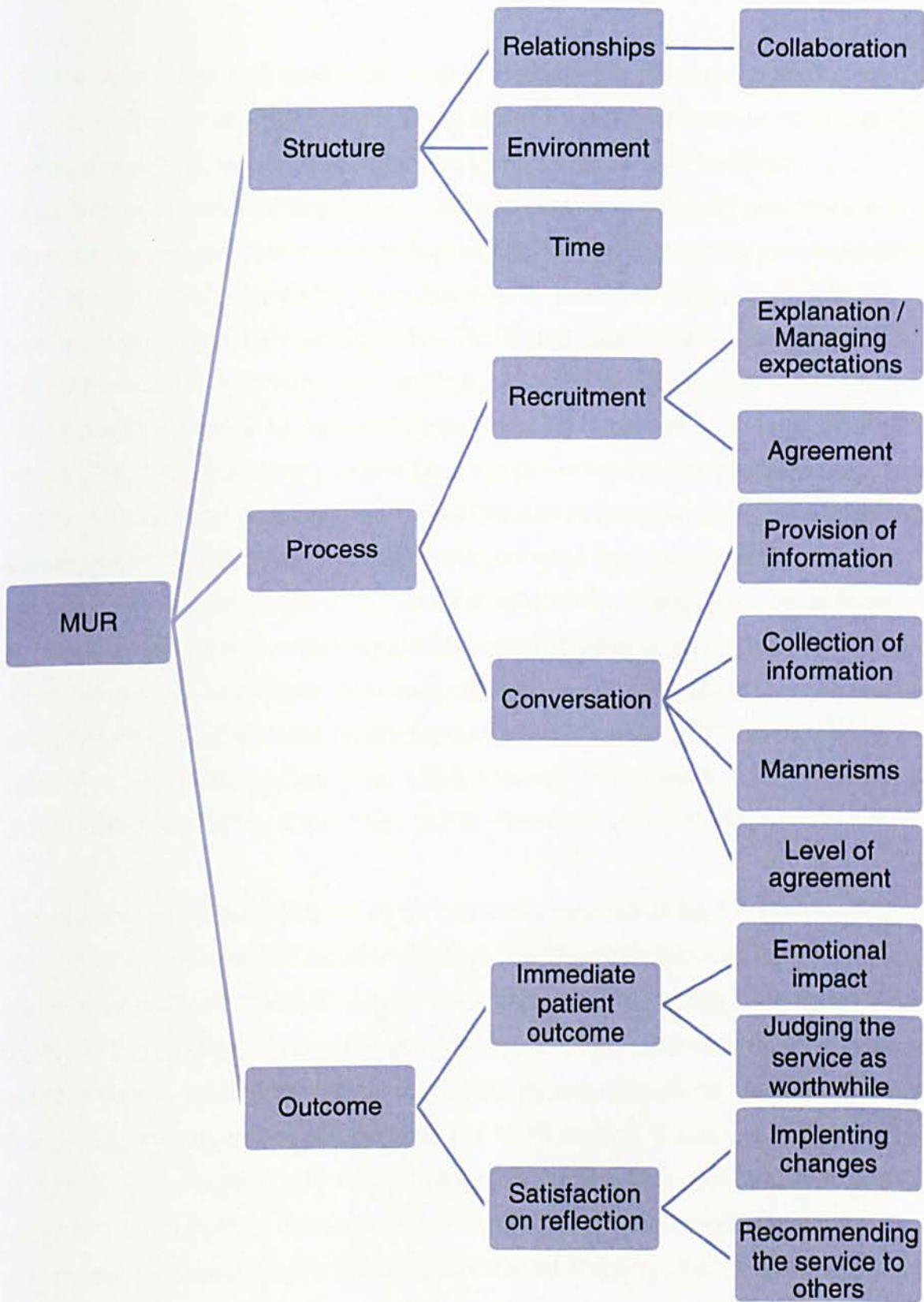
Figure 4.4 A conceptual framework for measuring patient satisfaction with the MUR service

4.4 Discussion

Patient satisfaction studies can be used to evaluate the quality of care (Johnson *et al.*, 1998; Crow *et al.*, 2002) and indicate which aspects of a service need changing to improve patient response (Locker and Dunt, 1978). PharmacyVoice, an organisation established to provide a unified voice for community pharmacy e.g. on strategic issues and government policy, legislation and regulation, recently published their 'blueprint' for community pharmacy which advocated measuring quality outcomes for patients (PharmacyVoice, 2011) and supported the development of a quality framework for pharmacies which is expected to include PROMs. This coupled with the focus on outcomes-based research mentioned in Lord Darzi's report (DH, 2008b) and the present Coalition Government's confirmation of a continued focus on improving healthcare "outcomes and the quality standards that deliver them" (DH, 2010a), the relationship between satisfaction and outcome (Johnson *et al.*, 1998; Crow *et al.*, 2002) should not be overlooked. In addition, evidence suggests that satisfied patients are more likely to value and maintain relationships with healthcare providers, continue using healthcare services, adhere to treatment and have better health outcomes (Ware *et al.*, 1977; Locker and Dunt, 1978; Pascoe, 1983; Bartlett *et al.*, 1984; Aharony and Strasser, 1993; Schommer and Kucukarslan, 1997; Crow *et al.*, 2002; Panvelkar *et al.*, 2009).

Considering patient satisfaction as an outcome measure of the MUR service is important because patient satisfaction could be an important indicator of the viability and sustainability of the MUR service and serve as an important indicator of the quality of the service. It could therefore be argued that outcomes-based research with the MUR service should start with a reference to patient satisfaction. But prior to investigating patient satisfaction with the MUR service, it was necessary to build a picture of what the service entailed through conducting MUR consultations and observing consultations between other pharmacists and patients. These observations allowed the identification of different stages of the MUR consultation.

4.4.1 The MUR consultation stages

Various studies on stages of the patient-doctor consultation have been published (Draper, 2010; Mehay, 2012), including the Calgary-Cambridge method, used by a number of medical schools in the UK, which includes five consultation stages (Kurtz, *et al.*, 2003). Although other research has investigated MUR consultations in practice (Latif, *et al.*, 2011), no research on identifying the stages of the MUR patient-pharmacist consultation has apparently been published yet. Observations of MUR consultations and self-conducted MURs allowed the identification of the stages of the MUR patient-pharmacist consultation process for the first time. Comparison of these seven stages with available GP consultation models revealed that none of the doctor-patient consultation models corresponded directly with the MUR consultation.

Although there was emphasis in both models of establishing rapport and building a relationship with the patient, the difference in a patient's reason for accessing the consultation may provide some explanation for the differences in consultation stages and the overall focus of the consultation. In the GP consultation the patient is likely to initiate the consultation based on a variety of triggers (Zola, 1973), briefly discussed in sections 2.1.1 and 2.4.2.2. In contrast, the majority of patient-pharmacist consultations as part of the MUR service were a direct result of the patient being invited to take part in the consultation, although some issues with the recruitment process and setting of expectations have been highlighted. In addition, the GP consultation aims to provide the patient with a course of action or treatment to restore health while the ultimate outcome of the MUR consultation is improved patient knowledge and use of medicines, although this may in turn impact on patient health. To achieve this aim, pharmacists will need to elicit what is important to the patient and involve them in the MUR discussion, rather than being process driven and focusing on completing the MUR form.

4.4.2 Measuring patient satisfaction with the MUR service

Two MUR-specific patient satisfaction questionnaires were available at the time of this research, namely the RPSGB MUR patient survey (RPSGB, 2009c) and the

MUR patient satisfaction survey (NPA and PCPA, 2010), while an additional three questionnaires were considered to include items that could be related to components of the MUR service (Larson *et al.*, 2002; Tinelli *et al.*, 2007; Stewart *et al.* 2008). Ware *et al.* (1997, p.5) observed that satisfaction questionnaires had to "reliably and validly measure patient satisfaction" while Locker and Dunt (1978) argued a tool to measure patient satisfaction with a service had to employ the same criteria that consumers would use to evaluate the service. But analysis of the available patient satisfaction questionnaire items and subsequent comparison with results of the IPA of patient interview data showed that the existing questionnaires did not capture all aspects of the MUR service that could potentially influence patients' satisfaction with the service. Existing patient satisfaction questionnaires therefore proved inadequate in measuring patient satisfaction with the MUR service. Subsequent analysis of patient and pharmacist interview statements led to the identification of aspects of the service that could reasonably be included in a bespoke MUR patient satisfaction questionnaire, although it should be noted that the numbers of patients and pharmacists interviewed were small. Further research is therefore warranted to confirm, or further elaborate on, these aspects.

It was possible to categorise domains resulting from the IPA according to a structure-process-outcome framework (Donabedian, 1966), an approach consistent with Cleary and McNeil's (1988) categorisation of determinants of patient satisfaction. A notable difference between the current work and that of Cleary and McNeil is that they also included additional independent patient factors such as sociodemographic characteristics and physical and psychological health status. Each of the aspects of the MUR service discussed were included in the conceptual framework in line with Locker and Dunt's recommendations that a true study of patient evaluation of quality of care had to identify and employ criteria for standards used by the patients themselves and be based on patients' actual experiences (Locker and Dunt, 1978). However, it could be argued that only including the views of patients who had experienced the MUR service is a limitation to this study. That is because the views of patients who had turned down the invitation to the MUR service could be valuable in determining whether aspects of the recruitment process could be improved.

There is a paucity of research in relation to the measuring of patient satisfaction with cognitive community pharmacy services. In addition, a lack of consistent methodologies used to measure satisfaction due to the development of *ad hoc* instruments to measure patient satisfaction with individual services in a given setting has been reported (Panvelkar *et al.*, 2009). This has resulted in difficulties with collating information, drawing conclusions and applying these to future studies. This research set out to develop a conceptual framework to inform item development for a patient questionnaire to measure satisfaction with the MUR service. Although based on small numbers of patients and pharmacists, the resulting framework addresses all four conceptualisations of satisfaction put forward by Schommer and Kucukarslan (1997) (see section 4.1.1.1) and could also be utilised to develop a generic patient satisfaction questionnaire that could be applied to all cognitive community pharmacy services involving any private patient-pharmacist consultation. Little *et al.* (2001a) developed a questionnaire based on patients' preferences for patient-centred consultations in primary care which may also prove helpful in generating items for the patient satisfaction questionnaire.

4.4.3 Study limitations

The patient participants in this study have all experienced the MUR service and were generally positive towards pharmacists. Patients who turned down the invitation to the MUR service were not recruited and their views were therefore not explored.

The study was limited to one county in South East England, limiting the generalisability of the findings. Additional limitations relate to the small numbers of patients and pharmacists that were interviewed.

The effect of the presence of the observer on patient and pharmacist behaviour within the MUR consultations is unknown.

CHAPTER 5 : SUMMARY AND CONCLUSION

This chapter summarises the key findings of this thesis and discusses the possible implications of this research on current and future practice before concluding with suggestions for future research.

5.1 Summary of key findings

The MUR service was introduced to give pharmacists a greater role in supporting people with long-term medical conditions and those taking multiple medicines with the view to improve these patients' knowledge about and adherence to their medication regimens. This was the first service of its kind as pharmacists became involved in, and were remunerated for, providing formal consultations to patients to focus on their medicines use. While the aims of the service were generally accepted as 'a good idea' by pharmacists, other stakeholders and policy-makers, the implementation of the service was not straightforward.

The initial uptake of the MUR service was low and various reasons for this had been investigated and described in the literature. Chapter 2 of this thesis contributed to this body of evidence by arguing that even the name chosen for the service may have affected patient recruitment. The MUR was supposed to signify a concordance-centred patient-pharmacist consultation, but one of the main findings from Chapter 2 was that, in reality, the phrase "medicines use review" may have been associated with pharmacists' actions which would not generally correlate with a patient-centred approach. In light of the reported difficulties in recruiting patients for the MUR service initially, the implicit meaning of the signifier "medicines use review", i.e. a pharmacist carrying out a formal assessment, critical evaluation or judgemental one-sided analysis of one's medicines use, could be considered a barrier to accessing the service.

It was further argued that the marketing of the MUR service through bespoke PILs that were produced to promote the service could have affected patient recruitment to the service. Chapter 2 highlighted a number of potential problems relating to the

marketing of the MUR service in light of a social marketing approach and in the context of patient-centredness (Table 5.1).

Table 5.1 Summary of the way in which the MUR service was represented in PILs and its potential impact

Representation of the MUR service in MUR PILs	Potential impact of the way the MUR service was represented in PILs
None of the leaflets explicitly described the MUR service as new and presupposed that patients would willingly become involved in new activities associated with the service such as making appointments with pharmacists, preparing for the review, filling in medicine charts and negotiating and agreeing action plans. However, no impending evidence-based or patient-orientated benefits of accessing the service were described.	For patients the requirement to engage in a new set of activities associated with the MUR service, potentially without receiving any noticeable benefit for doing so, might act as a barrier to accessing the service.
The leaflets promoted the MUR service to patients with problems relating to their medicine-taking.	The assumption that patients would be able to identify or recognise problems or other issues with their medicine-taking and that they would access the MUR service as a result, portrayed the MUR as a reactive service focussing on patients with medicine-related problems. In contrast, the MUR should be a proactive service whereby patients and pharmacists are given an opportunity to discuss the patient's medicines and medicine-taking behaviour. The MUR consultation would then provide pharmacists with an opportunity to listen to patients' views and concerns, explore their use of and improve their knowledge about their medicines, address any resulting or potential problems and pre-empt side effects or interactions.
The MUR consultation was described with interchangeable use of formal and informal terminology.	The inconsistent messages could leave the patient unsure as to the cooperative nature of the MUR consultation and their intended role in the patient-pharmacist interaction.
There was a disparity between the intended one-to-one consultation in a private consultation area and the patient-pharmacist interaction taking place in the public areas of the pharmacy as illustrated in the leaflets.	The illustrations in the leaflets did not emphasise the difference between traditional patient-pharmacist interactions across the medicines counter and the private discussion that would take place during the MUR consultation. These images were not helpful in promoting patient empowerment and patient-centred care.

The pharmacist was described as being in charge of educating the patient while the patient was responsible for understanding their medicines and taking them more appropriately.	There was a tension between patient empowerment achieved through a patient-centred consultation and patient education that hides a biomedical agenda focussing on compliance with the leaflets depicting the service as focussing more on 'improving knowledge and use of medicines' than 'improving concordance'.

As such, recommendations were made to improve these information leaflets through the use of suitable language and imagery to convey patient empowerment and to communicate the intended inclusivity of patients in the MUR process. A new signifier for the service, namely "medicines check-up" was also suggested.

Given that the initial uptake of the MUR service was much lower than expected, Chapter 2 highlighted a number of topics that could be associated with difficulties in recruiting patients for the service. But even though relatively low numbers of patients were recruited, anecdotal reports suggested that pharmacists favoured quick and 'easy' MURs with patients on one-item prescriptions. As a result, concerns were raised in relation to the types of patients recruited for the MUR service. On the subject of patient recruitment Chapter 3 therefore set out to investigate the types of patients recruited to the service in practice. The main findings of the retrospective cross-sectional audit carried out as a result refuted the above mentioned anecdotal claims as patients in the audit were prescribed an average of five items each with over 70% of patients receiving prescriptions for blood pressure and/or cholesterol-lowering medication which are associated with low adherence. In terms of patient selection the audit also showed that even before national target groups for MURs were defined, pharmacists seemingly favoured recruiting these types of patients for the service. Overall more than two thirds of the MUR consultations conducted during the audit period were with patients who were prescribed medicines included in the national target groups. In addition, 93.3% of pharmacies delivered more than 50% of their MURs during the audit period to patients belonging to one or more of these target groups although the prerequisite was only introduced after the audit had been carried out.

Other concerns about the MUR service related to the quality of MURs that were being provided by community pharmacists. Chapter 3 therefore investigated

whether the MUR forms completed as part of the service, which were the only record of the services delivered, contained sufficient information to enable an assessment of the quality of these services. In this chapter it was argued that the MUR forms were not a complete record of the MUR consultation and that the true dynamics of the patient-pharmacist consultation could not be sufficiently captured to enable the use of the MUR forms as a single source for MUR quality assessment. Based on the available literature peer-review audits of MURs may be introduced in the future and concerns relating to this type of assessment have been highlighted by others. But Chapter 3 further argued that the ultimate measure of the quality of the MUR service should be whether or not it achieves its intended outcome, i.e. improves patients' knowledge and use of medicines, which cannot be assessed by an examination of completed MUR records alone, especially since the forms were not designed for this purpose.

Chapter 3 also suggested that the template used for recording the MUR process itself could be improved. Analysis of statements of pharmacists' advice given during the MUR consultation showed that pharmacists recorded an average of 1.5 recommendations per patient on the MUR forms. However, less than half of the action plans contained recommendations directly relating to the RPSGB community pharmacy audit criteria, which was topical at the time, suggesting that the results of the national audit did not fully represent pharmacists' role in helping patients manage and improve their medicine-taking. Therefore, additional categories that could be incorporated in the MUR paperwork were put forward in an attempt to capture pharmacists' role in improving patients' "knowledge and use" of their medicines.

In terms of patient recruitment for the MUR service, Chapter 3 discussed the development of a tool to enable pharmacists to prioritise patients that could potentially benefit from the MUR service. The work was carried out in light of the fact that pharmacies only received remuneration for a maximum of 400 MURs per year and was based on the premise that more complex medication regimens were generally associated with lower rates of adherence to therapy. Hence patients with more complex medication regimens should be targeted for the MUR service. The MRCI, a complexity index that involves a manual process of calculating a medication regimen's complexity score, was applied to the regimens found in the cross-sectional

audit to potentially enable patient prioritisation for the MUR service. However, determining a regimen's complexity score was found to be complex in itself and therefore alternative methods of calculating and predicting complexity scores were considered in this chapter. The correlation between the various complexity scores and between each complexity score and the number of items in each regimen were statistically examined and are summarised in Table 5.2.

Table 5.2 Various complexity scores and their correlation

Complexity score	Method of calculating the complexity score	Correlation with number of items in the regimen	Correlation with actual MRCI score
Actual MRCI score	Manual application of the MRCI tool, including extended dosage form category weightings, to each medication regimen	$R = 0.845$ $R^2 = 0.715$ $F = 1156.035$ $p < 0.001$	-
Alternative complexity score	Simple addition of individual complexity scores for each item in the regimen	$R = 0.917$ $R^2 = 0.840$ $F = 2427.525$ $p < 0.001$	$R = 0.971$ $R^2 = 0.944$ $F = 7711.104$ $p < 0.001$
Predicted complexity score	Simple addition of average complexity scores for each item in the regimen based on the BNF category to which each item belonged	$R = 0.939$ $R^2 = 0.882$ $F = 3462.116$ $p < 0.001$	$R = 0.936$ $R^2 = 0.876$ $F = 3261.248$ $p < 0.001$

The strong positive correlation between the alternative complexity score and the actual MRCI score indicated that patients' medication regimen complexity could be determined by applying a simpler methodology involving the addition of the individual complexity scores for each item in the regimen rather than the laborious process required when applying the MRCI. The calculation of an average complexity score for each item based on its BNF subcategory allowed the calculation of a predicted complexity score. The list of average complexity scores could be referred to as a first draft of a new index, MURCI, that would allow the identification of patients with more complex medication regimens, hence patients where adherence to their regimens could potentially be problematic and who could benefit from an MUR consultation.

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While Chapters 2 and 3 mainly focussed on patient recruitment and selection and the possibility of using audits to determine the quality of the MUR services delivered, Chapter 4 set out to examine actual MUR consultations in practice through observation. These observations led to the development of an MUR patient pathway and the identification of the stages of the MUR consultation. Based on the analysis of these observations it was argued that pharmacists needed to focus more on determining patients' expectations of the MUR service during the consultation rather than being process-driven.

In terms of service quality, Chapter 4 also focused on measuring patient satisfaction as a more immediate outcome of the MUR service. This was especially pertinent given that the MUR forms did not contain sufficient information to assess patient outcomes from the MUR service, as argued in Chapter 3. Patient satisfaction was deemed relevant because links between patients' satisfaction and the quality of care have long been established in the literature. In addition, patient satisfaction has also been shown to impact on patients' adherence to their medication regimens. Through thematic analysis of questionnaire items, and comparison of these to the MUR consultation stages, it was concluded that none of the patient satisfaction questionnaires available at the time the research was carried out were suitable for capturing the essence of the MUR service.

Patient and pharmacist interviews were subsequently conducted to determine which aspects they considered to be relevant in the context of patient satisfaction with the MUR service. Through IPA, themes that correlated with Donabedian's structure-process-outcome framework were identified. For each of these components, the domains identified were organised into a conceptual framework specifically for measuring patients' satisfaction with the MUR service. The findings are summarised in Table 5.3.

Table 5.3 Various levels of the MUR conceptual framework based on a structure-process-outcome framework

Levels of the MUR conceptual framework		
Level one: **Component of structure-process-outcome framework**	**Level two:** **Conceptual framework domains**	**Level three:** **Conceptual framework concepts**
Structure	Relationships	Building a relationship based on trust
		Healthcare providers working in collaboration
	Environment	Private consultation rooms with professional appearance
	Time	Pharmacist able to prioritise other activities so that MUR consultation feels relaxed
Process	Recruitment	Clearly explaining the purpose of the MUR service and any potential benefits that may result from accessing the service
		Managing the patient's expectations to enable them to make an informed decision regarding their participation in the MUR service
	Conversation	Skilled, focussed and friendly pharmacist eliciting information from the patient and then providing tailored information based on the patient's need for the information and the patient's existing knowledge (acquired via another healthcare professional and/or PILs and/or the internet)
		Pharmacist taking on the role(s) of advisor, educator, medicines expert, listener, motivator, carer, friend, professional and/or diplomat
		Patient receiving tailored verbal and written information in a clear, structured and understandable format allowing them to make decisions regarding their care
		Through negotiation and honest conversation the patient and pharmacist reaches a level of agreement concerning the patient's actions following the MUR consultation

Outcome	Immediate patient outcome	Through the MUR service the pharmacist has an emotional impact on the patient by putting their mind at ease, allaying their fears or improving their level of confidence
		Judging the service as worthwhile due to the resultant increase in the patient's knowledge about, and potentially their use of, their medicines
	Satisfaction on reflection	Patient accepts the agreed recommendation(s) and subsequently implements changes relating to their lifestyle and/or medicine taking and/or health in general
		The patient recommends the service to others

This conceptual framework can be used in order to develop a bespoke MUR patient satisfaction questionnaire to measure patient satisfaction with the MUR service. This could become an important indicator of the viability and sustainability of the MUR service, especially in relation to remaining questions around the quality of the service. Considering the lack of validated patient satisfaction questionnaires with cognitive community pharmacy services, this conceptual framework could further be adapted and validated to measure patient satisfaction with these types of services.

5.2 Implications on current and future practice

Based on the research findings discussed in Chapter 2, the research group suggested that "medicines check-up" may be a more appropriate signifier for the MUR service and a number of other community pharmacy chains as well as the NPA have started to refer to the MUR service as a medicines check-up. Posters made available by the PSNC to market the service also refer to the medicines check-up (PSNC, 2014). Furthermore, results from the discourse analysis of MUR PILs could inform the development of new MUR marketing material as well as PILs for other community pharmacy services.

The retrospective audit described in Chapter 3 highlighted a number of problems with the paperwork associated with the MUR service. As such, the likelihood of the

MUR form capturing the true dynamics of the consultation were brought into question and therefore its usefulness as a source of information for future peer review audits based on the quality of the service. In addition, the ultimate measure of quality in relation to the MUR service must focus on the extent to which it achieves its intended outcome. Thematic analysis of the MUR forms resulted in the recommendation of up to four additional categories that could be included in any future versions of a multidisciplinary MUR audit to extend the section "In which areas were recommendations made during the MUR?" (RPSGB, 2009a) to provide more comprehensive results on pharmacists' recommendations during the MUR consultation. Some of these recommendations have been implemented through the new MUR dataset requirements that were introduced in July 2012.

Work carried out as part of Chapter 3 led to the development of a tool which may facilitate the prioritisation of patients with complex medication regimens who may benefit from the MUR service. It should be noted however, that discrepancies in complexity scores due to variation in the completeness of doctors' prescribed directions, make both the actual MRCI score and the MURCI score, which was based on the MRCI weightings, unreliable as *single* predictors of medication regimen complexity. But the MURCI score could be refined by considering general dosage directions and additional labelling instructions listed in the BNF. MURCI could prove useful in order to facilitate patient selection for the MUR service in practice and it is anticipated that this tool could be implemented in practice with minimal training and disruption of a pharmacy's workflow. MURCI could be refined through further research but it provides a workable tool in its current format.

The qualitative study carried out as part of Chapter 4 showed that although items contained in existing patient satisfaction questionnaires could be adapted to measure satisfaction with the MUR service, none of these questionnaires included all aspects of the MUR service that were identified by patients during face-to-face interviews. The in-depth interviews allowed the identification and better understanding of factors that may influence patient satisfaction with the MUR service. As a result of the interviews, a conceptual framework of patient satisfaction with the MUR service that could inform item-development of an MUR patient satisfaction questionnaire was developed. This framework may in turn assist

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community pharmacists in improving the quality (Crow *et al.*, 2002) of the MUR services they deliver.

This research also identified some concerns surrounding the MUR recruitment process, including the lack of explanation of the service's aims and the setting of patients' expectations at the point of recruitment. These issues will have to be addressed to enable patients to make an informed decision as to whether or not they want to access the MUR service. The patient's expectations of the service could influence their level of satisfaction making this a prudent aspect to consider.

5.3 Suggestions for future research

In terms of marketing the MUR service it should be noted that PILs focussing on community pharmacy services can be used to market these services to patients in line with the NHS Brand Guidelines for Pharmacy (NHS, 2008b). However, these leaflets should also be user-tested (Dickinson *et al.*, 2001) with due consideration given to patients' interpretations, believes and concerns. In addition, these leaflets could be based on current recommendations for social marketing. Patients' understanding of the terminology used to describe community pharmacy services, such as the MUR and the New Medicines Service could also be explored.

With regards to MUR peer review audits, further research is necessary to establish robust criteria for such audits. These should include consideration of the aim of the MUR service and focus on pharmacists tailoring recommendations and advice provided during the MUR consultation to improve patients' knowledge and use of medicines. Further research is also warranted to determine whether the new MUR dataset requirements could be improved so as to allow an investigation of the quality of the services delivered.

The new MURCI could be applied to a sample of patient medication regimens and further extended, to include all possible dosage form categories and BNF subcategories, refined and validated to provide pharmacists with a full list of average medicine complexity scores to enable identification of patients where adherence

could be a problem. The MURCI could subsequently be used to aid patient selection for the MUR service, not only by pharmacists, but also by other healthcare professionals who may refer patients to the pharmacy. It may be possible to develop a solution to enable MURCI to provide electronic complexity scores for patients based on their computer-held PMRs or medical history.

In terms of patient satisfaction, a bespoke MUR patient satisfaction questionnaire to measure patient satisfaction with the MUR service could be developed based on the conceptual framework presented. However, any developed patient satisfaction questionnaire should be refined by exploring the views of patients who did not choose to access the MUR service.

It could in fact be argued that this thesis provides concepts and ideas that could be considered in the development of a randomised controlled trial (RCT) to measure MUR outcomes. Important aspects to consider with regards to the development of recruitment material for the RCT have been discussed in Chapter 2 while a simple tool to facilitate patient selection was put forward in Chapter 3. The conceptual framework for measuring patient satisfaction proposed in Chapter 4 could in turn be used to identify factors that hold meaning to patients and that could affect components of the intervention.

These results could feed into any new study on MUR effectiveness that is using the Medical Research Council's (MRC) *Framework for the development and evaluation of randomised controlled trials (RCTs) for complex interventions to improve health* (MRC, 2000). This MRC document provides a framework for the quantitative evaluation of health services that could provide a basis for evaluating the MUR service. This framework suggests a number of sequential phases of investigation to inform the design of a definitive RCT for the quantitative evaluation of an intervention. As discussed above, the information contained in this thesis is relevant to the initial theory-based phase which aims to explore the relevant theory to ensure the best choice of intervention and hypothesis. This in turn may form the basis for a modelling phase and exploratory trial before development of an RCT, as advocated by the MRC, to evaluate the MUR service.

5.4 Summary

This thesis presents a novel approach to investigating the value of the MUR service which hitherto has not been fully addressed in the published literature. The social construction of the MUR as a paternalistic, pharmacist-driven educational review could have misrepresented its true value and hindered the uptake of the service. Where the service was being delivered, the prioritisation of patients became a contested issue and this thesis has argued that a way of addressing this issue is to use a complexity index, such as the newly developed MURCI, to potentially deliver more 'valuable' MURs. In addition, a true measure of the value of a service to patients is their satisfaction with it and therefore this thesis put forward a framework that encapsulated the concepts relevant to patient satisfaction with the MUR service. This thesis has thus focussed on the value of the MUR service – representing its true value to patients, delivering potentially more 'valuable' MURs by prioritising patients and capturing the value of the service to its recipients.

Results from this thesis have already formed part of contract negotiations between a national community pharmacy chain and the PSNC. Input has also been provided to an international nutritional company that resulted in the development of an MUR support pack for pharmacists focussing on nutritional needs. Furthermore, proposals for joint working with the Company Chemists' Association, the PSNC and the London Forum of LPCs to facilitate the participation of all community pharmacists in London in a large study into the MUR service that could influence negotiation and further development of this and other community pharmacy services have been discussed with the relevant stakeholders.

It is anticipated that this thesis could be used as a basis for further research to evaluate the value (and outcomes) of the MUR service using quantitative research methods. The assumption here is that the benefit/value (or otherwise) of the MUR service can be 'proven' through empirical research using the theoretical frameworks and tools developed here.

PUBLICATIONS

Van den Berg, M. and Donyai, P. (2014) 'A conceptual framework of patient satisfaction with pharmacy adherence services', *International Journal of Clinical Pharmacy*, 36(1), pp.182-191.

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CONFERENCE PRESENTATIONS

"What is the new medicines use review 'patient survey' attempting to capture in the context of existing patient satisfaction with pharmacy questionnaires and a new conceptual framework?". **Melandi van den Berg** and Parastou Donyai. Health Services Research and Pharmacy Practice 2010, Manchester, April 2010.

"A retrospective audit of medicines use review forms". **Melandi van den Berg** and Parastou Donyai. Health Services Research and Pharmacy Practice 2010, Manchester, April 2010.

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APPENDICES

APPENDIX 1.1 : The MUR service specification

The service specification that was in place when the MUR service was introduced in April 2005 (From PSNC, 2004, pp.1-2).

NHS Community Pharmacy Contractual Framework
Advanced Service – Medicines Use Review & Prescription Intervention Service

April 2005

1. Service Description

1.1 This service includes medicines use reviews undertaken periodically, as well as those arising in response to the need to make a significant prescription intervention during the dispensing process. Medicines Use Review (MUR) is about helping patients use their medicines more effectively. Recommendations made to prescribers may also relate to the clinical or cost effectiveness of treatment.

2. Aims of Service

2.1 To improve patient knowledge, concordance and use of medicines by:
- establishing the patient's actual use, understanding and experience of taking their medicines;
- identifying, discussing and resolving poor or ineffective use of their medicines;
- identifying side effects and drug interactions that may affect patient compliance;
- improving the clinical and cost effectiveness of prescribed medicines and reducing medicine wastage.

3. Service Specification

3.1 The pharmacist will perform a MUR to help assess any problems patients have with their medicines and to help develop the patient's knowledge about their medicines.

3.2 The MUR will normally be carried out face to face with the patient in the community pharmacy. If a pharmacy wants to provide MURs in another location, e.g. patients' homes or day care centres, they must seek the prior approval of the PCO for this. Only when it is not practical for the patient to get to the pharmacy should a MUR be conducted by telephone.

3.3 For face to face consultations, the part of the pharmacy used for provision of MURs must meet the following requirements for consultation areas set nationally.
- The consultation area should be a designated area where both the patient and pharmacist can sit down together.
- The patient and pharmacist should be able to talk at normal speaking volumes without being overheard by other visitors to the pharmacy, or by pharmacy staff undertaking their normal duties.
- The consultation area should be clearly designated as an area for confidential consultations, distinct from the general public areas of the pharmacy.

3.4 A MUR can be conducted with patients on multiple medicines and those with long term conditions, every 12 months. These regular MURs, initiated by the pharmacist, must only be provided for patients who have been using the pharmacy for the dispensing of prescriptions for at least the previous three months. The next regular MUR can be conducted 12 months after the last MUR.

3.5 PCOs, working with their community pharmacies, may identify specific patient groups who would be appropriate for targeting, based on the needs of the local health economy. Pharmacists may accept referrals for MUR from other health care professionals and pharmacists can accept requests from patients for a MUR to be conducted as long as the criteria laid out in 3.4 are met.

3.6 The requirement for a MUR to be undertaken may be highlighted by the pharmacist identifying a significant problem during the dispensing of regular prescriptions. This 'Prescription Intervention' would be over and above the basic interventions, relating to safety, which a pharmacist would make as part of the Essential level dispensing service and would highlight the need for a more detailed examination of the patient's medication regimen. The requirements in 3.4 would not apply to this type of intervention. The initiating issue which led to the need for a prescription intervention will be discussed with the patient as part of the MUR and communicated to the patient's GP.

3.7 Recommendations will be made to the patient's GP using the nationally agreed reporting template.

3.8 Pharmacists providing the service will have passed an assessment based on the nationally agreed competencies for the service.

3.9 Interventions made as part of a MUR will include:
- advice on medicines usage (prescribed and OTC), aiming to develop compliance and concordance;
- effective use of 'when required' medication;
- ensuring appropriate use of different medicine dosage forms, e.g. inhaler type, soluble tablets;
- advice on tolerability and side effects;
- dealing with practical problems in ordering, obtaining, taking and using medicines;
- identification of items without adequate dosage instructions;
- identification of unwanted medicines (patient is no longer taking the medicines);
- identification of the need for a change of dosage form to facilitate effective usage;
- proposals on changing branded medicines to generics (exclusions will apply)
- proposals on changing generic to branded where appropriate to ensure consistent supply or when clinically appropriate;
- proposals for dose optimisation (higher strength substitution where multiple doses of lower strength products are prescribed, provided it does not interfere with the patient's clinical management);
- suggestions to improve clinical effectiveness. These interventions could be agreed at a local level between the PCO, pharmacist and prescribers. Example: highlighting patients who are on a treatment dose of a Proton Pump Inhibitor, rather than a maintenance dose.

3.10 A record of the MUR will be made on the patient's pharmacy record. A summary of the MUR and any recommendations will be sent to the patient's GP, using the nationally agreed recording template.

3.11 A copy of the MUR summary and recommendations will be given to the patient.

The most recent version of the MUR service specification (From PSNC and NHS Employers, 2013, pp.1-6).

Medicines Use Review & Prescription Intervention Service

August 2013

1. Service Description

The Medicines Use Review (MUR) aims to help patients use their medicines more effectively. Following the review, recommendations made to prescribers may also relate to the clinical or cost effectiveness of the treatment. The service includes Medicines Use Reviews undertaken periodically or when there is a need to make an adherence-focused intervention due to a problem that is identified while providing the dispensing service (a prescription intervention MUR).

2. Aims of the Service

To improve patient knowledge, adherence and use of their medicines by:
- establishing the patient's actual use, understanding and experience of taking their medicines
- identifying, discussing and resolving poor or ineffective use of their medicines
- identifying side effects and drug interactions that may affect adherence
- improving the clinical and cost effectiveness of prescribed medicines and reducing medicine wastage.

3. Service Specification

3.1 The pharmacist will perform an MUR to help assess any problems patients have with their medicines and to help develop the patient's knowledge of their medicines.

3.2 No more than 400 MURs may be provided at each community pharmacy in any year (1 April to 31 March). The only exception to this is during the first financial year that the pharmacy contractor starts to provide the service. In this instance, where the NHS England Area Team (AT) makes arrangements with a pharmacy contractor to provide the service on or after 1 October, the pharmacy contractor may only provide 200 MURs in that first financial year. In subsequent years the pharmacy contractor may provide up to 400 MURs.

3.3 At least 50 per cent of all MURs undertaken in a year (01 April – 31 March) must be on patients who fall within one of the national target groups. There are three national target groups, which are:
Patients taking high risk medicines
High risk medicines are those listed in the following British National Formulary (BNF) sub-sections:

BNF reference	BNF subsection descriptor
10.1.1	Non-steroidal anti-inflammatory drugs
2.8.2 and 2.8.1	Anticoagulants (including low molecular weight heparin)
2.9	Antiplatelets
2.2	Diuretics

Patients recently discharged from hospital

This group covers patients recently discharged from hospital who had changes made to their medicines while they were in hospital. Ideally, patients discharged from hospital will receive an MUR within four weeks of discharge but it is recognised that this may not always be practical so the MUR can take place up to eight weeks after discharge. A registered pharmacist should use their professional judgement to determine where a patient will benefit from such an MUR more than four weeks after discharge from hospital.

Patients prescribed certain respiratory medicines

This group covers patients taking a respiratory medicine included in the following British National Formulary (BNF) subsections:

BNF Reference	BNF subsection descriptor
3.1.1	Adrenoceptor agonists
3.1.2	Antimuscarinic bronchodilators
3.1.3	Theophylline
3.1.4	Compound bronchodilator preparations
3.2	Corticosteroids
3.3	Cromoglicate and related therapy, leukotriene receptor antagonists and phosphodiesterase type-4 inhibitors

3.4 The MUR will normally be carried out face to face with the patient in the community pharmacy. The part of the pharmacy used for the provision of MURs must meet the following requirements for consultation areas:

- the consultation area should be where both the patient and the pharmacist can sit down together

- the patient and pharmacist should be able to talk at normal speaking volumes without being overheard by any other person (including pharmacy staff)

- the consultation area should be clearly designated as an area for confidential consultations, distinct from the general public areas of the pharmacy.

When a pharmacy is closed to members of the public, MURs can be carried out in a public area of the pharmacy as long as the conversation between the pharmacist and the patient cannot be overheard by any other person (including pharmacy staff).

3.5 If a pharmacy wishes to provide MURs in another location they must seek the prior approval of the AT. Carrying out the MUR service away from the pharmacy could include in an area for confidential consultations at premises other than the pharmacy (e.g. at a GP practice); at premises to provide the service to a particular patient on a particular occasion (e.g. in a patient's home); or at premises to provide the service to a particular category of patient (e.g. at a care home).

3.6 Where a pharmacy wishes to provide an MUR via telephone to a particular patient on a particular occasion, they must seek the prior approval of the AT. Only when it is not practical for the patient to get to the pharmacy should an MUR be conducted by telephone. The MUR must be conducted in such a way as to ensure that the telephone conversation can only be overheard by someone whom the patient wants to hear the conversation, for example a carer.

3.7 All patients receiving the MUR service must sign a consent from which allows the pharmacy contractor to share information from the MUR with:
- the patient's GP, as necessary
- the AT as part of a clinical audit
- the AT, NHS Business Services Authority (NHSBSA) and the Secretary of State for Health to verify that the service has been delivered by the pharmacy as part of post-payment verification.

If patients do not consent to share their information then they will not be able to access the service.

3.8 MURs can only be conducted with patients on multiple medicines, except where the patient is taking one of the high-risk medicines (see paragraph 3.3). In this circumstance an MUR can be provided for a patient taking only one medicine.

3.9 Periodically-provided MURs must only be provided for patients who have been using the pharmacy for the provision of pharmaceutical services for at least the previous three months (the three-month rule). The next regular MUR can be conducted 12 months after the last MUR, unless in the reasonable opinion of the pharmacist the patient's circumstances have changed sufficiently to justify one or more further consultations during this period.

3.10 If the patient has recently been discharged from hospital and had changes made to their medicine while they were in hospital then this is treated as a change in the patient's circumstance and the patient can receive a post discharge MUR within 12 months of their last MUR. Ideally patients discharged from hospital will receive a post discharge MUR within four weeks of discharge but it is recognised that this might not always be practical so the MUR can take place up to eight weeks after discharge.

3.11 An MUR should not be undertaken on a patient who has, within the previous six months, received the New Medicine Service (NMS), unless in the reasonable opinion of the pharmacist, there are significant potential benefits to the patient which justify providing MUR services to them during this period. If the patient has recently been discharged from hospital and had changes made to their medicine while they were in hospital, then they are able to receive a post discharge MUR within six months of receiving the NMS.

3.12 Prescription intervention MURs are provided where there is a need to make an adherence-focused intervention due to a significant problem that is identified while providing the dispensing service. This prescription intervention MUR would be over and above the basic interventions, relating to safety, which a pharmacist would make as part of the Essential level dispensing service and would highlight the need for a more detailed examination of the patient's medication regimen. The three-month rule does not apply to this type of MUR.

3.13 In addition to the 50 per cent target detailed above, ATs, working with their community pharmacies, may identify specific patient groups who would be appropriate for targeting, based on the needs of the local health economy. MURs undertaken on local target groups will not count towards the 50 per cent target.

3.14 Pharmacists may accept referrals for MURs from other healthcare

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professionals, and pharmacists can accept requests from patients for an MUR to be conducted as long as the criteria laid out above are met.

3.15 The pharmacist is required to capture and retain an MUR dataset for every MUR undertaken. The data collected from each MUR must be kept for two years from the date the service is completed and may be stored electronically. The information to be collected during the MUR is outlined below:

a. patient demographic details
   i. name
   ii. address
   iii. gender
   iv. date of birth
   v. NHS number (where available)
   vi. ethnicity
b. registered GP practice
c. target group
   • Respiratory
   • High risk medicine
   • Post-discharge
   • Not in a target group
d. total number of medicines being used by patient:
   i. prescribed
   ii. over the counter and complementary therapies

e. healthy living advice provided at MUR (using the following options):
   i. diet and nutrition
   ii. smoking
   iii. physical activity
   iv. alcohol
   v. sexual health
   vi. weight management
   vii. other (free text information can be entered in the clinical record)
   viii. healthy living advice not applicable at this consultation

f. matters identified during the MUR (using the following options):
   i. patient not using a medicine as prescribed (non-adherence)
   ii. problem with pharmaceutical form of a medicine or use of a device
   iii. patient reports need for more information about a medicine or condition
   iv. patient reports side effects or other concern about a medicine
   v. other (free text information can be entered in the clinical record)

g. no matters identified during MUR
h. action taken/to be taken (using the following options):
   i. information/advice provided
   ii. yellow card report submitted to MHRA
   iii. referral – patient's issues raised with the medicine need to be considered by the GP practice or another primary health care provider
   iv. other (free text option in clinical record)

i. as a result of the MUR the pharmacist believes there will be an improvement in the patient's adherence to the medicines as a result of the following (more than one may apply):
   i. better understanding/reinforcement of why they are using the medicine/

what it is for

ii. better understanding/reinforcement of when/how to take the medicines

iii. better understanding/reinforcement of side effects and how to manage them

iv. better understanding/reinforcement of the condition being treated.

3.16 Pharmacists may wish to keep additional clinical records over and above the MUR dataset to support their ongoing care of the patient.

3.17 If an issue is identified during the MUR consultation that the pharmacist believes the patient's GP should be informed of, then the pharmacist must complete the MUR feedback form and send this to the patient's GP. Using the MUR feedback form does not preclude the pharmacist from contacting the patient's GP via telephone or face to face if an urgent issue is identified with the patient during the MUR. This can then be followed up in writing using the feedback form.

3.18 Pharmacists providing the service must have successfully completed an assessment undertaken by a higher education institution based on the nationally agreed MUR competencies. A copy of the 'MUR certificate' for each pharmacist providing the MUR service must be supplied to the AT.

3.19 Interventions made as part of an MUR may include:
- advice on medicines usage (prescribed and OTC), aiming to develop improved adherence
- effective use of 'when required' medication
- ensuring appropriate use of different medicine dosage forms, e.g. inhaler type, soluble tablets
- advice on tolerability and side effects
- dealing with practical problems in ordering, obtaining, taking and using medicines
- identification of items without adequate dosage instructions
- identification of unwanted medicines (where the patient is no longer taking the medicines)
- identification of the need for a change of dosage form to facilitate effective use
- proposals on changing branded medicines to generics (exclusions will apply)
- proposals on changing generic to branded where appropriate to ensure consistent supply or when clinically appropriate
- proposals for dose optimisation (higher strength substitution where multiple doses of lower strength products are prescribed, provided it does not interfere with the patient's clinical management)
- suggestions to improve clinical effectiveness.

These interventions could be agreed at a local level between the AT, pharmacist and prescribers. For example, highlighting patients who are on a treatment dose of a Proton Pump Inhibitor, rather than a maintenance dose.

3.20 In order to provide the AT with a summary of information on MURs conducted, pharmacies must complete the approved AT reporting template (a standard electronic spreadsheet) by collating the necessary data from pharmacy records for the MURs conducted in that quarter. This must be available to be requested after the end of 10 working days from the last day of that quarter

(last day of June, September, December and March). Completed templates must be provided to the AT electronically on request (which may be an ongoing request).

3.21 The data to be provided to the AT on request is set out below.

1. Total number of MURs delivered to patients in each group:
    - patients taking high-risk medicines
    - patients who have been recently discharged from hospital
    - patients prescribed a respiratory medicine within the relevant BNF subsection
    - patients who do not fall within one of the national target groups.
    For MURs that fall into more than one national target group, the registered pharmacist should make a determination as to which group the MUR should be allocated.

2. Total number of medicines being used by patients who received an MUR during the quarter, sub-divided between
    2.1. prescribed
    2.2. over the counter and complementary therapies

3. Number of patients where a medication issue was identified by the registered pharmacist and action was taken.

4. Number of patients referred back to the GP practice or another primary health care provider.

5. Number of patients where, as a result of the MUR, the registered pharmacist believes there will be an improvement in the patient's adherence to the medicines and type of benefit (more than one may apply):
    - better understanding of why they are using the medicine/what it is for
    - better understanding of when/how to take the medicines
    - better understanding of side effects and how to manage them
    - better understanding of the condition being treated.

6. Total number of patients given brief advice about a healthier lifestyle and type of advice:
    6.1. diet and nutrition
    6.2. smoking
    6.3. physical activity
    6.4. alcohol
    6.5. sexual health
    6.6. weight management
    6.7. other

APPENDIX 1.2 : The 4-page MUR form (version 1)

Patient Details			
Date of review:	Title:	Name:	NHS Patient Code:
			Pharmacy (PMR) ID:
Address:			DOB:
			Tel:
GP:		GP address:	

Recording of patient's informed consent (must be completed before the review can proceed)

Patient has received information on and consented to the review process. ☐
Patient has agreed that information may be shared with their GP   . ☐
Patient has agreed that information may be shared with others such as carers. ☐
Specify others by name:

Reason for review:		Pharmacist identified ☐ or
Annual Review (MUR)	☐	Referral from ☐
Prescription Intervention	☐	

What would the patient like to get out of the review? (including the need for information)

Basic health data	
Significant previous ADRs:	Known allergies/sensitivities:
Medical history as described by patient and from information recorded in PMR	Monitoring as described by patient and from information recorded in PMR

Name of Pharmacist conducting the review:	
Pharmacy name & address:	

Location of review:	**Outcome of Review:**	
Pharmacy ☐		
Other location ☐	Copy of care plan given to patient	☐
	Referral made to GP	☐
(state location used)	Pharmacist actions completed and recorded in care plan	☐
Telephone ☐		
(record reason why face to face was not possible)		

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Patient Name: **DOB:**

Prescribed medicine and dosage regimen	Dosage regimen as patient takes it (including OTC & complementary therapies)	Patient's knowledge of the medicine's use	Compliance			
			always	frequent	seldom	never
1.			☐	☐	☐	☐
2.			☐	☐	☐	☐
3.			☐	☐	☐	☐
4.			☐	☐	☐	☐
5.			☐	☐	☐	☐
6.			☐	☐	☐	☐
7.			☐	☐	☐	☐
8.			☐	☐	☐	☐
9.			☐	☐	☐	☐
10.			☐	☐	☐	☐
11.			☐	☐	☐	☐
12.			☐	☐	☐	☐
13.			☐	☐	☐	☐
14.			☐	☐	☐	☐

Explanatory notes:

Patient's knowledge of the medicine's use – record what the patient thinks the medicine is for and highlight where response would indicate need for further information.

Compliance – Use open, non-judgemental questions to establish how the medicine is being taken, and tick the box which best indicates the patient's level of compliance, i.e. always takes the medicines as prescribed through to never takes the medicine as prescribed. Leave blank for 'PRN' medicines.

Patient Name: DOB:

Is the formulation appropriate?		Is the medicine working?			Are side effects present?		General Comments
yes	no	yes	no	unknown	yes	no	
1. ☐	☐	☐	☐	☐	☐	☐	
2. ☐	☐	☐	☐	☐	☐	☐	
3. ☐	☐	☐	☐	☐	☐	☐	
4. ☐	☐	☐	☐	☐	☐	☐	
5. ☐	☐	☐	☐	☐	☐	☐	
6. ☐	☐	☐	☐	☐	☐	☐	
7. ☐	☐	☐	☐	☐	☐	☐	
8. ☐	☐	☐	☐	☐	☐	☐	
9. ☐	☐	☐	☐	☐	☐	☐	
10. ☐	☐	☐	☐	☐	☐	☐	
11. ☐	☐	☐	☐	☐	☐	☐	
12. ☐	☐	☐	☐	☐	☐	☐	
13. ☐	☐	☐	☐	☐	☐	☐	
14. ☐	☐	☐	☐	☐	☐	☐	

Explanatory notes:

Is the formulation appropriate? – use to identify problems with formulation, e.g. swallowing difficulties suggest a liquid product may be more suitable, include poor technique with inhaler devices here.

Is the medicine working? – if you have objective evidence such as BP or cholesterol level then you may indicate whether the medicine is effective or not. In many cases this may be a subjective response based on the patient's view of their treatment. In other cases it may be unknown such as antiplatelet therapy.

Are side effects present? – indicate patients reported response supplemented by a professional decision as to which drug a particular side effect may be attributable to.

General Comments – add any additional information here for example if you have ticked a positive response for side effects present it would be helpful to add detail (such as cough and skin rash) which may help you when you develop your action plan and when completing a follow up review with the same patient at a later date.

Medicines Use Review Action Plan

Date of review:

Patient's name:	Date of Birth:	GP's name:
	NHS Patient Code:	

Medicines Use Issue	Priority	Proposed Action	Action by	Outcome if known with dates

Pharmacist name (block capitals)	RPSGB registration number	Pharmacist signature	Telephone number of Pharmacist:

Next steps:

☐ **PATIENT:**
This is your copy; please retain it for your personal use. You may wish to show it to other health care professionals if you wish to share this information.

☐ Please make an appointment with your GP to discuss within

[   ] weeks.

☐ Take this form to your next scheduled GP appointment.
☐ Follow your actions agreed above.

☐ **GENERAL PRACTITIONER:**
This is your copy; please retain a copy in your patient's notes.

☐ For information only – no action required.

☐ Please review the actions proposed above.

APPENDIX 1.3 : The 2-page MUR form (version 2)

NHS Community Pharmacy Medicines Use Review & Prescription Intervention Service   Sheet   of   CONFIDENTIAL

Patient:	GP:
☐ For information only – no action required ☐ Follow your actions agreed below ☐ Please note the recommendations made to your GP This is your copy of the form. You may wish to show it to other health care professionals.	☐ For information only – no action required ☐ Please consider the recommendations proposed below A copy of the consultation record sheet can be obtained from the pharmacy if required. Clinical codes: Medicines Use Review done by community pharmacist: 4byte:8BMF Version 2:8BMF. Clinical Terms Version 3:XaKuo SNOMED CT:198391000000102

Patient details

				GP details	
Title:	First Name:	Surname:		GP Name:	
NHS Number:		Tel:	Date of Birth:	Practice Name:	
Address:				Address:	
Name of other people present			Consent for MUR obtained: Oral ☐ Written ☐	Date of review:	
Review type: Annual MUR ☐ Intervention MUR ☐	Review identified or requested by: Pharmacist ☐ Patient ☐ Other:			Location of review if not in pharmacy:	PCO permission granted for off site MUR: Yes ☐

Action plan

Issue	Recommendation	For consideration by:
		☐ Patient ☐ Pharmacist ☐ GP ☐ Other:
		☐ Patient ☐ Pharmacist ☐ GP ☐ Other:
		☐ Patient ☐ Pharmacist ☐ GP ☐ Other:
		☐ Patient ☐ Pharmacist ☐ GP ☐ Other:

Pharmacy details

Pharmacist Name:	Pharmacist registration no.:	Pharmacy Name:	Tel:	Email address:
Address:				

Overview page   This review is based on information available to the Pharmacist held on the pharmacy Patient Medication Record system and from information provided by the patient

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Title:	First name:		Surname:		NHS Number:		Date of birth:	Date of review:

	Current Medicines (including over the counter & complementary therapies)	Does the patient use the medicine as prescribed?	Does the patient know why they are using the medicine?		More info provided on use of medicine		Is the formulation appropriate?		Are side effects reported by the patient?		General comments relating to advice, side effects and other issues
1	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	
2	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	
3	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	
4	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	
5	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	
6	Name/Dosage form/Strength: Dose:	☐ Yes If no, specify:	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	

Consultation record   This review is based on information available to the Pharmacist held on the pharmacy Patient Medication Record system and from information provided by the patient

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APPENDIX 3.1: The MRCI (From George *et al.*, 2004, pp.1374-1375)

Patient ID: ....

Total no. of medicines (including prn/sos medications): ....

Instructions

1. MRCI applies only to prescribed medications. All entries are to be made only based on information on the label or drug chart) at the time of dispensing or discharge). No assumptions are to be made based on clinical judgement.

2. There are three sections in the scale. Complete each section before proceeding to the next. At the end, add the scores for the three sections to give the MRCI.

3. If the same medication (same brand and same dosage form) is present more than once in different strengths in a regimen (e.g. Marevan 5mg, 3mg and 1mg mdu), it is still considered as one medication.

4. In cases where the dosage is optional, choose the dosing instruction with the smallest dose/frequency, (e.g. Ventolin MDI 1-2 puffs, 2-3 times daily will get weightings for 'metered dose inhalers', 'variable dose' and 'twice daily'; but not for 'multiple units at one time')

5. In certain cases the dosing frequency needs to be calculated (e.g. Ranitidine 1 mane and 1 nocte is 1 twice daily(

6. It is possible that with certain 'use as directed' instructions, the regimen will not get a score under dosing frequency (e.g. Prednisolone 5mg mdu)

7. If there is more than one dosing frequency direction, they should be scored for all the dosing frequency directions (e.g. Ventolin MDI 2 puffs bd and prn, will get scores for both 'metered dose inhalers', 'multiple units at one time', 'twice daily' as well as 'prn')

8. Instances where two or more medications are mutually exclusive, they need to be scored twice or more as prn with the recommended dosing frequency (e.g. Ventolin MDI or Ventolin nebuliser twice daily will get scores for both 'metered dose inhaler' and 'nebuliser' under dosage forms, but needs to be scored two times for 'twice daily prn')

9. In cases where there is no matching option, choose the closest option (e.g. six times daily could be considered as 'q4h')

DPI = dry powder inhaler; MDI = metered dose inhaler

A) Circle the weighting corresponding to each dosage form (ONCE ONLY) present in the regimen.

Dosage forms		Weighting
ORAL	Capsules/Tablets	1
	Gargles/Mouthwashes	2
	Gums/Lozenges	2
	Liquids	2
	Powders/Granules	2
	Sublingual sprays/tabs	2
TOPICAL	Creams/Gels/Ointments	2
	Dressings˙	3
	Paints/Solutions	2
	Pastes	3
	Patches	2
	Sprays	1
EAR, EYE & NOSE	Ear drops/creams/ointments	3
	Eye drops	3
	Eye gels/ointments	3
	Nasal drops/cream/ointment	3
	Nasal spray	2
INHALATION	Accuhaler	3
	Aerolizers	3
	Metered dose inhalers	4
	Nebuliser	5
	Oxygen/Concentrator	3
	Turbohalers	3
	Other DPIs	3
OTHERS	Dialysate	5
	Enemas	2
	Injections: Prefilled	3
	Ampoules/Vials	4
	Pessaries	3
	Patient controlled analgesia	2
	Suppositories	2
	Vaginal creams	2
Total for Section A		

B) For each medication in the regimen tick a box [√] corresponding to the dosing frequency. Then, add the no. of [√] in each category and multiply by the assigned weighting. In cases where there is no exact option, choose the best option.

Dosing Frequency	Medications													Total	Weighting	Weighting x No. of medications
Once daily															1	
Once daily pm															0.5	
Twice daily															2	
Twice daily pm															1	
Three times daily															3	
Three times daily pm															1.5	
Four times daily															4	
Four times daily pm															2	
q 12h															2.5	
q 12h pm															1.5	
q 8h															3.5	
q 8h pm															2	
q 6h															4.5	
q 6h pm															2.5	
q 4h															6.5	
q 4h pm															3.5	
q 2h															12.5	
q 2h pm															6.5	
pm/sos															0.5	
On alternate days or less frequently															2	
Oxygen pm															1	
Oxygen <15 hrs															2	
Oxygen >15 hrs															3	

Total for Section B

C) Tick a box [√] corresponding to the additional directions, if present in the regimen. Then, add the no. of [√] in each category and multiply by the assigned weighting.

Additional Directions	Medications									Total	Weighting	Weighting x No. of medications
Break or crush tablet											1	
Dissolve tablet/powder											1	
Multiple units at one time (e.g. 2 tabs, 2 puffs)											1	
Variable dose (e.g. 1-2 caps, 2-3 puffs)											1	
Take/use at specified time/s (e.g. mane, nocte, 8 AM)											1	
Relation to food (e.g. pc, ac, with food)											1	
Take with specific fluid											1	
Take/use as directed											2	
Tapering/increasing dose											2	
Alternating dose (e.g. one mane & two nocte, one/two on alternate days)											2	

Total for Section C

Medication Regimen Complexity = Total (A) + Total (B) + Total (C) =

APPENDIX 3.2: Pharmacists' invitation to participate in the retrospective audit

Boots

Study into Medicines Use Reviews

September 2008

Dear Pharmacist

I am writing to invite you to take part in an exciting and ambitious, but also very important study. Boots is the UK's leading pharmacy-led health and beauty retailer and we want to ensure people look and feel their best. We feel we can deliver a better service to our customers by developing and delivering new pharmacy services which will help them to lead a healthier lifestyle.

One of the fantastic services your team is currently delivering is Medicines Use Reviews (MURs) / Medicines Check-ups (MCUs). We have heard many great reports from customers about this service. However, since the launch of this community pharmacy service, various claims, for example in the Pharmaceutical Journal and recent White Paper, have also been made about the 'quality' of MURs. We believe these claims have been made in the absence of scientific evidence surrounding the MUR. As a result, we have teamed up with Kingston University to evaluate MURs delivered in some of our pharmacies with the aim to uncover the value of this service and provide evidence of your contribution to patient care. Your pharmacy has been selected to be part of this initial evaluation.

The study into MURs involves the collection of **anonymised** copies of completed MUR forms (both versions) from our pharmacies in Surrey. Every MUR form counts and we need your participation.

Please:

- Collate all MUR forms completed in your pharmacy from **1st June to 30th June 2008**, inclusive.
- **Anonymise** the forms by removing all information that identifies the patient, the GP and the pharmacist who conducted the MUR (for electronic copies delete this information before printing; for paper copies cover the information before photocopying the pages).
- Ensure all 4 pages of version 1 and both pages of version 2 are reproduced.
- Complete the **Return Sheet** (enclosed with this letter) – there is also an optional Comment Sheet where you can add your views or suggestions about the MUR service.
- Return your anonymised MUR forms and the Return Sheet plus the Comment Sheet, if applicable, by **31st October 2008**. Send all the paperwork to Melandi van den Berg, Boots Support Office, Pharmacy Services, Fern House, 53-55 High Street, Feltham, TW13 4HU.

This study will be carried out in accordance with the Kingston University Research Governance Framework. All information will be anonymised and treated in a secure and confidential manner. No information linking participants with expressed views or other person-specific data will be disclosed to anyone.

If you need more information about this study, please contact Melandi (see contact details below) or discuss it with your area manager. Thank you in advance for your participation.

Yours sincerely,

Tricia Kennerley
Healthcare Director, Boots UK

Research team:
Melandi van den Berg, Research Practitioner (Melandi.vandenberg@alliancepharmacy.co.uk; mobile: 0778 595 0725)
Dr Tracey Thornley, Senior Development Manager (Research and Development)
Dr Parastou Donyai and Prof Graham J Sewell (Kingston University)

Study into Medicines Use Reviews

Return Sheet

Please return this sheet together with your **anonymised** MUR forms to:

Melandi van den Berg
Boots Support Office
Pharmacy Services
Fern House
53-55 High Street
Feltham
TW13 4HU

Please reply by 31st October 2008

Enclosed are MUR forms from

.... Pharmacy.

I have anonymised the MUR forms by

- removing all patient-identifiable information (excluding patient's age)
- removing all GP-identifiable information
- removing all pharmacy-identifiable information

I am enclosing .... (insert number) completed MUR forms*.

Signed: ....

Date: ....

Pharmacy Stamp

* please ensure photocopies are legible

Study into Medicines Use Reviews

Comments Sheet

You are welcome to write down any comments you may have about the MUR/MCU service or to make any suggestions or recommendations. Your comments will remain anonymous and confidential.

You can enclose this information with the return sheet and anonymised MUR forms or you are welcome to return this sheet in a separate envelope.

Please return to:
  Melandi van den Berg
  Boots Support Office
  Pharmacy Services
  Fern House
  53-55 High Street
  Feltham
  TW13 4HU

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APPENDIX 3.3: Example of the calculation of the actual MRCI score, medicine complexity scores and alternative regimen complexity scores based on a patient's prescribed medication regimen

Patient's prescribed medication	Dosage form	Weighting Section A	Total Section A	Dose	Dosing frequency	Weighting Section B	Total Section B	Additional Instructions	Weighting Section C	Total Section C
Calc carb/ colecal 1.25g/ 10mcg	Capsules/Tablets	1	8	Take two daily	Once daily	1	11	Multiple units at one time	1	6
Carbamazepine 100mcg tabs	Capsules/Tablets	1		Take one or two at bedtime	Once daily	1		Variable dose Take/use at specified time/s	2	
Diltiazem 90mg m/r tabs	Capsules/Tablets	1		Take one twice a day	Twice daily	2		-	0	
Fluoxetine 20mg caps	Capsules/Tablets	1		Take one daily	Once daily	1		-	0	
Lansoprazole 15mg caps	Capsules/Tablets	1		Take one once daily	Once daily	1		-	0	
Pregabalin caps 150mg	Capsules/Tablets	1		Take one at night	Once daily	1		Take/use at specified time/s	1	
Risedronate 35mg tabs	Capsules/Tablets	1		Take one weekly	On alternate days or less frequently	2		-	0	
Salbutamol 100mcg CFC free inh	Metered dose inhalers	4		Use as directed	-	0		Take/use as directed	2	
Tiotropium inh pwd caps 18mcg	Aerolizers	3		Take one daily	Once daily	1		-	0	
Uniphyllin 200mg tabs	Capsules/Tablets	1		Take one daily	Once daily	1		-	0	

Medication regimen complexity, i.e. actual MRCI score (Total Section A + Total Section B + Total Section C): 8 + 11 + 6 = 25

Medicine complexity scores for each individual medicine (Weighting Section A + Weighting Section B + Weighting Section C):

Medication	Weighting Section A	Weighting Section B	Weighting Section C	Medicine complexity score
Calc carb/ colecal 1.25g/ 10mcg	1	1	1	3
Carbamazepine 100mcg tabs	1	1	2	4
Diltiazem 90mg m/r tabs	1	2	0	3
Fluoxetine 20mg caps	1	1	0	2
Lansoprazole 15mg caps	1	1	0	2
Pregabalin caps 150mg	1	1	1	3
Risedronate 35mg tabs	1	2	0	3
Salbutamol 100mcg CFC free inh	4	0	2	6
Tiotropium inh pwd caps 18mcg	3	1	0	4
Uniphyllin 200mg tabs	1	1	0	2

Alternative complexity score (sum of individual medicine complexity scores for each medicine in the regimen): 3 + 4 + 3 + 2 + 2 + 3 + 3 + 6 + 4 + 2 = 32

APPENDIX 4.1 The PSPC questionnaire (After Larson *et al.*, 2002, p.47)

	Excellent	Very good	Good	Fair	Poor
1. The professional appearance of the pharmacy [a]					
2. The availability of the pharmacist to answer your questions [a]					
3. The pharmacist's professional relationship with you [a]					
4. The pharmacist's ability to advise you about problems that you might have with your medications [a]					
5. The promptness of prescription drug service [a]					
6. The professionalism of the pharmacy staff [a]					
7. How well the pharmacist explains what your medications do [a]					
8. The pharmacist's interest in your health [b]					
9. How well the pharmacist helps you to manage your medications [b]					
10. The pharmacist's efforts to solve problems that you have with your medications [b]					
11. The responsibility that the pharmacist assumes for your drug therapy [b]					
12. How well the pharmacist instructs you about how to take your medications [a]					
13. Your pharmacy services overall [a]					
14. How well the pharmacist answers your questions [a]					
15. The pharmacist's efforts to help you improve your health or stay healthy [b]					
16. The courtesy and respect shown you by the pharmacy staff [a]					
17. The privacy of your conversations with the pharmacist [b]					
18. The pharmacist's efforts to assure that your medications do what they are supposed to [b]					
19. How well the pharmacist explains possible side effects [b]					
20. The amount of time the pharmacist offers to spend with you [b]					

[a] Dimension: Friendly explanation
[b] Dimension: Managing therapy

APPENDIX 4.2 The CPPQ (From PSNC, 2009)

This section is about why you visited the pharmacy today

Q1 Why did you visit this pharmacy today?

To collect a prescription for: Yourself ☐   Someone else ☐   Both ☐   **OR**

> For some other reason (please write in the reason for your visit):

If you did not collect a prescription, please go to Q3.

Q2 If you collected a prescription today, were you able to collect it straight away, did you have to wait in the pharmacy or did you come back later to collect it?

Straight away ☐   Waited in pharmacy ☐   Came back later ☐

Q3 How satisfied were you with the time it took to provide your prescription and/or any other NHS services you required?

Not at all satisfied ☐   Not very satisfied ☐   Fairly satisfied ☐   Very Satisfied ☐

---

*This section is about the pharmacy and the staff who
work there more generally, not just for today's visit*

Q4 Thinking about any previous visits as well as today's, how would you rate the pharmacy on the following factors? Please tick one box for each aspect of the pharmacy listed below, to show how good or poor you think it is:

ANSWERS:	Very poor	Fairly poor	Fairly good	Very good	Don't know
a) The cleanliness of the pharmacy	☐	☐	☐	☐	☐
b) The comfort and convenience of the waiting areas (e.g. seating or standing room)	☐	☐	☐	☐	☐
c) Having in stock the medicines/appliances you need	☐	☐	☐	☐	☐
d) Offering a clear and well organised layout	☐	☐	☐	☐	☐
e) How long you have to wait to be served	☐	☐	☐	☐	☐
f) Having somewhere available where you could speak without being overheard, if you wanted to	☐	☐	☐	☐	☐

Q5 Again, including any previous visits to this pharmacy, how would you rate the pharmacist and the other staff who work there? Please tick one box for each aspect of the service listed below, to show how good or poor you think it is:

ANSWERS:	Very poor	Fairly poor	Fairly good	Very good	Don't know
a) Being polite and taking the time to listen to what you want	☐	☐	☐	☐	☐
b) Answering any queries you may have	☐	☐	☐	☐	☐
c) The service you received from the pharmacist	☐	☐	☐	☐	☐
d) The service you received from the other pharmacy staff	☐	☐	☐	☐	☐
e) Providing an efficient service	☐	☐	☐	☐	☐
f) The staff overall	☐	☐	☐	☐	☐

Name of Pharmacy and address

Q6 Thinking about all the times you have used this pharmacy, how well do you think it provides each of the following services?

ANSWERS:	Not at all well	Not very well	Fairly well	Very well	Never used
a) Providing advice on a current health problem or a longer term health condition.......................	☐	☐	☐	☐	☐
b) Providing general advice on leading a more healthy lifestyle	☐	☐	☐	☐	☐
c) Disposing of medicines you no longer need	☐	☐	☐	☐	☐
d) Providing advice on health services or information available elsewhere	☐	☐	☐	☐	☐

Q7 Have you ever been given advice about any of the following by the pharmacist or pharmacy staff?

Stopping smoking............	☐ Yes	☐ No	
Healthy eating................	☐ Yes	☐ No	
Physical exercise............	☐ Yes	☐ No	

Q8 Which of the following best describes how you use this pharmacy?

This is the pharmacy that you choose to visit if possible............................. ☐
This is one of several pharmacies that you use when you need to................ ☐
This pharmacy was just convenient for you today .... ☐

Q9 Finally, taking everything into account - the staff, the shop and the service provided - how would you rate the pharmacy where you received this questionnaire?

Poor ☐   Fair ☐   Good ☐   Very Good ☐   Excellent ☐

Q10 If you have any comments about how the service from this pharmacy could be improved, please write them in here:

[Insert here, if required, additional questions relating to healthcare service provision]

These last few questions are just to help us categorise your answers

Q11 How old are you?

16-19 ☐   20-24 ☐   25-34 ☐   35-44 ☐   45-54 ☐   55-64 ☐   65+ ☐

Q12 Are you...   Male ☐   Female ☐

Q 13 Which of the following apply to you:

You have, or care for, children under 16 .... ☐
You are a carer for someone with a longstanding illness or infirmity... ☐
Neither .... ☐

Thank you for completing this questionnaire

APPENDIX 4.3 The MUR patient survey (From RPSGB, 2009c)

SECTION 1: Pharmacy demographics: to be completed by the pharmacy

Pharmacy ID Number (PPD or HSW number)

Which PCO are you part of?

Please state what type of pharmacy you are?
Independent (if yes, tick box)

Small multiple: 2 to19 pharmacies (if yes, tick box)

Large multiple: 20 pharmacies+ (if yes, state which multiple you are part of)

SECTION 2: Patient feedback: to be completed by the patient

You have just seen a Community Pharmacist to talk about the medicines that you take. This is called a Medicines Use Review or MUR. It is important that we ask patients about their experience of having a Medicines Use Review so that we can make sure we provide a good service and make it better where necessary. We would be grateful if you would spend a few minutes answering the questions below. You cannot be identified from the answers that you give and no personal information is collected. Please tick one box for each question that applies to you and put your questionnaire in the box available in the pharmacy or return it in the envelope provided. Thank you for your feedback.

(1) Before you saw the Pharmacist today, had you ever had a Medicines Use Review before?

Yes

No

Not sure

(2) Did you understand why you were having a Medicines Use Review?

Yes

No

Not sure

(3) Were you asked if you buy any medicines "over the counter" in the pharmacy or if you use any "complimentary" medicines, e.g. herbal medicines or vitamin supplements?

Yes

No

Not sure

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(4) Were you asked about medicines you have at home that you do not use or do not need anymore?

Yes

No

Not sure

(5a) Were recommendations made to you to change the way in which you use or take your medications?

Yes (please go to Q5b)

No (please go to Q6)

Not sure (please go to Q6)

(5b) If you answered "Yes" to Q5a regarding recommendations for changes, are you likely to make these changes?

Yes

No

Not sure

(6) Do you think your knowledge about your medicines and how to take and use your medicines has improved as a result of your Medicines Use Review?

Yes

No

Not sure

(7a) Were you given an opportunity to raise questions that you wanted to ask?

Yes (please go to Q7b)

No (please go to Q8a)

Not sure (please go to Q8a)

(7b) If you answered "Yes" to Q7a, did you feel that these were answered to your satisfaction?

Yes

No

Not really

(8a) Were you given a copy of the Medicines Use Review form?

Yes (please go to Q8b)

No (please go to Q9)

Not sure (please go to Q9)

(8b) If you answered "Yes" to Q8a, please consider the following statements and tick all that apply:

I can read the MUR form clearly

I can understand the MUR form

I feel that the MUR form will be helpful to me

(9) Did you feel that the area in which your Medicines Use Review took place was suitable for a confidential discussion?

Yes

No

Not sure

(10) Please indicate how useful you felt your Medicines Use Review was to you by ticking one of the boxes on the scale below:

1	2	3	4	5

<NOT USEFUL--VERY USEFUL>

(11) Please use the box below to tell us anything else that you would like to let us know about your experience of the Medicines Use Review:

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APPENDIX 4.4 The MUR patient satisfaction survey (From NPA and PCPA:, 2010, p.25)

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1 Why did you decide to use this service?
(You may cross more than one box)
- ☐ I was concerned about my condition
- ☐ I wanted advice from my pharmacist
- ☐ I wanted to know more about the medicines I was using
- ☐ I was confident that my pharmacist would give me good advice
- ☐ Other (please state)...

Please rate how strongly you AGREE or DISAGREE with each of them by marking an 'X' in the most appropriate box.

Please mark 'X' in ONE box for EACH statement   Level of agreement

		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
2	The importance of taking part in this service was made clear to me					
3	The pharmacist clearly explained how I could gain maximum benefits from my medication					
4	The advice given to me by the pharmacist was useful					
5	I feel that I understand more about my medication since using this service					
6	A follow-up visit to the pharmacy would be of benefit to me					
7	I am happy with the length of time that I spent in the pharmacy					
8	I would recommend this service to others					

9 What did you like most about the service?

_____

_____

_____

10 What did you like least about the service?

_____

_____

_____

11 Please write any other comments you have about the service:

_____

_____

_____

If you would like this form translated please inform your pharmacist. Thank you for taking time to complete this form. Please place the completed form in the box provided in your pharmacy.

APPENDIX 4.5 The pharmacists' supplementary prescribing questionnaire
(After Stewart *et al.*, 2008, p.895)

Attitudinal statements relating to consultation satisfaction

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am totally satisfied with my visit to this pharmacist prescriber					
This pharmacist prescriber told me everything about my treatment					
Some things about my consultation with the pharmacist prescriber could have been better					
This pharmacist prescriber examined me very thoroughly					
This pharmacist prescriber was interested in me as a person, not just my illness					
I understand my illness much better after seeing this pharmacist prescriber					
I felt this pharmacist really know what I was thinking					
I wish it had been possible to spend a little more time with the pharmacist prescriber					
I would find it very difficult to tell this pharmacist prescriber about more private things					

APPENDIX 4.6 The medications management service questionnaire (After Tinelli *et al.*, 2007, p.1966)

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
The CP seemed to take a genuine interest in me as a person.					
I felt that others could listen.					
The CP told me how to take my prescriptions.					
The CP told me what to do if I missed a dose.					
The CP told me about possible side effects of my prescriptions.					
The CP gave me information about my health as well as my prescription medications.					
The CP asked about any over-the-counter medications I may be taking.					
I was able to ask the CP all the questions I wanted to.					
Any questions I had were answered to my satisfaction.					
Any medication problem I was experiencing was sorted out.					
My concerns were taken seriously.					
I could understand the information I was given.					
Other pharmacy staff seemed to be knowledgeable about the treatment of heart problems.					
I had to wait too long for my prescription to be completed.					
The pharmacist made sure that I understood how to take my medications.					

CP = Community pharmacist

APPENDIX 4.7 The NHS Surrey Research Ethics Committee approval

NHS

National Research Ethics Service

Surrey Research Ethics Committee
Education Centre
Royal Surrey County Hospital
Egerton Road
GUILDFORD
Surrey
GU2 7XX

Telephone:
Facsimile:

02 June 2008

Mrs Melandi van den Berg
Research practitioner, PhD student
Alliance Pharmacy and Kingston University
Faculty of Science, School of Pharmacy and Chemistry
Kingston University, Penrhyn Road
Kingston-upon-Thames
KT1 2EE

Dear Mrs van den Berg

Full title of study:	**A qualitative evaluation of the Medicines Use Review (MUR) community pharmacy service**
REC reference number:	**08/H1109/60**

Thank you for your letter of 20 May 2008, responding to the Committee's request for further information on the above research and submitting revised documentation, subject to the conditions specified below.

The further information was considered at the meeting of the Sub-Committee of the REC held on 30 May 2008. A list of the members who were present at the meeting is attached.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The Committee has designated this study as exempt from site-specific assessment (SSA. There is no requirement for [other] Local Research Ethics Committees to be informed or for site-specific assessment to be carried out at each site.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

<u>Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.</u>

Management permission at NHS sites ("R&D approval") should be obtained from the relevant care organisation in accordance with NHS research governance arrangements.

This Research Ethics Committee is an advisory committee to South East Coast Strategic Health Authority
*The National Research Ethics Service (NRES) represents the NRES Directorate within
the National Patient Safety Agency and Research Ethics Committees in England*

Guidance on applying for NHS permission is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
Application	5.5	26 March 2008
Investigator CV		17 March 2008
Protocol	1	25 March 2008
Covering Letter		20 May 2008
Letter from Sponsor		18 March 2008
Compensation Arrangements		21 January 2008
Letter of invitation to participant		18 March 2008
Participant Information Sheet: Interviews	1	17 March 2008
Participant Information Sheet: Observations	1	17 March 2008
Participant Information Sheet: Pharmacist	1	18 March 2008
Participant Information Sheet: Observations	2	19 May 2008
Participant Information Sheet: Interviews	2	19 May 2008
Participant Consent Form: Interviews	1	17 March 2008
Participant Consent Form: Observations	1	17 March 2008
Participant Consent Form: Pharmacist	1	18 March 2008
Participant Consent Form: Observations	2	19 May 2008
Participant Consent Form: Interviews	2	19 May 2008
Response to Request for Further Information		20 May 2008
Voucher		
Pharmacy Notice	1	18 March 2008
Letter from Funder		17 March 2008
Supervisor's CV		22 January 2008

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Progress and safety reports

- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.
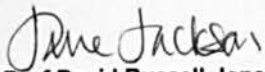
We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

08/H1109/60	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Jane Jackson

pp **Prof David Russell-Jones**
Chair

Email: ethics.committee@royalsurrey.nhs.uk

Enclosures: "After ethical review – guidance for researchers

Copies to: Dr D Mackintosh, Kingston University
                       Mr Janit Patel, Alliance Pharmacy

Surrey Research Ethics Committee

Attendance at Sub-Committee of the REC meeting on 30 May 2008

Committee Members:

Name	Profession	Present	Notes
Prof David Russell-Jones	Professor of Diabetes and Endocrinology	Yes	

Also in attendance:

Name	Position (or reason for attending)
Jane Jackson	Assistant Administrator

APPENDIX 4.8 The Kingston University Faculty of Science Research Ethics Committee application and approval

Ethics Approval

Cairns, Chris

Sent: 12 June 2008 09:26

To: Van Den Berg, Melandi; Donyai, Parastou

Cc: Keane, Jason R

Dear Melandi and Parastou,

Thanks you for passing me the form RE4 for your study 'A qualitative evaluation of the Medicines Use Review (MUR) community pharmacy service' along with copies of the application to and correspondence from the Surrey Research Ethics Committee.

As the study has been approved by an NRES Committee I am happy to take Chair's action to approve the study on behalf of the Faculty Research Ethics Committee.

I wish you well with your work.

Best wishes

Chris

Prof Chris Cairns
Head of Department of Pharmacy
University of Kingston
Room 226
Penryhn Road
Kingston upon Thames
KT1 1EE

APPENDIX 4.9 Participants' information, invitation and consent forms

[Example of letter of invitation/information/consent for pharmacists]

Alliance Pharmacy

KINGSTON
UNIVERSITY

St George's
University of London

School of Pharmacy and Chemistry

Invitation to participate

This information relates to the **Medicines Check-Up (Medicines Use Review)** service. Alliance Pharmacy has teamed up with Kingston University to evaluate a sample of Medicines Check-Ups (MCUs) delivered in a number of pharmacies in Surrey, which includes your store. If you decide to take part, you can contribute to either or both phases of this research as follows:

1) By allowing the research pharmacist to observe MCUs delivered in your pharmacy (patient consent will also be sought before observation of each MCU takes place)
2) By speaking to the research pharmacist about the MCU service during an interview

The research will be carried out in accordance to the NHS Research Governance Framework. This involves anonymising all information and treating all data in a secure and confidential manner. No information linking participants with expressed views or other person-specific data will be disclosed to anyone.

It is anticipated that results from this research will help improve similar community pharmacy services in future. If you agree to take part, and would like to see a summary of the final report, please let the research pharmacist know.

Are you willing to take part?

If you are prepared to take part in one or both phases of research, please let the research pharmacist know by completing the boxes on the next page, signing the statement of consent and faxing the completed form to the number provided. Please reply by xxx 2008. If you need more information about the research, please contact the research pharmacist (see contact details, below). Whatever your decision regarding the research, your position in the company will not be affected in any way.

We don't envisage that taking part in this study will have any harmful effects and the research pharmacist can be asked to leave a consultation or terminate an interview at any time. If you agree to participate, the research pharmacist will contact you to arrange a convenient day to carry out the observations and/or the interview. The interview should last between 30 and 45 minutes.

If you have any concerns regarding the conduct of the research, you can inform the research supervisors (see contact details, below).

Contact details

Research pharmacist
Melandi van den Berg
☎ Telephone: 0778 595 725
🖷 Fax: 020 8751 4078
✉ Email: m.vandenberg@kingston.ac.uk

Research supervisors
Dr P Donyai and Prof G Sewell
✉ Email: p.donyai@kingston.ac.uk
✉ Email: g.j.sewell@kingston.ac.uk

Alliance Pharmacy

FAX

Attention: Melandi van den Berg, Research Pharmacist
Fax number: 020 8751 4078

RE: MEDICINES CHECK-UP / MEDICINES USE REVIEW RESEARCH PROJECT

From: _____

Telephone number: _____   Fax number: _____

Statement by pharmacist participant		**Please initial**

I am willing to participate in the above mentioned research project. I am willing to take part in the following phases:

    1) Observation of the MCU consultation   ☐

    2) An interview with the research pharmacist   ☐

I consent to the audio-recording of the MCU consultation and/or interview with the understanding that it will be kept secure and confidential and that it will be destroyed when the study has been completed.   ☐

Name:_____   Signature: _____   Date: _____

Store number: _____

[Example of letter of invitation/information/consent for semi-structured interview]

Logo removed

KINGSTON UNIVERSITY St George's University of London

School of Pharmacy and Chemistry

Invitation to participate

This information relates to your recent **Medicines Check-Up (Medicines Use Review)**. Alliance Pharmacy has teamed up with Kingston University to evaluate the Medicines Check-Up service. This will involve a research pharmacist in talking to patients at this pharmacy about the service. All discussions will take place at an agreed time in the consultation room at this pharmacy and will last around 30-45 minutes.

The research will be carried out in accordance to the NHS Research Governance Framework. This involves anonymising all information and treating the data in a secure and confidential manner.

It is anticipated that results from this research will help improve similar community pharmacy services in future. If you agree to take part, and would later like to see a summary of the final report, please let the research pharmacist know.

Are you willing to take part?

Are you happy to help by speaking to a research pharmacist about the Medicines Check-Up service? If you are willing to take part, please complete the boxes below and sign the statement of consent. Alternatively, you can decline to take part in this research. Whatever your decision regarding this research project, your health or access to healthcare services will not be affected in any way. No information will be shared with your GP or pharmacist at any time without your consent.

We don't imagine that taking part in this study will have any harmful effects and you can end the conversation at any time.

If you decide to take part, we will give you £10 at the start of the interview as a gesture of thanks.

Melandi van den Berg (research pharmacist) – m.vandenberg@kingston.ac.uk
Dr P Donyai and Prof G Sewell (PhD supervisors) – p.donyai@kingston.ac.uk

Statement by participant

Please initial

I give my consent for the research pharmacist to speak to me about the Medicines Check-Up service at this pharmacy.

I also consent to the audio-recording of our discussion with the understanding that it will be kept secure and confidential and that it will be destroyed when the study has been completed.

Name: _____ Signature: _____ Date: _____

If you would like to receive a text message the day before the interview as a reminder, please provide your mobile telephone number _____ Your telephone number will not be used for any other purpose.
Name of person taking consent: _____ Signature: _____ Date: _____

Reminder Card

About the appointment

- The informal discussion about the Medicines Check-Up service will last about 30-45 minutes
- You do not need to bring anything with you
- If you are unable to come at the agreed time, please let the research pharmacist or the pharmacy team know

Date agreed ....   Time agreed ....

Research pharmacist: Melandi van den Berg, m.vandenberg@kingston.ac.uk   Pharmacy team tel: ....

[Example of letter of invitation/information/consent for non-clinical observation]

Logo removed

KINGSTON UNIVERSITY   St George's University of London

School of Pharmacy and Chemistry

Invitation to participate	Are you willing to take part?
This information relates to your forthcoming **Medicines Check-Up (Medicines Use Review)**. Alliance Pharmacy has teamed up with Kingston University to evaluate a sample of Medicines Check-Ups taking place in this pharmacy. This will involve the research pharmacist in sitting in on some of the consultations. The research will be carried out in accordance to the NHS Research Governance Framework. This involves anonymising all information and treating the data in a secure and confidential manner. It is anticipated that results from this research will help improve similar community pharmacy services in future. If you agree to take part, and would later like to see a summary of the final report, please let the research pharmacist know.	Are you happy to help by letting the research pharmacist sit in while you have your Medicines Check-Up? If you are willing to take part, please complete the boxes below and sign the statement of consent. Alternatively, you can decline to take part in this research and continue to have your Check-Up as planned. Whatever your decision regarding the research, your health or access to healthcare services will not be affected in any way. No information will be shared with your GP or pharmacist at any time without your consent. We don't imagine that taking part in this study will have any harmful effects and the research pharmacist can be asked to leave the consultation at any time. Melandi van den Berg (research pharmacist) – m.vandenberg@kingston.ac.uk Dr P Donyai and Prof G Sewell (PhD supervisors) – p.donyai@kingston.ac.uk

Statement by participant

I give my consent for the research pharmacist to sit in on my Medicines Check-Up consultation.

I also consent to the audio-recording of my consultation with the understanding that it will be kept secure and confidential and that it will be destroyed when the study has been completed.

Name: _____ Signature: _____ Date: _____

Name of person taking consent: _____ Signature: _____ Date: _____

Please initial

APPENDIX 4.10 Interview schedule – Patients

Introduction/Ice breaker
- Welcome
- Thank patient for participation
- Re-assure patient that interview will be confidential
- Confirm consent for audio-recording of interview
- Assure patient that transcript will not contain any patient/pharmacy/pharmacist/GP identifiers and that all information will be protected

Reason for interviews
- Potential future benefit to patients having MURs
- Focus will be on PATIENT'S EXPERIENCE of the MUR
- Happy to discuss other pharmacy and related matters, but want to focus on MUR

Do you have any questions?

Start
- Bring patient back to MUR

Issue	Questions	Follow-up
Recruitment	How did you first get to know about the MUR?	Where did you see/hear the information?
	Who recruited you for the MUR? How did they recruit you?	
	Was the MUR explained to you?	How?
	What were your expectations?	
The consultation and their experience during the MUR	When/where did your MUR take place?	Why/When/Where?
	What were your impressions of the consultation room?	Explain that a bit better
	Tell me a little bit about your MUR / Picture your MUR with the pharmacist	What do you mean?
	How did you feel? What do you see? What did you talk about?	What did you think about that? How did that make you feel?
	Were you able to ask questions during the MUR? What kind of questions did you ask?	Were you satisfied with the answers?
	What else did you say? Was there something you wanted to say but didn't?	Why did you not say that?
	What did the pharmacist say/recommend? Did you understand what they were saying?	Did you agree with it? How did they speak to you?
	Have you followed their recommendations?	Why / why not? Positives: Could you explain that a bit better? Negatives: What would you want to be different? Why?

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Usefulness of the MUR	What else happened during your MUR?	
	How much time did the pharmacist spend with you?	How did that make you feel?
	Is there anything that you found useful during the MUR?	Explain. Why do you say that?
	What did you learn about your medicines that you did not know?	
	To what extent were you satisfied with the MUR?	Explain
	Were you satisfied with the pharmacist?	Explain .
	Did the MUR meet your expectations?	Explain
	What do you think other people will say of the MUR?	Why?
Aim of MUR	What do you think the purpose of the MUR is? What do you think the purpose of the MUR should be?	
	How do you think the MUR could benefit patients?	Do you think all patients should have an MUR?
Impressions	What was your overall impression of the MUR?	Explain
	What was your impression of the pharmacist?	Explain
Recommendations	What does your ideal MUR look / feel like?	
	Would you recommend an MUR to someone else?	Why? Why not?

Conclusion
- Is there anything else you would like to add/any further comments?

Thank you

APPENDIX 4.11 Interview schedule – Pharmacists

- Welcome
- Thank pharmacist for participation
- Re-assure pharmacist that interview will be confidential
- Confirm consent for audio-recording of interview
- Assure pharmacist that transcript will not contain any patient/pharmacy/pharmacist/GP identifiers and that all information will be protected from unauthorised access

Reason for interviews
- Explain the reason for interviews – background on MUR research
- Potential future benefit to patients having MURs
- Focus will be on PHARMACIST'S EXPERIENCE and VIEWS of the MUR

Do you have any questions?

Opening: Tell me a little bit about the MURs that you have delivered recently

Issue	Questions	Follow-up
Recruitment – identifying the patients, inviting them for a discussion		
Patient satisfaction with the MUR will depend on all aspects of the service including recruitment.	How do you usually select patients for the MUR? How do you subsequently invite the patient to the MUR?	
If patients agree to the MUR because the pharmacist asked them they are less likely to have an expectation of the MUR and more likely to be satisfied just for being given the time for a one-to-one discussion.	What do you tell patients about the MUR when you invite them for the consultation? To what extent do you think they understand the purpose of the MUR at the time of recruitment?	
Pharmacists' motivation for delivering MURs		
What is the pharmacists' motivation for delivering MURs? If it is not patient-driven or patient-centred then achieving patient satisfaction will not be important to the pharmacist.	Why do you deliver MURs? What is the value of MURs in your opinion?	
What are the pharmacists' thoughts about the potential outcome of the MUR? I.e. would it be worth doing?	Tell me what you think of the following statement. "All patients **should** get something out of the MUR." What do you think of this statement: "All patients **can** get something out of the MUR."	What do you mean? Can you explain that a little better? Why / Why not?
Introduction to the domains of the conceptual framework for measuring patient satisfaction	What aspects of the MUR do you think will influence a patient's perception of the service?	
Environment - suitability, level of comfort, general views, and perceived level of confidentiality		
Structure – Process – Outcome The environment within which the MUR interaction takes place can influence patient satisfaction	To what extent do you think the level of comfort of the consultation area influences the MUR discussion or affect its outcome?	
The consultation room must portray a professional image of pharmacy and pharmacists to instil trust	What image of pharmacy do you think the consultation room gives to patients? What do you think the importance of this is?	Why / Why not?
Privacy is important to patients	How do you feel about having the MUR discussion in a private consultation room? How important do you think it is to talk to	Why?

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	patients on a one-to-one basis in the consultation room?	
Communication – building rapport, information gathering and information provision, listening		
The MUR leaflets portray pharmacists as educators. Advisor, educator, medicines expert... (information provision)	What do you see as your role in the MUR? To what extent would you say your focus is on educating patients during the MUR? (For example by telling them how to take their medicines or how to improve their medicine-taking?)	
Listening to the patient is an important aspect of the MUR, allying the patient's fears and anxieties, answering their questions, listening to their views, understanding their beliefs	To what extent do you focus on gathering information from the patient to really understand their beliefs regarding their medicines or their reasons for taking or not taking their medicines?	
The focus of the MUR is not to fill in the form, but to improve patients' knowledge and use of medicines. The focus should be on the patient The pharmacist needs to be aware of the patient's questions and address those	Do you try to gauge your patient's expectations at the start of the MUR? To what extent do you think it is important to explore the patient's needs during the MUR? Should the pharmacist seek to meet those needs during the MUR? How would a pharmacist know when s/he has met those needs? How would you ensure that the patient's questions about medicines are answered?	
Mannerisms – pharmacist as carer, friend or professional, the patient as equal, the pharmacist's level of interest in the whole person, the perceived amount of time they are willing to spend with the patient		
The relationship between patient and pharmacist	What role does a good relationship with patients play in the MUR? How important is it to establish rapport in the MUR? What can pharmacists do to achieve this? What role do you think trust plays in the MUR?	
Patient as equal – patient as decision-maker	To what extent should patients be involved in decisions about their medicines in the MUR? How do you involve patients in the MUR? / How do you seek to establish their views? To what extent do you believe that the patient should be in agreement with the proposed plan of action? How would / could you achieve that?	
Patients have indicated that they feel consultations with GPs are very short and do not allow sufficient time for them to ask their questions	Do you feel that the MUR is sometimes a bit rushed? How much time should the pharmacist be willing to spend with patients in the MUR?	
Outcomes of the MUR – satisfaction		
Pharmacist's perception of a 'worthwhile' MUR	What sort of outcomes do you think make the MUR worthwhile?	
Patient satisfaction	How do you think you can assess the level of patient satisfaction with the MUR at the end of the consultation? In general, to what extent do you think your patients were satisfied with the MUR service they received?	Why do you say that?

Pharmacist's view of the 'worthiness' of their own MURs or suggestions for improvement	What sort of things have you done or said in the MUR that made you think it was a good MUR? / Describe why you think the MURs that you have delivered have been worthwhile to your patients. What sort of things has made you think the MUR could have been better?	
Patients have mentioned a number of outcomes of the MUR, including increased confidence and reassurance	If you have only given your patient reassurance or increased their confidence with regards to their medicine-taking, would you say that it was a worthwhile MUR?	Why / why not?
MURs were implemented with the view of harnessing pharmacists' skills and as such improving their profile	What is your opinion of MURs raising the profile of the pharmacist?	
Ad-hoc outcomes and feedback from pharmacist's own MUR patients	Please share any feedback that you have had from your patients.	

APPENDIX 4.12 Extract of the framework matrix of patient interview data

Example - Patient 1: Male; 82 years; MUR was yesterday; had a bypass nearly 20 years ago, pacemaker, hiatus hernia, original grafts became blocked, now have stents (30-40); still receiving care for blocked arteries (40-54); angina. Patient described himself as a 'true' patient (30-58)

1. RELATIONSHIPS WITH HEALTHCARE PROVIDERS

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
1.1 Relationship process		**1.2 Type of relationship**		**1.3 Features of the relationship**	
I've met her two or three times (10) [*familiarity*] excellent, excellent (12); I always come to this one, mostly this one (210-212); I forget the chap, I forget his name now, he was sort of a local person (212-216); he was local, they knew him (220)	1.1.1 Forming a relationship [Building a relationship with the pharmacist is important to have an open and honest conversation with them; it is therefore important that the pharmacist is accessible, approachable and that they give the patient personal attention]	I mean, I can remember a time when you merely saluted them (120; 134). You called them sir (122); but you feel as though you shouldn't question them about what they've prescribed for you (284-286); years ago you didn't question (288); before you just sat there and they said take this and you took it (294); the doctor has the responsibility for the patient (341); well, those, times, as I say, things are changing, and as doctors, you just sat there and, eh, you tell them about your problems and he would, he would scribble away like that and give you a new [inaudible] and you didn't know what it was until the pharmacist hand it over (375-379)	1.2.1 Authoritarian / Paternalism (with GP) 1.2.4 Professional pharmacist?	The pharmacists are amongst the very few professionals that people actually trust (322-324); doctors they trust (326); the pharmacist they trust (328); they've still only got their word that that's going to do it (357) [have to trust health professional and take their word regarding the recommended treatment]	1.3.1 Trust
				I think pharmacists command a lot more respect now than they did a few years ago (150-152)	1.3.2 Respect
it's only in these latter years where we've been able to talk to doctors and question and ask why (290-293)	1.1.2 Change in relationship [Passive to active patient in terms of relationship with GPs]	People challenge, they're encouraged to challenge. Every day on the television someone's worrying about your civil liberties and all that, you know. So, to challenge doctors, we've still got some way to go there (381-387); the National Health is fantastic. I think there is a better relationship between all the, eh, pharmacies and surgeries we never used to have that at all (391-393)	1.2.1 Paternalism initially 1.2.3 Partnership	A lot of people would prefer to talk about their medication to the pharmacist (82); I think people feel more at ease with the pharmacist (116); it's when people warm to someone that they're prepared to ask things (224-228); already felt comfortable with the pharmacist (229); Sometimes you're not always keen on questioning the doctor you know, because they get a little bit upset, but if you talked to the pharmacist, because they are dealing with that medication all the time and they've got no axe to grind (278-282); that's why people are prepared to ask those sorts of questions (330)	1.3.3 Non-threatening

1. RELATIONSHIPS WITH HEALTHCARE PROVIDERS

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
1.1 Relationship process		**1.2 Type of relationship**		**1.3 Features of the relationship**	
		after a while they [doctors] know who you are and you haven't dropped down dead (72) so they're quite happy with the medication (74). They are pretty good down at my surgery (76). If I needed anything and I wanted to chat with anybody, I can do that (78)	1.2.2 Supervisory 1.2.4 Professional [Doctors are interested in treating you with medication that works - biomedical focus?]		
		I've met her two or three times (10) excellent, excellent (12); It's only in the latter years that doctors have become more friendly (124; 134), but pharmacists have always sort of got to know you (126). They know you live in the area (128). The doctor's they do remain slightly aloof (130), but pharmacists have always been there to talk to (136); it's only in the latter years that pharmacists took a backseat in that respect (146-148) and the doctors moved forward with the patient-and-doctor relationship (148); I always come to this one, mostly this one (210-212)	1.2.5 Familiarity / Friendship (with pharmacist)		
		It's only over the year, over the latter years, that doctors have sort of become sort of, eh, someone you can chat to (120);	1.2.3 Partnership		

2. PATIENT'S VIEW OF HEALTHCARE PROFESSIONALS

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
2.1 Professional people		**2.2 Role in healthcare**		**2.3 Being accessible / available**	
Nice to get someone who actually knows about them to reassure you (24); they're there should you have questions (100); he was very competent (222); the doctors are, I would say competent in that they know (284); they're [pharmacists] professional people who understand the medications (332); I still believe that they believe the pharmacists know more about medication than the doctors. I mean, that's certainly naturally a ridiculous statement but you do feel because they're, they are pharmacists and that's their profession and, eh, perhaps it would be better to talk to the pharmacist before they make that decision (351-354); they [patients] don't realise what professional training pharmacists have (371); they [patients] don't realise what training or what professional training the pharmacists have as oppose to the doctor (372-374)	2.1.1 Knowledgeable / Expert	the doctor has the responsibility for the patient (341)	2.2.1 Taking responsibility for the patient	It's nice to eh... Because the doctors don't have always got the time. They give you 10 minutes and there's people waiting (70); the thing in that you're the only one there... You know, you're not one of a lot of people, she sort of talks to you and she gives a bit of time to you (200-204) [mannerism; individualised approach; individual focus]	2.3.2 Time allowed for conversation [individualised approached; individual focus]
		They do blood pressure (98); patients not aware of pharmacists' prescribing skills (369)	2.2.2 Pharmacists providing new services		
		Nice to get someone who actually knows about them to reassure you (24)	2.2.5 Providing reassurance / Allaying fear	they're there should you have questions.(100); she seems very, very open (102); they [pharmacist] do converse with you a lot more now, I personally think so (166); that there is a pharmacist there to help you when you can't possibly get to the, to the doctors and that will be a great help (176); this particular one seems to have a personality which you sort of warm to (190-194); if there was one that was just as competent but perhaps haven't got the interpersonal skills then it might be difficult (196-198); this particular pharmacist you feel as though you want to ask something (198); they do that [see the pharmacist] rather than make an appointment which sometimes you have to wait perhaps a week for (316-320)	2.3.3 Approachable
		the doctors normally warn you, the pharmacist certainly has warned me, and I think they, they've got a part to play (337) [provision of lifestyle advice]	2.2.6 Providing non-medical care		
Pharmacists acted as doctors. We used to go to the pharmacists (140); you tell him you don't feel very well, you've got this and they used to recommend (142)	2.1.2 Autonomous				
it's coming back now where pharmacists are a larger part (138); not to show you're in competition with doctors (174); I think honestly, doctors should have more conversations with pharmacists rather than the patient because the patient is still ignorant of the properties of the medication and they've still only got their word that that's going to do it. No, I think they should say, well, perhaps you should have taken this, this one's on the market now and it has less side effects because I don't suppose the doctors get the time, do they? Do they get the time to study all the side effects? (357)	2.1.3 Part of healthcare team / joint working				

3. PATIENT'S VIEW OF HEALTH, HEALTH CARE AND MEDICINES

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
3.1 Taking responsibility for own health / health care		3.2 Identifying with the concept of being a 'patient'		3.3 Impact of medical treatment		3.4 Overall NHS services	
only one I did not have the answer to … I think it's something to do with… I had low, low blood pressure because the tablets, some of the tablets I was taking was reducing my blood pressure and I was also taking the blood pressure tablet and my blood pressure was getting too low and I think the doctor said to me or the consultant said, "Well, take that one at night" (246-260); because people question (310); I know people have spoken to the pharmacist about the tablets that they've been prescribed, you know, they may say to them, I'm getting a bit dizzy or – I mean, I've got friends who said they spoke with their pharmacists and they said that that should go away, that if it persists to go and see their doctor, yes (312-316)	3.1.1 Becoming an informed patient	because I had a bypass nearly 20 years ago, I also had a pacemaker. I have a hiatus hernia (30-34); the original grafts that I had, they became blocked, so I've had all the stents put in, but unfortunately, erm, they've all been blocked and now I've only got the one artery that is free enough to send blood to my arm (36-40); , I've been to xxx [hospital]. They've tried (42-44) and they are going to have one last try (52) otherwise they said go away and enjoy yourself (54) except for the pain I feel well you know, I'm 83 next birthday so I'm not doing too badly (62-64)	3.2.1 Experiencing an altered body 3.2.4 In need of medical treatment	It keeps my blood thin which I need because I've only got the one artery (60)	3.3.1 Improves patient's health	the National Health is fantastic (391)	3.4.1 Good-quality service
				except for the pain I feel well you know, I'm 83 next birthday so I'm not doing too badly (62-64)	3.3.2 Affects patient's life 3.3.3 Emotional response to treatment		
				the medication I had been taking for years and years doesn't cause me any trouble (60)	3.3.2 Affects patient's life		

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
3.1 Taking responsibility for own health / health care		3.2 Identifying with the concept of being a 'patient'		3.3 Impact of medical treatment		3.4 Overall NHS services	
I didn't have any doubts (276); You can't take that right away from them. If the patient refuses it, I can't see they should never be forced to take medication (347). Some patients can do it. I know some patients who would, eh, straight away, friends of mine who are very straight talkers. They would say, "No, I'm not taking that doctor. No, I'm not taking that." They wouldn't take it whether they fell out with the doctor or not (349). "Well, I don't really want to take that, doctor, do I have to take it?" But they should still be given the right to, eh, to refuse the medication (349)	3.1.2 Having a right to make decisions regarding treatment	as far as I know the medication is keeping me going (66) [patient has some responsibility to 'know'];	3.2.4 In need of medical treatment	because when you read the paperwork (16) with the medicines you feel afraid to take them sometimes (18), because, they do say there's many after-effects and also that they don't always inter-relate to (20) one another (22); if I read all of mine [PILs], I would be afraid to take them (298), some of the things they say on there are unbelievable (300); In fact, there's this one medication I took and it said don't take this if you suffer from heart problems, but the benefits outweigh the risks (304-305)	3.3.3 Emotional response to treatment		
it's [services] got to be sort of patient-driven really (100); we should take responsibility. We shouldn't think that we can carry on and the medication is going to do this, be the magic pill (337). If the doctor says, "Well, you're smoking, cut smoking and you're drinking too much", then they, eh, they should do that. Otherwise, it's not much worth taking the medication (341); you didn't know what it was (377) [doctor prescribed and you only found out what when the pharmacist handed it over]	3.1.3 Level of control						

4. PATIENT'S VIEWS OF THE MUR SERVICE

Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories	Master theme code	Subcategories
4.1 Accessing the MUR service		**4.2 Type of MUR interaction**		**4.3 Outcome of the MUR consultation***		**4.5 Marketing of the service**	
Pharmacist made patient aware of service (88-90); different times that I've been in, they've asked if I would like a service like this or like that, you know (92) and I just thought about it (94); partly agreed to MUR because he already felt quite comfortable with the pharmacist (229-230); If it was someone who was very clinical and giving you the impression that it was just, eh, eh filling in what's known before, data collection, I don't think I would have been all that keen (234-238)	4.1.3 Reasons for accessing the service	She only asked what period of the day did I take them (4) and did I have any after-effects (6), were they doing the job (8); Did ask me how long I've been taking them (28); the pharmacist said, "Are you, how often are you using this?...You mustn't, eh... have you informed your doctor that you're using this?" (158-160). Oh well, the pharmacist never used to worry about that [change]. They used to sell them to you and that's that. Then I explained as I like to keep one in the car (164); there was questions about the medications, when did I take it, why did I take it at that time (242-244); there was only one that I did not have an answer to. Why I took it in the evening, but with things like the statins you do take at night because that's... and the aspirin I've got from a doctor which I take at night and, but I didn't know (246); it [the questions on the MUR form] was all about medication. Did that affect you? They're all good questions, you know (274)	4.2.1 Question and answer session	Oh yes, yes, because when you read the paperwork (16) with the medicines you feel afraid to take them sometimes (18), because, they do say there's many after-effects and also that they don't always inter-relate to (20) one another (22); being reassured (69-70)	4.3.1 Being reassured	you should advertise as much as you can (170); I think you should let local people know (174); you should let people know that you've got this service available (180)	4.5.2 Requirement for efficient advertising
				would recommend chat with pharmacist (79-86)	4.3.5 Recommending service to others		
		attention was focussed on patient (113-114)	4.2.2 Focussed				

* There were no statements in this interview transcript relating to master theme "4.4 Sharing of information"

5. LOGISTICS

Master theme code	Subcategories	Master theme code	Subcategories
5.1 Environment		**5.2 Time issues**	
it's not always easy for the pharmacist with a shop full of people to ... even if it's only in the shop, people see it (182-184). If they wanted to talk to the pharmacist about something (186)	5.1.1 Confidential and private	plenty of opportunity for the discussion (105-107); If they've [pharmacist] got the time to spend, sometimes they haven't got the time to spend (168)	5.2.1 Dedicated pharmacist's time

APPENDIX 4.13 Example of a patient interview transcript coded based on the satisfaction categories identified in existing patient satisfaction questionnaires and IPA themes

Interview – Patient 1
Male >80 years
Interviewers: Supervisor and researcher
Time: 11:00 (24th September 2009)
Location: consultation room in the pharmacy
Patient's wife (with Alzheimer's) was present during the interview
Patient was recruited by pharmacist and had his MUR the day before the interview took place.

Line	Time	Speaker	Transcript	Questionnaire category	IPA master theme
1.	00:00:01	S1	xxx (Name of researcher) sort of explained the purpose a little bit and she said that we wanted to speak about Medicines Use Reviews or they're called medicines check-ups, and I understand that you had that service, you, you had that chat with the pharmacist?		
2.	00:00:15	P1	Yesterday, yes.		
3.	00:00:17	S1	Yesterday? Okay, all right. And can you tell me a little bit about it?		
4.	00:00:23	P1	Well, see, she only asked, erm, what period of the day did I take them.	Pharmacist gathering information or asking questions	4.2
5.	00:00:29	S1	Yes.		
6.	00:00:30	P1	And, eh, did I have any after-effects.	Pharmacist gathering information or asking questions	4.2
7.	00:00:33	S1	Okay.		
8.	00:00:34	P1	Uh-hmm, were they doing the job, and erm, that's all really.	Pharmacist gathering information or asking questions	4.2
9.	00:00:41	S1	Okay, and how did you sort of feel...?		
10.	00:00:45	P1	Oh yeah, it's fine. She, erm, I've met her two or three times and...		1.1 1.2
11.	00:00:50	S1	Yeah		

12.	00:00:51	P1	...excellent, excellent.		1.1 1.2
13.	00:00:52	S1	Okay, so you think it's something – it was something worthwhile...{cross-talking}		
14.	00:00:55	P1	Oh yes, yes	Patient outcomes	4.3
15.	00:00:56	S1	...for you?		
16.	00:00:57	P1	Yes, because eh, when you read the paperwork...	Patient outcomes	3.3 4.3
17.	00:01:00	S1	Yeah		
18.	00:01:01	P1	...with the medicines, erm, you feel afraid to take them sometimes, you know...	Patient outcomes	3.3 4.3
19.	00:01:07	S1	Right		
20.	00:01:07	P1	...because, eh, they do say there's many after-effects and also that they don't always inter-relate to...	Patient outcomes	3.3 4.3
21.	00:01:17	S1	Yeah		
22.	00:01:17	P1	...one another...	Patient outcomes	3.3 4.3
23.	00:01:18	S1	Okay		
24.	00:01:18	P1	...and, eh, it's nice to get someone who actually knows about them to reassure you.	Patient outcomes	2.1 2.2
25.	00:01:25	S1	Okay		
26.	00:01:25	P1	{inaudible}		
27.	00:01:27	S1	Okay, all right. And so did you discuss medicines that you'd already been on for a while or were these new medicines that you...?		
28.	00:01:38	P1	No, not, eh, not really. Did ask me how long I've been taking them...	Pharmacist gathering information or asking questions	4.2
29.	00:01:45	S1	Yeah		
30.	00:01:45	P1	...because I had a bypass nearly 20 years ago.		3.2
31.	00:01:48	S1	Right		

32.	00:01:49	P1	I also had a pacemaker.		3.2
33.	00:01:51	S1	Okay		
34.	00:01:52	P1	I also have a hiatus hernia...		3.2
35.	00:01:55	S1	Okay		
36.	00:01:56	P1	...and, eh, the original grafts that I had, they became blocked.		3.2
37.	00:02:03	S1	Right.		
38.	00:02:04	P1	So I've had all the stents...	.	3.2
39.	00:02:06	S1	Uh-hmm		
40.	00:02:07	P1	...put in, but unfortunately, erm, they've all been blocked and now I've only got the one artery that is free enough to send blood to my arm.		3.2
41.	00:02:23	S1	I see.		
42.	00:02:25	P1	Eh, I've been to xxx [hospital]...		3.2
43.	00:02:26	S1	Yeah		
44.	00:02:27	P1	...and they've tried to get the catheter in		3.2
45.	00:02:29	S1	Uh-hmm		
46.	00:02:29	P1	...to try and push the...		3.2
47.	00:02:33	S1	Yeah		
48.	00:02:34	P1	...cholesterol or whatever they call it...		3.2
49.	00:02:35	S1	Uh-hmm		
50.	00:02:36	P1	...and, eh, they just can't get the catheter in. They've tried through the arms, through the legs and, eh, as a last resort they're trying to get me an appointment with a person at xxx [hospital]...		3.2
51.	00:02:51	S1	Okay.		
52.	00:02:52	P1	...who's going to have a, a last try...		3.2
53.	00:02:56	S1	Okay		
54.	00:02:58	P1	...otherwise, they said, go away and enjoy yourself...,		3.2
55.	00:03:01	S1	Oh, okay.		

56.	00:03:02	P1	...so, eh, that's a, that's that part.		3.2
57.	00:03:05	S1	Okay		
58.	00:03:05	P1	Eh, but I get a lot of angina		3.2
59.	00:03:09	S1	Uh-mmm		
60.	00:03:10	P1	And, eh, the medication that I had been taking for years and years doesn't cause me any trouble. It keeps my blood thin which I need because I've only got the one artery and...		3.2
61.	00:03:22	S1	Yeah		
62.	00:03:22	P1	... I suffer a lot with angina. And at the moment, except for the pain I, I feel, well you know, I'm 83 next birthday so...		3.2
63.	00:03:34	S1	Right		
64.	00:03:35	P1	...I'm not doing too badly. I look after my wife. *[patting wife who is sitting next to him on the knee]*		3.2
65.	00:03:39	S1	Yeah, yeah. Okay.		
66.	00:03:41	P1	So, eh, yes, as far as I know, the medication is, eh, keeping me going.		3.2
67.	00:03:48	S1	All right. So, so if I can sort of just summarise, what you've said is that you've been pretty much on the same medicines but still it was good to have the chat with the pharmacist...		
68.	00:04:01	P1	Oh yes.		
69.	00:04:01	S1	...for that extra, extra reassurance?		4.3
70.	00:04:04	P1	Oh yes, yeah. It's nice to eh... because doctors don't have always got the time... they give you 10 minutes and there's people waiting.		2.3 4.3
71.	00:04:13	S1	Uh-mmm.		
72.	00:04:14	P1	After a while they know who you are, you know, and you haven't dropped down dead so they're quite happy with...		1.2
73.	00:04:23	S1	Sure		
74.	00:04:23	P1	...the medication, you know?		1.2
75.	00:04:24	S1	Okay		

76.	00:04:25	P1	They're pretty good down at my surgery.		1.2
77.	00:04:27	S1	Uh-mmm		
78.	00:04:28	P1	If I needed anything and I wanted to chat with anybody, I can do that.		1.2
79.	00:04:32	S1	So would you recommend the, the sort of chat that you had with the pharmacist... {cross-talking}		4.3
80.	00:04:36	P1	Yeah		4.3
81.	00:04:36	S1	...to others?		
82.	00:04:37	P1	Yeah. I think that's good. A lot, a lot of people would prefer to talk about their medication to the pharmacist.		1.3 4.3
83.	00:04:46	S1	Right		
84.	00:04:46	P1	Well, that's what I think.		4.3
85.	00:04:48	S1	Okay, so it's something that you would recommend.		4.3
86.	00:04:51	P1	Oh yeah		4.3
87.	00:04:52	S1	Can I ask you, how did you hear about the, the service? Was it something that was...?		
88.	00:04:57	P1	Through the pharmacist.		4.1
89.	00:04:59	S1	Right, so they...		
90.	00:05:00	P1	Yes		4.1
91.	00:05:00	S1	...they sort of approached you?		
92.	00:05:01	P1	Well, different times that I've been in, they've asked if I would like a service like this or like that, you know,		4.1
93.	00:05:09	S1	Okay		
94.	00:05:09	P1	...and I just thought about it.		4.1
95.	00:05:12	S1	All right, and then you, then you agreed. Okay, that's wonderful. So in terms of the, the things that you liked about it, obviously we've discussed the fact that you've had the opportunity to talk with the pharmacist, and, but do you think there are any other sort of advantages to, to having that service done? So in terms of, erm, maybe thinking about other people. Can you, can you see any of the advantages other than		

			just the reassurance that you'd get? So maybe did you have any questions to ask or...?		
96.	00:05:48	P1	I can't think of any at the moment.		
97.	00:05:50	S1	Okay		
98.	00:05:50	P1	They do, they, they do blood pressure...		2.2
99.	00:05:53	S1	Yeah		
100.	00:05:54	P1	Erm... and they're there should you have questions about the, a,... So it's got to be sort of patient-driven, really.		2.1 2.3 3.1
101.	00:06:06	S1	Right, right. Okay, so I understand. So do you feel that when you had the chat with the pharmacist that there was the opportunity for you to ask the questions? {cross-talking}		
102.	00:06:18	P1	Oh yes, yes. She seems very, very open, this particular pharmacist and the one that I had my blood pressure taken.	Pharmacist's traits	2.3
103.	00:06:28	S1	Yeah		
104.	00:06:29	P1	They were all okay. And they take blood as well.		
105.	00:06:33	S1	Right, right, okay. So, so in terms of the, the chat itself, so the MUR itself, you felt there was plenty of opportunity to...		5.2
106.	00:06:45	P1	Oh yes, yes. {cross-talking}		5.2
107.	00:06:45	S1	...for the discussion?		5.2
108.	00:06:47	P1	Oh yes, oh yes.		
109.	00:06:49	S1	All right.		
110.	00:06:49	P1	Oh yes.		
111.	00:06:50	S1	If you sort of cast your mind back to – I mean it was only yesterday, I think, but were you sort of sitting in this similar position? {cross-talking}		
112.	00:06:58	P1	Yes, yeah, lovely yes.		
113.	00:07:01	S1	All right, okay. And their, their attention was focused on you rather than...? {cross-talking}		4.2
114.	00:07:05	P1	Oh, very much so, very much so.		4.2

115.	00:07:08	S1	Okay. Oh, that's, that's really good to know because I know obviously, erm, sometimes it can be different talking to the doctor as you've mentioned.		
116.	00:07:20	P1	Oh yes, they eh... I think people feel more at ease with the pharmacist		1.3
117.	00:07:25	S1	Uh-mmm		
118.	00:07:27	P1	than they sometimes do with the doctor.		1.3
119.	00:07:29	S1	Okay, why do you think that is?		
120.	00:07:32	P1	I, well, I, I don't know. It's only over the year, over the latter years, that doctors have sort of become sort of, eh, someone you can chat to. I mean, I can remember a time when you merely saluted them.		1.2
121.	00:07:50	S1	Oh right...		
122.	00:07:50	P1	You called them sir, you know.		1.2
123.	00:07:51	S1	Okay.		
124.	00:07:52	P1	And it's only in the latter years that doctors have become more friendly.		1.2
125.	00:07:59	S1	Uh-mmm		
126.	00:08:00	P1	But pharmacists have always sort of got to know you.		1.2
127.	00:08:04	S1	Yeah.		
128.	00:08:05	P1	They know you live in the area.		1.2
129.	00:08:07	S1	Uh-mmm		
130.	00:08:07	P1	The doctors, they do remain slightly aloof.		1.2
131.	00:08:11	S1	Right, right. Oh, how interesting. I've never, I've never really thought about that aspect.		
132.	00:08:17	P1	Oh yes, I mean, eh, doctors, *policemen* and teachers...		
133.	00:08:21	S1	Uh-mmm		
134.	00:08:21	P1	...we used to, you know, salute, and eh, now doctors are more friendly...		1.2
135.	00:08:27	S1	Yeah		
136.	00:08:27	P1	...but the pharmacists have always been	Pharmacist's	1.2

			there...	traits	
137.	00:08:31	S1	Right, right.		
138.	00:08:32	P1	...to talk to, and it's coming back now where pharmacists are, are taking a, a, a larger part because years and years ago, when, to get, erm, treatment from doctors, you had to pay or belong to some sort of organisation.	Pharmacist's traits	2.1
139.	00:08:52	S1	Yeah, that's right.		
140.	00:08:54	P1	Pharmacists acted as doctors. We used to go to the pharmacists.		2.1
141.	00:08:58	S1	Right		
142.	00:08:58	P1	You tell him you, you don't feel very well, you've got this and they used to recommend.		2.1
143.	00:09:04	S1	Okay.		
144.	00:09:07	P1	It's only in the latter years...		
145.	00:09:10	S1	Yeah		
146.	00:09:12	P1	...that pharmacists took a backseat...		1.2
147.	00:09:14	S1	Uh-mmm		
148.	00:09:14	P1	...in that respect and the doctors moved forward with the patient-and-doctor relationship.		1.2
149.	00:09:21	S1	Okay, okay. But, but you feel that at the time point we're at, so now...?		
150.	00:09:26	P1	Oh now, now I think pharmacists eh, command a lot more respect now...	Pharmacist's traits	1.3
151.	00:09:33	S1	Okay		
152.	00:09:34	P1	...than they did a few years ago.		1.3
153.	00:09:35	S1	Okay, okay. So do things like the Medicines Use Review, the MUR, the, the check-up, erm, do they help, do you think?		
154.	00:09:43	P1	Oh, yes, I do, I think, because they – sometimes the doctor says, "When do you take this?" or like with my spray.		
155.	00:09:52	S1	Yeah		
156.	00:09:52	P1	I have to purchase two sprays at a time...		

157.	00:09:57	S1	Yeah		
158.	00:09:57	P1	...and the pharmacist said, "Are you, how often are you using this?...	Pharmacist gathering information or asking questions	4.2
159.	00:10:02	S1	Yeah		
160.	00:10:03	P1	...You mustn't, eh... have you informed your doctor that you're using this?"	Pharmacist gathering information or asking questions	4.2
161.	00:10:07	S1	Yeah.		
162.	00:10:08	P1	Oh well, the pharmacist never used to...		
163.	00:10:11	S1	I see		
164.	00:10:12	P1	...worry about that. They used to sell them to you and that's that. Then I explained as I like to keep one in the car.		4.2
165.	00:10:19	S1	Yeah		
166.	00:10:20	P1	And, eh, yes, they do, they do converse with you a lot more now, I personally think so.	Pharmacist's traits	2.3
167.	00:10:29	S1	Okay, all right.		
168.	00:10:30	P1	If they've got the time to spend, sometimes they haven't got the time to spend. {cross-talking}		5.2
169.	00:10:34	S1	Yeah, yeah. Okay. That's right, that's right. Absolutely. Okay, that, that's all very interesting, erm, I think from our perspective obviously, because we're really interested in seeing whether this service works because as you will see, this, this room here is obviously useful for other, other purposes but all...		
170.	00:10:58	P1	You should advertise as much as you can.		4.5
171.	00:11:02	S1	Right, the, the service itself...		
172.	00:11:03	P1	Oh, I think so, yes.		
173.	00:11:04	S1	Okay		
174.	00:11:05	P1	You know, not to show that you're in competition with doctors but I think you should let local people know...I		2.1 4.5

175.	00:11:13	S1	Right		
176.	00:11:13	P1	...that there is a pharmacist there to help you when you can't possibly get to the, to the doctors and that will be a great help.	Pharmacist's traits	2.3
177.	00:11:22	S1	Okay, well thank you, that, that's really helpful. As I say, I mean, they, they've built these rooms...		
178.	00:11:28	P1	Uh-mmm		
179.	00:11:29	S1	...actually for the purpose of the MUR. Some pharmacies have them anyway but you'll see this is quite a small pharmacy and this is quite a bit of space, and if you invested a lot of money in making it work...		
180.	00:11:44	P1	Yes, so if you've invested you should let people know that you've got this service available.		4.5
181.	00:11:50	S1	Right, right.		
182.	00:11:51	P1	And it's not always easy for the pharmacist with a shop full of people to...	Environment	5.1
183.	00:11:56	S1	Yeah, I see {cross-talking}		
184.	00:11:57	P1	...even if it's only in the shop, people see it.	Environment	5.1
185.	00:12:00	S1	Okay.		
186.	00:12:00	P1	If they wanted to talk to the pharmacist, about something.	Environment	5.1
187.	00:12:04	S1	Okay.		
188.	00:12:05	P1	Yeah		
189.	00:12:05	S1	Okay. Can I ask you, erm, now, now that you've sort of had the chat with the pharmacist, then maybe your views might have changed, you know, you might, erm you sort of got to have that one-to-one chat with the pharmacist in this room as we've discussed, do you think you might feel more comfortable approaching the pharmacist in the future about...?		
190.	00:12:32	P1	Oh, this particular one...	Pharmacist's traits	2.3
191.	00:12:34	S1	Yeah		
192.	00:12:35	P1	...seems to have a, a personality...	Pharmacist's	2.3

				traits	
193.	00:12:39	S1	Yeah		
194.	00:12:40	P1	...you know, which, eh, you'd sort of warm to...	Pharmacist's traits	2.3
195.	00:12:43	S1	Yeah		
196.	00:12:44	P1	Where, I mean, if there was one that was, eh, just as competent but perhaps haven't got the interpersonal skills...	Pharmacist's traits	2.3
197.	00:12:52	S1	Yes, yeah		
198.	00:12:53	P1	...then it might be difficult, but this particular pharmacist, eh, you feel as though you want to ask something.	Pharmacist's traits	2.3
199.	00:13:00	S1	I see, okay. Okay. Can you tell me a little bit about – what, so do you mean the, the smile or the eye contact?		
200.	00:13:09	P1	Well, it's the, eh, the thing in that you, you're the only one there...	Pharmacist's traits	2.3
201.	00:13:15	S1	Okay		
202.	00:13:	P1	...you know, you're not, eh, one of a lot of people, she sort of talks to you and she gives a bit of time...	Pharmacist's traits	2.3
203.	00:13:24	S1	Okay		
204.	00:13:25	P1	...to you.	Pharmacist's traits	2.3
205.	00:13:26	S1	Okay.		
206.	00:13:25	P1	It's just that		
207.	00:13:27	S1	That's		
208.	00:13:28	P1	But I've found that with, you get individuals...		
209.	00:13:32	S1	Yeah		
210.	00:13:34	P1	... *[inaudible]* chemists, I don't know which, I always come to this one...		1.1 1.2
211.	00:13:37	S1	Yeah		
212.	00:13:38	P1	...mostly this one...		1.1 1.2
213.	00:13:38	S1	Okay, okay, all right. That's erm, that's really, really helpful.		

214.	00:13:45	P1	But this, this eh, particular kind of shop, they've always had people, I forget the chap, I forget his name now...		1.1
215.	00:13:52	S1	Sure		
216.	00:13:53	P1	...but, eh, he was sort of a local person...		1.1
217.	00:13:58	S1	Okay		
218.	00:13:59	P1	and I suppose he was asked a lot of questions you know...	Patient asking questions	
219.	00:14:03	S1	Right, right		
220.	00:14:04	P1	... without, eh, advertising or anything like that, because he was local, they knew him.		1.1
221.	00:14:09	S1	Yeah, yeah		
222.	00:14:11	P1	He was very competent.	Pharmacist's traits	2.1
223.	00:14:12	S1	Okay, all right.		
224.	00:14:14	P1	It's when people warm to someone, that...	Pharmacist's traits	1.3
225.	00:14:16	S1	Uh-mmm		
226.	00:14:16	P1	...you know, they're prepared to, eh...	Pharmacist's traits	1.3
227.	00:14:18	S1	I see.		
228.	00:14:20	P1	...to ask things.	Pharmacist's traits	1.3
229.	00:14:21	S1	I see, okay. And you think, you think in any case that – do you think, do you think by any chance you may have agreed to have the, the MUR, the consultation yesterday, because you already felt quite comfortable with the pharmacist?		1.3 4.1
230.	00:14:41	P1	That's part of it, yes.		4.1
231.	00:14:42	S1	Right		
232.	00:14:42	P1	Oh yes, yes		
233.	00:14:43	S1	Okay		
234.	00:14:43	P1	If it was someone who was very clinical and giving you the impression that it was just, eh, eh filling in what's known before,	Pharmacist's traits	1.3 4.1

			data collection,		
235.	00:14:57	S1	Uhmm, uhmm		
236.	00:14:57	P1	I don't think I would have been...		4.1
237.	00:14:59	S1	I see		
238.	00:15:00	P1	...all that keen.		4.1
239.	00:15:01	S1	Okay, okay. So it's, yeah, that's very interesting actually. So, so if I can just ask, that when you had the chat, there wasn't any of this sort of typing or form...		
240.	00:15:12	P1	No, she, she had a form...	Administration	
241.	00:15:15	S1	Yeah		
242.	00:15:15	P1	...there which, eh, was questions about the medications,	Pharmacist gathering information or asking questions	4.2
243.	00:15:19	S1	Yeah		
244.	00:15:19	P1	...when did I take it, why did I take it at that time...	Pharmacist gathering information or asking questions	4.2
245.	00:15:22	S1	Yeah		
246.	00:15:23	P1	...there was only one that I didn't have an answer to...	Pharmacist gathering information or asking questions	3.1 4.2
247.	00:15:28	S1	Right		
248.	00:15:28	P1	...why I took it in the evening...		3.1
249.	00:15:29	S1	Uh-hmm		
250.	00:15:30	P1	...but with the things like, eh, the statins, you do take at night, because that's...		3.1
251.	00:15:34	S1	Uh-hmm		
252.	00:15:36	P1	...and the, the aspirin I've got from a doctor which I take at night. Eh, she couldn't understand why I was taking it at night...	Pharmacist gathering information or asking questions	3.1

253.	00:15:45	S1	Uh-mmm		
254.	00:15:45	P1	And, eh, but I, I didn't know. I think it's something to do with... I had low, low blood pressure because the tablets, some of the tablets I was taking was reducing my blood pressure.		3.1
255.	00:16:00	S1	Uh-hmm.		
256.	00:16:01	P1	And I was also taking the blood pressure tablet...		3.1
257.	00:16:04	S1	Uh-hmm		
258.	00:16:04	P1	...and my blood pressure was getting too low...		3.1
259.	00:16:06	S1	Right, right		
260.	00:16:07	P1	...and I think the doctor said to me or the consultant said, "Well, take that one at night...		3.1
261.	00:16:15	S1	Okay		
262.	00:16:15	P1	...and then you, eh, if it does have an effect on your blood pressure...		
263.	00:16:19	S1	Uh-hmm		
264.	00:16:19	P1	...you would be..."		
265.	00:16:20	S1	A clear effect?		
266.	00:16:21	P1	Yeah, yeah		
267.	00:16:22	S1	Okay.		
268.	00:16:23	P1	So that's the only – I think that was the reason...		
269.	00:16:28	S1	Okay		
270.	00:16:28	P1	...I took it at night. So I've taken it for years and years and years.		
271.	00:16:31	S1	Okay. All right. And so... Are you okay to carry on talking? Is that all right?		
272.	00:16:37	P1	*Patient confirming with his wife whether she was okay* All right.		
273.	00:16:48	S1	So when, when you, you described that the pharmacist asked you some of the questions, because there is actually as you would have observed, a form that the pharmacist does have to fill in... {cross-		

			talking}		
274.	00:16:59	P1	Oh yes, yes, well, it was all about medication. Did that affect you? They're all good questions, you know...	Pharmacist gathering information or asking questions	4.2
275.	00:17:07	S1	Right		
276.	00:17:07	P1	...because I didn't have any doubts.		3.1
277.	00:17:09	S1	Right		
278.	00:17:10	P1	Sometimes you're not always keen on questioning the doctor...		1.3
279.	00:17:15	S1	Okay		
280.	00:17:16	P1	... you know, because they get a little bit upset, but if you talked to the pharmacist, because they are dealing with that medication all the time...	Pharmacist's traits	1.3
281.	00:17:26	S1	I see		
282.	00:17:28	P1	...and they've got no axe to grind.	Pharmacist's traits	1.3
283.	00:17:30	S1	Okay, okay. Whereas you feel maybe the doctors are...?		
284.	00:17:33	P1	Oh, I mean, the doctors are, I would say competent in that they know but you feel as though you shouldn't question them...		1.2 2.1
285.	00:17:42	S1	Right		
286.	00:17:42	P1	...about what they've prescribed for you.		1.2
287.	00:17:46	S1	Do you think that's the same with, with all generations, you know, all the generations of doctors because I know you've mentioned there...?		
288.	00:17:54	P1	Oh no. Years ago, you didn't question.		1.2
289.	00:17:57	S1	At all?		
290.	00:17:58	P1	It's only, it's only in these latter years where we've been able to talk to doctors and question...	Patient asking questions	1.1
291.	00:18:05	S1	Yeah.		
292.	00:18:05	P1	...and ask why...	Patient asking questions	1.1

293.	00:18:07	S1	Yeah		
294.	00:18:08	P1	They even sometimes ask you, you know, things like that. Before, you just sat there and they said take this and you took it.		1.2
295.	00:18:16	S1	Right, right.		
296.	00:18:17	P1	I can't remember, but they used to have bits of paper in there telling you about all the side effects.		
297.	00:18:23	S1	Uh-hmm		
298.	00:18:24	P1	If I read all of mine, I would be afraid to take them.		3.3
299.	00:18:29	S1	Right, right.		
300.	00:18:30	P1	Some of the things they say on there are unbelievable.		3.3
301.	00:18:32	S1	Uh-hmm		
302.	00:18:34	P1	In fact, there's this one medication I took and it said don't take this if you suffer from heart problems.		3.3
303.	00:18:41	S1	Sure, which is of course...		
304.	00:18:43	P1	Yeah, so there. But, eh, the benefits outweigh the...		3.3
305.	00:18:48	S1	Uh-hmm. The, the risks.		
306.	00:18:51	P1	*[inaudible]*		
307.	00:18:51	S1	Okay, all right. Hmmm, that's all food for thought actually. It's very interesting you mentioned the, the point about, you know, the doctor saying take this and you'd be expected to take it.		
308.	00:19:07	P1	Yes, but that was years ago, not now...		
309.	00:19:09	S1	Right		
310.	00:19:09	P1	...because people question		3.1
311.	00:19:11	S1	Right. So do you think from your perspective, and I think you might have already answered this, but do you think from your perspective, having the chat with the pharmacist could have, maybe not in your case but in another patient's case, somebody else's case, could've helped them take their medicine?		

312.	00:19:34	P1	Oh, I know, I know people have spoken to the pharmacist about the tablets...	Patient asking questions	3.1
313.	00:19:39	S1	Yeah		
314.	00:19:39	P1	that they've been prescribed.	Patient asking questions	
315.	00:19:40	S1	Right, right		
316.	00:19:40	P1	You know, well, they may say to them, I'm getting a bit dizzy or – I mean, I've got friends who said they spoke with their pharmacists and they said that that should go away, that if it persists to go and see their doctor, yes, they do that...	Patient asking questions	2.3 3.1
317.	00:19:57	S1	Oh I see		
318.	00:19:57	P1	...rather than make an appointment...	Pharmacist's traits	2.3
319.	00:20:00	S1	Yeah, right		
320.	00:20:01	P1	...which sometimes you have to wait perhaps a week for.		2.3
321.	00:20:04	S1	Okay, I see. So it's the, is it, is it more the reassurance then? Hearing somebody...		
322.	00:20:10	P1	Yeah, 'cause they, they. The pharmacists are amongst the very few professionals...	Pharmacist's traits	1.3
323.	00:20:18	S1	Uh-hmm		
324.	00:20:18	P1	...that people actually trust.	Pharmacist's traits	1.3
325.	00:20:21	S1	All right, okay.		
326.	00:20:22	P1	The doctors they trust. The policemen they trust.		1.3
327.	00:20:25	S1	Yeah		
328.	00:20:25	P1	You know, you are brought up, the pharmacist they trust...		1.3
329.	00:20:28	S1	Okay		
330.	00:20:29	P1	...and, eh, they're one, that's why people are prepared to ask those sorts of questions.		1.3
331.	00:20:35	S1	I see. Thank you for that. That's erm, that's all just very helpful actually. I think 'cause, we, we're both from, part of xxx's (researcher's name) job and part of my,		

			well, all of my job is, is actually involved in training future pharmacists so some of the things that you've said will actually feed into the, the training of pharmacists. It's very helpful {cross-talking}		
332.	00:21:03	P1	Well they do. They trust pharmacists, yes. Because they're considered, I mean, they're professional people who understand the medications.	Pharmacist's traits	2.1
333.	00:21:13	S1	Yeah, yeah, okay.		
334.	00:21:15	P1	Yeah		
335.	00:21:16	S1	All right. Thank you. Erm, was there anything, I don't know, was there anything that you wanted to pick up on at all?		
336.	00:21:25	S3	The eh, the thing that you said to me that was really interesting is, erm, when you said again, doctors saying take this medicine and patients taking the medicine. What sort of role do you think patients should play in making decisions about whether they should take medicines or maybe should make changes in their diet or take up exercise? Do you think they should play any role? {cross-talking}		
337.	00:21:47	P1	Oh, I think, well, I've had to, eh, change my diet. I don't have... very little salt. I mean, we should take responsibility. We shouldn't think that we can carry on and the medication is going to do this, be the magic pill. I've had to change my diet. I've had very little meat. I have a lot of fish. I've cut out most saturated fats, not that it's going to do me any good, eh, now because it's too late, but oh no, I think that the patient, I mean the doctors normally warn you, the pharmacist certainly has warned me, and I think they, they've got a part to play. And if they think, I mean, I know different people who've questioned the doctor and the pharmacist about statins. My own sister-in-law's tongue swelled up. Her lips swelled up. And eh, one doctor said, who prescribed it, "no, no, no, it's nothing to do with that. You're allergic to something." Anyway, it persisted and she went back to the surgery and there was a locum on, a young locum, and he said, "What medication are you on?" He said, "Stop that. I'll inform them. Stop that and we'll see what it's like, eh, what happens." And, eh, it was the statin that was causing the, the swelling so it doesn't suit everybody. So you should question the,		2.2 3.1

			the doctor and you should attempt to help by, by cutting out various things that are causing the problem.		
338.	00:23:59	S3	Right		
339.	00:24:01	P1	So you've both got a part to play, really.		
340.	00:24:02	S1	So, yes, I mean, what you're saying is that the patient does need to take some responsibility {cross-talking}		
341.	00:24:07	P1	Oh certainly, yeah. I mean, the doctor has the responsibility to the patient, but, erm, whether the tablets are achieving the result and the, and the patient, if the doctor says, "Well, you're smoking, cut smoking and you're drinking too much, then they, eh, they should do that. Otherwise, it's not much worth taking the medication.		1.2 2.2 3.1
342.	00:24:30	S3	So what about if the doctor recommends a certain tablet and the patient may feel that they don't want to take the medication, so we're not talking about any lifestyle changes, we're talking about actual medicine...		
343.	00:24:42	P1	Yes, yes.		
344.	00:24:43	S3	...do you think the patient should be able to say, "no, I don't want to take it?"		
345.	00:24:46	P1	Oh yes, yes		3.1
346.	00:24:47	S3	They should be?		
347.	00:24:48	P1	Oh yes. Oh yes, you can't take that right away from them. I mean, the doctor is trying to salvage the patient's life and help him. If the patient refuses it, I can't see, they should never be forced to take medication.		3.1
348.	00:25:09	S3	And do you think it would be easy for patients to have that conversation with the doctor? Say "No, I don't want this tablet?" {cross-talking}		
349.	00:25:13	P1	No, I don't. No I don't. No. Some patients can do it. I know some patients who would, eh, straight away, friends of mine who are very straight talkers. They would say, "No, I'm not taking that doctor. No, I'm not taking that." They wouldn't take it whether they fell out with the doctor or not, they're just that type of people but the majority of us perhaps, eh, would say		3.1

			it in a different way, "well, I don't really want to take that, doctor, do I have to take it?" But they should still be given the right to, eh, to refuse the medication.		
350.	00:25:59	S3	And do you think those people that find it difficult to have that conversation with the doctor, they find it easier to bring their concerns up when they talk to the pharmacist?		
351.	00:26:09	P1	Oh, definitely. Oh definitely they do, yes. Because eh. Oh yes, they, they look on the pharmacist as different to the doctor. I still believe that they believe the pharmacists know more about medication than the doctors.	Pharmacist's traits	2.1
352.	00:26:29	S3	Right		
353.	00:26:30	P1	I mean, that's certainly naturally a ridiculous statement but you do feel because they're, they are pharmacists and that's their profession and, eh, perhaps it would be better to talk to the pharmacist before they make that decision.	Pharmacist's traits	2.1
354.	00:26:46	S3	That's interesting.		
355.	00:26:47	P1	Uh-hmm.		
356.	00:26:48	S3	That's interesting. So would you say all people who are taking medicines maybe should have a consultation with the pharmacist about their medicines as well as seeing the GP?		
357.	00:26:58	P1	Well, I think honestly, doctors should have, eh, more conversations with pharmacists rather than the patient because the patient is still ignorant of the, eh, the properties of the medication and they've still only got their, their word that that's going to do it. No, I think they should say, well, perhaps you should have taken this, this one's on the market now and, eh, it has less side effects because I don't suppose the doctors get the time, do they? Do they get the time to study all the side effects?		1.3 2.1
358.	00:27:36	S1	Well, that's interesting actually because I think over the years, the, the medical education of doctors has shifted so that they're, it, it's what we would call pharmacology...		
359.	00:27:50	P1	Oh yes.		

360.	00:27:50	S1	...that sort of brought in a lot more...		
361.	00:27:52	P1	Oh I see, yes		
362.	00:27:53	S1	...erm, into the course and also in terms of the training. But I mean, I think you're right in that there is this sort of, the doctors are seen as people who diagnose...		
363.	00:28:04	P1	Yes		
364.	00:28:05	S1	...and the pharmacists know more about medicines but then – erm, I mean, we're just sort of chatting about education...		
365.	00:28:10	P1	Oh yes {cross-talking}		
366.	00:28:11	S1	But pharmacists nowadays can also train to be prescribers...		
367.	00:28:17	P1	Oh I see		
368.	00:28:17	S1	and sort of learn to...		
369.	00:28:18	P1	There, well, there you are, you see, but then patients don't know that, do they?		2.2
370.	00:28:25	S1	No, not, not yet, absolutely.		
371.	00:28:27	P1	They, they don't realise what training or what professional training the pharmacists have...	Pharmacist's traits	2.1
372.	00:28:34	S1	Yeah, yeah, absolutely.		
373.	00:28:35	P1	...as opposed to the doctor.		
374.	00:28:37	S1	Absolutely. But erm, but, yeah, I mean, I think obviously you can imagine there are all sorts of issues around overlap of job roles.		
375.	00:28:45	P1	Yeah, well, those, those times, as I say, things are changing, and as doctors, you just sat there and, eh, you tell them about your problems and he would, he would scribble away like that...		1.2
376.	00:28:59	S1	Right		
377.	00:28:59	P1	...and give you a new *[inaudible]* and you didn't know what it was until ...		1.2 3.1
378.	00:29:03	S1	Yeah		
379.	00:29:03	P1	...the pharmacist hand it over.		1.2

380.	00:29:04	S1	Yes, I see, okay.		
381.	00:29:05	P1	But, the, the, those times have changed. People challenge.		1.2
382.	00:29:09	S1	Uh-hmm		
383.	00:29:09	P1	They're encouraged to challenge, aren't they?		1.2
384.	00:29:11	S1	Yeah		
385.	00:29:11	P1	Every day on the television someone's worrying about your civil liberties...		
386.	00:29:16	S1	Yeah, yeah		
387.	00:29:17	P1	...and all that, you know. So, eh, to challenge doctors, we've still got some way to go there.		1.2
388.	00:29:25	S1	Yeah. All right. Erm, was there, I mean I think, obviously, you know, we don't want to keep you from, eh, from, eh, keep you in here for too long, we've got a million and one questions and I've wondered whether you've got any questions you'd like to ask us because we're here and...		
389.	00:29:43	P1	Not really, no.		
390.	00:29:43	S1	No, okay, or anything you, anything else you wanted to raise with us?		
391.	00:29:49	P1	No, I think that, eh, the National Health is fantastic. I think there is a better relationship between all the, eh, pharmacies and surgeries...		1.2 3.4
392.	00:29:59	S1	Uh-hmm		
393.	00:30:00	P1	...we never used to have that at all.		1.2
394.	00:30:02	S1	Right, right		
395.	00:30:04	P1	No, it seems to be, eh, *[inaudible]*, I'm very happy.		
396.	00:30:08	S1	Okay		
397.	00:30:08	P1	Very *[inaudible]*, yeah.		
398.	00:30:09	S1	*General conversation continued with regards to the local area, the university and the interviewer's studies.*		
399.	00:30:10	P1	*General conversation continued with regards to the local area, the university*		

			and the interviewer's studies.		
400.	00:35:50	S1	All right, thank you very much		
401.	00:35:52	P1	Thank you.		